



# MACROFLEX SLOVAKIA

kompenzátory a technické prvky  
pre potrubné systémy



- Vlnovcové kompenzátory MACOGA ▶
- Tkaninové kompenzátory ROTH ▶
- Vlnovcové hadice z nerezovej ocele ROTH ▶
- Gumené kompenzátory TRELLEBORG ▶
- Kĺzné uloženia TRELLEBORG, PIHASA ▶
- Potrubné uloženia PIHASA ▶

## KATALÓG



# MACROFLEX SLOVAKIA

Kompenzátory a technické prvky  
pre potrubné systémy

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**Výhradné zastúpenie pre Slovenskú republiku pre:**

- Vlnovcové kompenzátory MACOGA, S.A.
- Tkaninové kompenzátory DIETER A. ROTH GmbH
- Vlnovcové hadice z nerezovej ocele DIETER A. ROTH GmbH
- Gumené kompenzátory TEGUFLEX  
a špeciálne gumené hadice Trelleborg Izarra, S.A.U.
- Klzné uloženia Trelleborg Izarra, S.A.U. a PIHASA, S.A.
- Potrubné uloženia PIHASA, S.A.

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Vážení priatelia,,

naša spoločnosť od roku 1996 pracuje v oblasti potrubných systémov so špeciálnym zameraním na kompenzačné prvky a ich aplikáciu, či už pri inštalácii nových alebo udržiavaní súčasných systémov.

V dodávkach týchto komponentov spolupracujeme s radou slovenských a zahraničných dodávateľov, a to hlavne so spoločnosťami MACOGA, S.A., Trelleborg Izarra, S.A.U., DIETER A. ROTH GmbH, PIHASA, S.A.

Jedná sa o dodávateľov certifikovaných podľa ISO 9001 a hľadisko kvality patrí medzi prioritné záujmy firemnej obchodnej stratégie. Nami dodávané kompenzátory sú certifikované BVQI Slovakia s. r. o. a mnohými renomovanými zahraničnými skúšobňami (TÜV, Bureau Veritas, Det Norske Veritas a iné.) a sú navrhované, vyrábané a skúšané v súlade s nariadením PED 97/23/CE Annex III., modul H.

Pružne sa prispôbujeme a riešime konkrétne technické prípady už vo fáze projektovania a zároveň ponúkame široký sortiment štandardných i neštandardných kompenzátorov a ďalších prvkov v najvyššej kvalite pri zachovaní priaznivých cien a dodacích termínov.

Sme schopní riešiť aj problematiku pevnostných výpočtov a prepočtov potrubných trás. Dokonalý systém počítačového projektovania a potrubných výpočtov, najmodernejšie výrobné procesy, starostlivý výber surovín a materiálov, laboratórne testy a priama kontrola kvality sa odráža v následnej spokojnosti užívateľov.

K tomuto prístupu nás priviedla snaha zamedziť prípadným problémom pri prevádzke, ktoré by mohli mať príčiny napr. v nekvalifikovanom použití alebo nedostatočnej znalosti problematiky potrubných dilatácií. Poradenskú službu poskytujeme v rámci dodávky bezplatne.

V tomto katalógu nájdete základný prehľad nami dodávaných výrobkov. Jedná sa o:

- vlnovcové kompenzátory MACOGA, S.A.
- tkaninové kompenzátory DIETER A. ROTH GmbH
- vlnovcové hadice z nerezovej ocele DIETER A. ROTH GmbH
- gumené kompenzátory Trelleborg Izarra, S.A.U. a špeciálne gumené hadice
- klzné uloženia Trelleborg Izarra, S.A.U, PIHASA, S.A.
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Ak ešte nie ste našim zákazníkom prišli by sme si, aby Vás naša ponuka zaujala a veríme, že čoskoro vstúpíte do radov našich stálych a spokojných partnerov.

S pozdravom

**Zoroslav Potrok**  
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 ŠKODA TRADING

TECHNOMONT  
 TEMO  
 TEPLÁRNA ČESKÉ BUDĚJOVICE  
 TEPLÁRNA OTROKOVICE  
 TEPLÁRNA ÚSTÍ NAD LABEM  
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 TEPLO ZLÍN  
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## PL

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 SICES POLSKA WARSZAWA  
 VEOLIA WATER SYSTEMS KRAKÓW  
 ZACHEM URC BYDGOSZCZ  
 ZAKŁADY AZOTOWE KĘDZIERZYN  
 ZREW WARSZAWA



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# MACROFLEX SLOVAKIA

Kompenzátory a technické prvky  
pre potrubné systémy

## Vlnovcové kompenzátory



# MACOGA



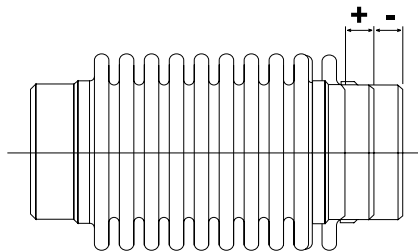
## Všeobecné informácie

Všetky potrubné systémy, v ktorých sa dopravujú médiá s premenlivou teplotou odlišnou od teploty okolia, podliehajú dĺžkovým zmenám (predĺženie, stlačenie). Ak týmto teplotným dilatáciám nie je venovaná patričná pozornosť, môžu tieto spôsobiť porušenie potrubia. To isté môže nastať vplyvom mechanického chvenia, ktoré sa na potrubie prenáša od kompresorov, čerpadiel, turbín a piestových motorov.

Základné pohyby, pre ktorých kompenzáciu sú vlnovce navrhované, sú:

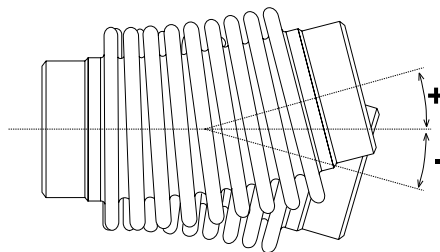
- **axiálny pohyb**

*(predĺženie alebo stlačenie priameho úseku potrubia v smere jeho pozdĺžnej osi)*



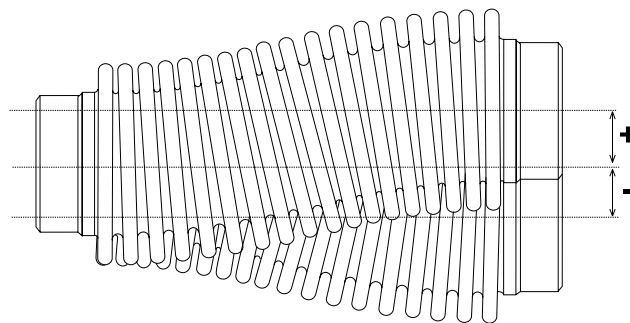
- **uhlová výchylka**

*(ohybová deformácia pôvodne priamej pozdĺžnej osy vlnovca do kruhového oblúka)*



- **laterálny pohyb**

*(radiálny pohyb jedného konca kompenzátora vzhľadom k druhému - posudzované opäť vzhľadom k pozdĺžnej osi potrubia)*



Kovové vlnovcové kompenzátory MACOGA ponúkajú optimálne riešenie týchto problémov. Sú najefektívnejším prvkom na vyrovnanie stlačenia, predĺženie stranových a uhlových pohybov a vibrácií v potrubnom systéme.

#### **Výhody ich použitia sú:**

- malý priestor potrebný na montáž
- pružnosť vlnovca absorbuje výchylky v mnohých smeroch
- nevyžadujú údržbu
- minimálne tlakové a tepelné straty

#### **Výroba a návrh**

Kompenzátory MACOGA sú projektované, vyrábané a testované podľa noriem EJMA (združenie výrobcov vlnovcových kompenzátorov) a noriem ASME (USA), odstavce VIII, závery BB (tlakové potrubia, výmeníky tepla, dilatačné spojky). Pre špeciálne alebo úzko vymedzené požiadavky sú kompenzátory projektované, vyrábané a testované podľa predpisov AD MERKBLÄTTER, STOOMWEZEN a ďalších. Kontrola projektu sa vykonáva podľa „záručných predpisov kvality firmy MACOGA a. s.“ odstavce 5.

Podstata kompenzátorov spočíva v pružnosti vlnovca, ktorá je výslednicou návrhu tvaru vlnovca a vlastností materiálu, použitého pri výrobe. Výber materiálov na výrobu vlnovcov je založený na:

- vhodnosti na zvlnenie (ťažnosť materiálu)
- teplotnej odolnosti
- odolnosti proti korózii
- odolnosti proti únave
- pružnosti v prevádzke

#### **Proces návrhu a výroby je certifikovaný**

- Bureau Veritas Quality International ISO 9001, BS5750 Part 1, EN 29001.
- TÜV SÜDWEST - AD MERKBLATT HP0/TRD 201 and W0/TKD 100 - Report No. 2/0/0485/1 Y 2/0/0485/2
- PED 97/23/EC Annex III - Modul H
- Španielskym ministerstvom obrany a členskými štátmi NATO. Registrované pod číslom 7737B/5182 generálneho riaditeľstva zbrojného priemyslu španielskeho ministerstva obrany.
- Španielskym ministerstvom priemyslu ako výrobca tlakových nádob.
- Národným inštitútom priemyslu - sekciou lodného staviteľstva.

## Prehľad dodávaných typov

Prehľad kovových vlnovcových kompenzátorov dodávaných firmou MACROFLEX Slovakia s. r. o.



### MWA

Axiálny kompenzátor s navarovacími koncami. Vyrovnáva zmeny dĺžky potrubia v smere osi kompenzátora.



### MTE

Axiálny kompenzátor rovnaký ako MWA, ale s vonkajším závitom na nátrubkoch.



### MTI

Axiálny kompenzátor rovnaký ako MWA, ale s vnútorným závitom na nátrubkoch.



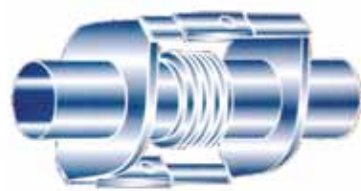
### MFA

Axiálny kompenzátor s pevnými prírubami na koncoch. Vyrovnáva zmeny dĺžky potrubia v smere osi kompenzátora.



### MFG

Axiálny kompenzátor s otočnými prírubami na koncoch. Vyrovnáva zmeny dĺžky potrubia v smere osi kompenzátora.



#### **MWP**

Kĺbový kompenzátor s jednou osou otáčania s navarovacími nátrubkami.

Vyrovnáva uhlové výchylky v jednej rovine.



#### **MFP**

Kĺbový kompenzátor s jednou osou otáčania s pevnými prírubami na koncoch.

Vyrovnáva uhlové výchylky v jednej rovine.



#### **MWC**

Kĺbový kompenzátor s kardanovým kĺbom s navarovacími nátrubkami.

Vyrovnáva uhlové výchylky v priestore.



#### **MFC**

Kĺbový kompenzátor s kardanovým kĺbom s pevnými prírubami na koncoch.

Vyrovnáva uhlové výchylky v priestore.



#### **MWL**

Laterálny kompenzátor s navarovacími nátrubkami.

Vyrovnáva priečne pohyby v rôznych rovinách. Tiahla zachytávajú účinok vnútorného pretlaku.



#### MFL

Laterálny kompenzátor s pevnými prírubami. Vyrovnáva priečne pohyby v rôznych rovinách.

Tiahla zachytávajú účinok vnútorného pretlaku.



#### MWD

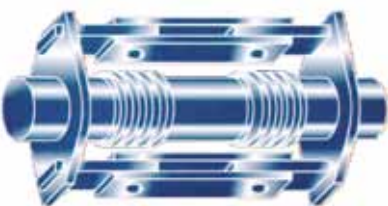
Univerzálny kompenzátor s navarovacími nátrubkami.

Vyrovnáva akékoľvek kombinácie troch základných pohybov. Je určený hlavne na vyrovnávanie priečných a veľkých axiálnych pohybov.



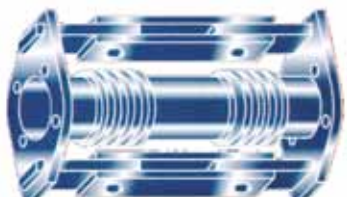
#### MFD

Univerzálny kompenzátor rovnaký ako MWD, ale s pevnými prírubami.



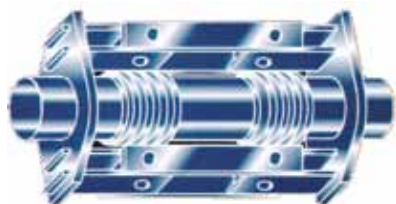
#### MWY

Dvojkĺbový kompenzátor s navarovacími nátrubkami určený na vyrovnávanie priečných a uhlových výchylek v jednej rovine.



#### MFY

Dvojkĺbový kompenzátor s pevnými prírubami určený na vyrovnávanie priečných a uhlových výchylek v jednej rovine.



#### **MWK**

Dvojkĺbový kompenzátor s navarovacími nátrubkami určený na vyrovnávanie priečnych a uhlových výchyliek vo všetkých smeroch.



#### **MFK**

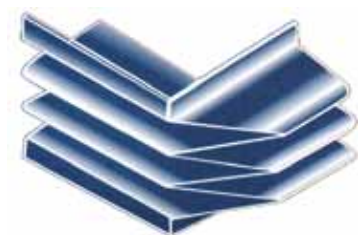
Dvojkĺbový kompenzátor s pevnými prírubami určený na vyrovnávanie priečnych a uhlových výchyliek vo všetkých smeroch.



#### **MPB**

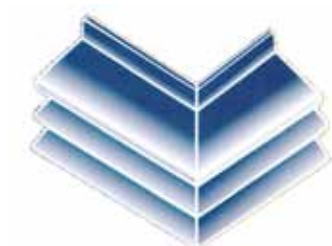
Tlakovo vyvážený kompenzátor je určený na špeciálne použitie. Vyrovnáva osové, priečne pohyby (alebo ich kombináciu). Je vybavený konštrukciou zachytávajúcou silu od vnútorného pretlaku, ktorá sa tak neprenáša na ukotvenie.

Je vhodný na kompenzovanie dilatácií medzi potrubím a tlakovým zariadením.



#### **MRW**

Osový kompenzátor nekrúhového prierezu. Je určený pre rovnakú oblasť použitia ako osové kompenzátory kruhového prierezu. Vlny sú v tvare V s prekladom v rohoch. Osový kompenzátor je možné dodať s navarovacími alebo prírubovými koncami.



#### **MRV**

Osový kompenzátor nekrúhového prierezu. Je určený pre rovnakú oblasť použitia ako osové kompenzátory kruhového prierezu. Vlny sú v tvare V so spojmom v rohoch. Osový kompenzátor je možné dodať s navarovacím alebo prírubovým ukončením.



#### MRU

Osový kompenzátor nekruhového prierezu. Je určený pre rovnakú oblasť použitia ako osový kompenzátor kruhového prierezu. Vlny sú v tvare U. Spojenie strán vlnovca je realizované polkruhovými rohovými segmentami. Kompenzátor je možné dodať s navarovacím alebo prírubovým ukončením.



#### MUX

Osový kompenzátor na absorbciu axiálneho pohybu. Vyrába sa z uhlíkatej alebo nerezovej ocele ako jednovrstvový. Hlavným použitím je inštalácia vo výmeníkoch tepla a pod.



#### MRR

Kompenzátor s výstužnými krúžkami. Tento typ sa používa v prípade vysokých pracovných tlakov. Vyznačuje sa inštaláciou výstužných krúžkov v medzerách medzi vlnami.



#### MEP

Kompenzátor s externe zaťažovaným vlnovcom. Tento typ sa používa v prípade vysokých pracovných tlakov a veľkých axiálnych pohybov. Externé tlakové zaťažovanie vlnovca umožňuje použiť vlnovce s väčšou dĺžkou ako v prevedení MWA.



#### MJA

Kompenzátor s vonkajším plášťom. Tento typ sa používa v prípade koaxiálnych potrubí alebo k iným účelom. Napr. na sprievodné vykurovanie, vákuovo izolované potrubie, ochranné potrubia a pod. Kompenzátor je vytvorený vnútorným a vonkajším vlnovcom.

## Kontrola kvality a testy

Vlnovcové kompenzátory sú považované za výrobky vyspelého strojárstva. Útvár zabezpečenia kvality firmy MACOGA a. s. starostlivo sleduje dodržiavanie technologických postupov na všetkých úrovniach od projektu cez výber materiálov až po finálne skúšky každého kompenzátora podľa manuálu zabezpečenia kvality MACOGA, ktorý spĺňa normu UNE 66. 901 STANDART., ekvivalentnú k norme ISO/DIN 9001.

Všetky kompenzátory a dilatačné spojky MACOGA sú podrobené rozmerovým kontrolám v rôznych štádiách ich výroby a testom tesnosti pred expedíciou zo závodu.

**Na vyžiadanie môžu byť vykonané tiež nasledujúce testy a skúšky:**

### NEDEŠTRUKTÍVNE

- röntgenové snímky
- skúška tesnosti vzduchom
- ultrazvukové testy
- skúšky magnetickými časticami
- hydraulické tlakové skúšky
- chemické zloženie materiálu
- mechanické vlastnosti materiálu
- únavové testy pružnosti vlnovca
- skúška tesnosti hélíom

### DEŠTRUKTÍVNE

- životnostné skúšky cyklickými deformáciami
- torzné skúšky s vnútorným pretlakom
- lomové skúšky ťažnosti

Všetky testy prebiehajú v súlade s procedúrou schválenou oddelením zabezpečenia kvality a zodpovedajú požiadavkam noriem USA ASME CODE, odstavce V „Nedeštruktívne skúšky“, odstavce VIII, odsek 1 „Tlakové nádoby“ a normám EJMA sekcia D. 3. Testy a kontroly môžu prebiehať pod dohľadom nezávislých organizácií a byť nimi potvrdené. Je možné využiť špecializované spoločnosti ako sú Det Norske Veritas, American Bureau of Shipping, Bureau Veritas, TÜV, Lloyd's Register of Shipping atď.

# Pokyny na montáž a bezpečnostné doporučená

Na zabezpečenie správnej funkcie vlnovcových kompenzátorov je potrebné dodržiavanie určitých podmienok, ktoré predlžujú životnosť a zaručia dlhodobú bezúdržbovú prevádzku kompenzátorov. V rozdielnych štádiách montáže je potrebné dbať hlavne na:

## MONTÁŽ

- predchádzať poškodeniu vlnovca údermi, ktoré spôsobia trvalé poškodenie tvaru vlnovca, chrániť vlnovec pri zvaračských prácach
- zabrániť akejkoľvek deformácii vlnovca s voľnými koncami alebo deformáciám (dĺžkovým, uhlovým atď.) väčším než budú deformácie pri riadnej prevádzke potrubia, pre ktoré je kompenzátor navrhnutý
- dodržať stanovené montážne predpätie s ohľadom na prevádzkové limity v smere a veľkosti pohybu
- zistiť, či v kompenzátore nie sú žiadne rozperky alebo časti brániace jeho správnej funkcii
- montovať kompenzátor správne orientovaný v smere prúdenia média v potrubí s ohľadom na orientáciu vnútornej chráničky
- po montáži správne nastaveného kompenzátora musia byť odstránené prepravné poistky (ak boli použité)

## PRED UVEDENÍM DO PREVÁDZKY ALEBO PRED TLAKOVOU SKÚŠKOU

- skontrolovať správne umiestnenie kompenzátora
- skontrolovať, či je kompenzátor namontovaný v polohe zodpovedajúcej jeho správnej funkcii
- skontrolovať, či je kompenzátor správne namontovaný vzhľadom na smer prúdenia média
- skontrolovať, či sú odstránené všetky časti prepravného prípravku
- skontrolovať, či sú všetky potrubné uloženia realizované podľa projektu
- preveriť, či je výrobcom kompenzátorov povolené uskutočniť tlakovú skúšku na plánované parametre
- preveriť, či je výrobcom kompenzátorov povolené uskutočniť prefuk potrubia podľa plánovaných parametrov

## PRI TLAKOVEJ SKÚŠKE A PO JEJ SKONČENÍ

- skontrolovať, či sa nevyskytli netesnosti alebo pokles tlaku
- preveriť, či sa nejaví chovanie niektorého vlnovca ako nestabilné
- preveriť, či pevnosť a kotvenie pevných bodov, osových vedení, kompenzátorov a ostatných prvkov systému

## PERIODICKÉ KONTROLY

- vizuálne overovanie funkcie kompenzátorov
- zisťovanie eventuálneho výskytu nežiadúcich vibrácií
- kontroly výskytu vonkajšej korózie alebo straty dôležitých dielov (spojovacích skrutiek, tyčí) alebo zhoršenie stavu pevných bodov, podper, vedenia atď.
- kontrola stavu povrchu vlnovca - či usadeniny prachu alebo väčších častíc medzi vlnami nebránia jeho správnej funkcii

## Korekcie kompenzačných schopností

Korekcie kompenzačnej schopnosti kompenzátora s ohľadom na počet záťažových cyklov (N) po dobu plánovanej životnosti.

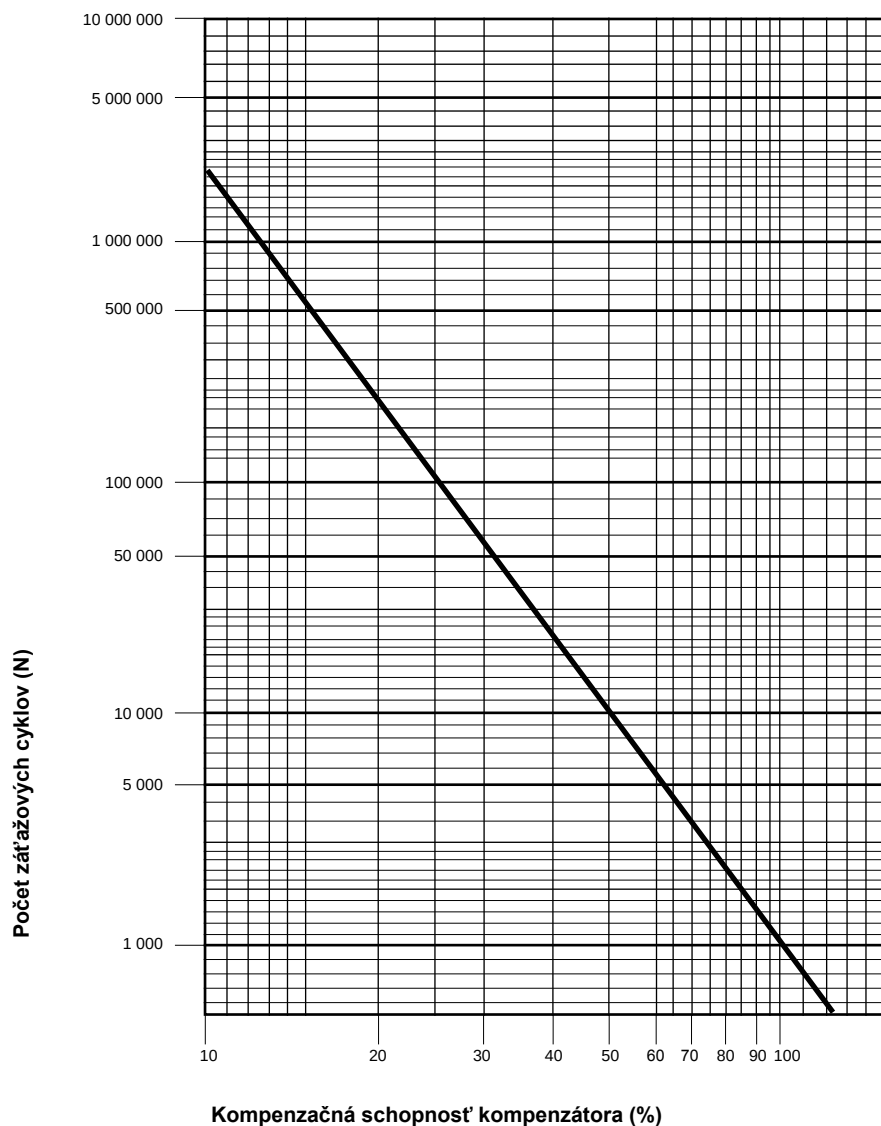
Katalógové hodnoty kompenzačnej schopnosti jednotlivých typov kompenzátorov sú uvádzané pre 1000 záťažových cyklov za dobu životnosti.

Jedným záťažovým cyklom sa rozumie nábeh na plné zaťaženie a odstavenie.

Z diagramu vyplýva, že pre zvýšenie počtu záťažových cyklov v požadovanej dobe životnosti je potrebné použiť kompenzátor s rezervou kompenzačných schopností.

Napr. pre:

|       |                                 |           |
|-------|---------------------------------|-----------|
| 1000  | cyklov je kompenzačná schopnosť | 100 %     |
| 5000  |                                 | 63 %      |
| 11000 |                                 | 50 % atď. |



## Informatívna tabuľka materiálov používaných pri výrobe kompenzátorov a potrubí

| Materiály |                 |              |          |              |
|-----------|-----------------|--------------|----------|--------------|
| STN       | DIN             |              | ASTM     |              |
| 11 353    | St 35           | 1 629B/3     | Gr A     | A 192, A 519 |
|           | St 37.0         | 1 626, 1 629 | Gr A     | A 53         |
| 11 366    | HI              | 17 155       | Gr A Fx  | A 201        |
| 11 373    | U St 37.2       | 17 100       | 1 015    | A 107        |
|           |                 |              | Gr C     | A 283        |
| 11 375    | R St 37.2       | 17 100       | 1 015    | A 107        |
|           |                 |              | Gr C, D  | A 283, A 285 |
| 11 416    | HI,             | 17 155       | Gr B Fx  |              |
|           | St 42-2, C 22 N | 17 200       | Gr 60    | A 515        |
|           |                 |              | Gr D     | A 414, A 442 |
| 12 020    | C 22 N, C 22.3  | 17 200       | Gr I     | A 105        |
| 12 021    | St 35.8         | 17 175       | Gr A     | A 106        |
| 12 022    | St 45.8         | 17 175       | Gr B     | A 106        |
| 15 020    | 15 Mo 3         | 17 155       | Gr P1    | A 335        |
|           |                 | 17 175       | GrT1     | A 209        |
| 15 121    | 13 CrMo 4 4     | 17 155       | Gr F12   | A 182        |
|           |                 | 17 175       | Gr T12   | A 213        |
|           |                 |              | Gr P12   | A 335, A 333 |
| 15 128    | 14 MoV 6 3      | 17 175       | Gr P24   | A 405        |
| 15 313    | 10 CrMo 9 10    | 17 175       | Gr F22   | A 182, A 336 |
|           |                 |              | Gr D     | A 387        |
|           |                 |              | Gr P22   | A 335        |
| 15 320    | 24 CrMoV 5 5    | 17 240       | B 21     | A 540        |
|           |                 |              | B16      | A 193        |
| 17 021    | X 10 Cr 13      | 17 440       | F6       | A 182        |
|           |                 |              | B6       | A 193        |
|           |                 |              | 410      | A 479        |
| 17 022    | X 20Cr 13       | 17 440       | 420      | A 276        |
| 17 102    | W Nr. 1.7362    |              | Gr F5    | A 182        |
|           |                 |              | Gr B5    | A 193        |
| 17 125    | W Nr. 1.4724    |              | TP 405   | A 268        |
| 17 134    | X 22 CrMoV 121  | 17 240       |          |              |
| 17 248    | X 10 CrNiTi 189 | 17 440       | TP 321 H | A 213        |
| 17 348    | X 10 CrNiMoTi   | 17 440       | F 316 H  | A 213        |

## Stanovenie maximálneho prípustného tlaku v kompenzátore

Najvyšší tlak v potrubí  $p_{max}$ , na ktorý je možné kompenzátor natlakovať, sa vypočíta z menovitého tlaku PN takto:

$$p_{max} = PN \times h \quad (bar)$$

kde PN (bar) menovitý tlak, pre ktorý je kompenzátor navrhnutý  
 h (-) korekčný faktor závislý na teplote  $t_{max}$ ,  
 ktorej je kompenzátor vystavený (viď tab. 2)  
 $t_{max}$  (°C) maximálna výpočtová teplota

pre určovanie PN kompenzátora pri známom  $p_{max}$  teda platí:

$$PN = p_{max} / h$$

### Korekčný faktor h pre kovové kompenzátory

| Teplota $t_{max}$ (°C) | 20 | 100  | 150  | 200  | 250  | 300  | 400  | 500  | 600  |
|------------------------|----|------|------|------|------|------|------|------|------|
| Faktor h               | 1  | 0,86 | 0,81 | 0,78 | 0,72 | 0,68 | 0,63 | 0,61 | 0,56 |



# AXIÁLNE KOMPENZÁTORY

Správna funkcia axiálnych kompenzátorov je podmienená dokonale osadenými pevnými bodmi (PB) a osovými vedeniami (V) potrubia. Pevné body musia byť dimenzované s ohľadom na maximálne možné sily od

- |                            |      |       |     |
|----------------------------|------|-------|-----|
| a) vplyvu tlaku v potrubí  | sila | $F_p$ | (N) |
| b) stlačenia kompenzátora  | sila | $F_w$ | (N) |
| c) vplyvu trenia v uložení | sila | $F_t$ | (N) |

Zvyčajne sa na zaťažení pevných bodov na potrubí najviac podieľa sila od vnútorného pretlaku v potrubí, ktorú osové kompenzátory nie sú schopné zachytiť. Silu od tlaku v potrubí musia zachytiť pevné body potrubného uloženia.

Ak je pevný bod umiestnený v ohybe potrubia, je potrebné uvažovať pri jeho dimenzovaní, okrem už uvedených záťažových síl, tiež s odstredivou silou, ktorá vzniká zmenou hybnosti prúdov tekutiny v oblúku.

- |                                    |      |       |     |
|------------------------------------|------|-------|-----|
| d) vplyv odstredivej sily v oblúku | sila | $F_o$ | (N) |
|------------------------------------|------|-------|-----|

**Poznámka:**

Pri kĺbových a laterálnych kompenzátoroch (kompenzátory s tiahlami) je sila od tlaku v potrubí zachytená konštrukciou kompenzátora.

## Osový kompenzátor s otočnými prírubami - príklad



# Výpočet jednotlivých síl pôsobiacich na pevné body

## Sila od tlaku v potrubí

$$F_p = 10 \times p \times A \quad (\text{N})$$

|   |                    |                                     |
|---|--------------------|-------------------------------------|
| p | (bar)              | výpočtový pretlak                   |
| A | (cm <sup>2</sup> ) | efektívny prierez vlnovca (katalóg) |

## Sila od deformácie kompenzátora

$$F_w = w \times c \quad (\text{N})$$

|   |        |                                       |
|---|--------|---------------------------------------|
| w | (mm)   | dilatácia potrubia                    |
| c | (N/mm) | axiálna tuhosť kompenzátora (katalóg) |

$$w = \Delta t \times L_c \times \alpha \quad (\text{mm})$$

|            |            |                                                                   |
|------------|------------|-------------------------------------------------------------------|
| $\Delta t$ | (deg)      | rozdiel maximálnej a minimálnej teploty ( $t_{\max} - t_{\min}$ ) |
| $L_c$      | (m)        | vzdialenosť pevných bodov                                         |
| $\alpha$   | (mm/m.deg) | súčiniteľ dĺžkovej rozťažnosti (vid'. tab. str. 1.17)             |

## Sila od trenia v uložení

$$F_t = \mu \times M \times L \quad (\text{N})$$

|       |       |                                                                                                |
|-------|-------|------------------------------------------------------------------------------------------------|
| M     | (N/m) | celkové zaťaženie potrubnej trasy na bežný meter (hmotnosť trubky, náplň, izolácia, sneh. . .) |
| L     | (m)   | dĺžka trubky medzi PB a kompenzátorom                                                          |
| $\mu$ | (-)   | súčiniteľ trenia v uložení                                                                     |

## Odstredivá sila v oblúku

$$F_o = 2 \times 10^{-4} \times A \times \rho \times v^2 \times \sin(b/2) \quad (\text{N})$$

|        |                      |                                          |
|--------|----------------------|------------------------------------------|
| A      | (cm <sup>2</sup> )   | efektívny prierez vlnovca (katalóg)      |
| $\rho$ | (kg/m <sup>3</sup> ) | hustota prúdiaceho média                 |
| v      | (m/s)                | rýchlosť prúdiaceho média                |
| b      | (deg)                | stredový uhol oblúku potrubia v stupňoch |

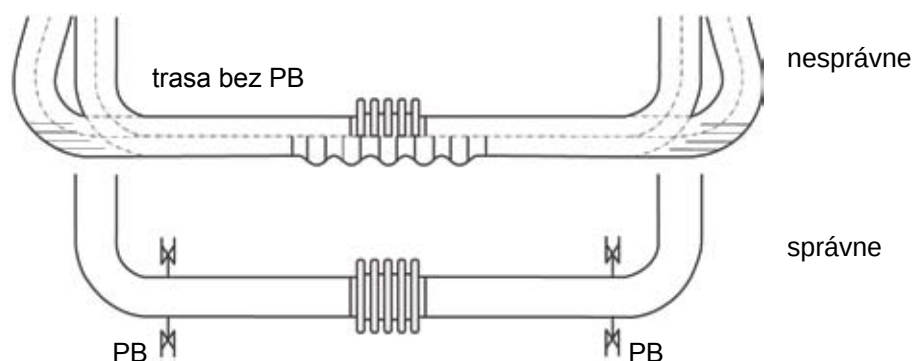
## Celková sila na pevný bod (PB)

$$F_c = F_p + F_w + F_t + F_o \quad (\text{N})$$

Tab. 1

| Súčiniteľ dĺžkovej rozťažnosti $\alpha$ (mm/m.deg) |                          |        |        |        |        |
|----------------------------------------------------|--------------------------|--------|--------|--------|--------|
| Materiál<br>(triedy podľa STN)                     | Teplota (°C) od 20 °C do |        |        |        |        |
|                                                    | 100                      | 200    | 300    | 400    | 500    |
| 11 xxx                                             | 0,0111                   | 0,0121 | 0,0129 | 0,0135 | 0,0139 |
| 12 xxx                                             | 0,0111                   | 0,0121 | 0,0129 | 0,0135 | 0,0139 |
| 15 xxx                                             | 0,0136                   | 0,0138 | 0,0141 | 0,0144 | 0,0147 |
| 17 xxx                                             | 0,0155                   | 0,0165 | 0,017  | 0,0175 | 0,018  |
| Med'                                               | 0,0155                   | 0,016  | 0,0165 | 0,017  | 0,0175 |
| AlMg <sub>3</sub>                                  | 0,0237                   | 0,0245 | 0,0253 | 0,0263 | 0,0272 |

**Příklad zdôvodnenia potreby správneho umiestnenia PB  
pri použití axiálnych kompenzátorov**



Pevný bod (PB) je potrebné navrhnuť na zaťaženie, ktoré je dané celkovou silou  $F_c$ .

V prípade medziľahlých pevných bodov (MPB – vid'. ďalej) je možné tieto dimenzovať na nižšie zaťaženie.

V praxi existujú rôzne spôsoby použitia kompenzátorov s ohľadom na usporiadanie potrubných trás a s prihliadnutím k premenlivým záťažovým podmienkam. Ponúkame Vám preto služby nášho technického oddelenia, ktoré navrhne najvhodnejší spôsob použitia kompenzátorov a vykoná výpočet zaťaženia pevných bodov a celkového uloženia potrubia.

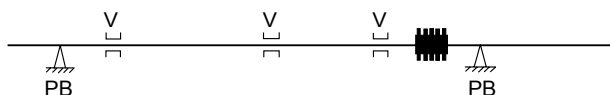
# Príklady použitia axiálnych kompenzátorov

## Legenda:

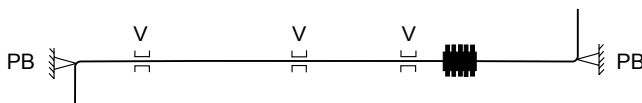
|            |                                                                        |
|------------|------------------------------------------------------------------------|
| <b>V</b>   | osové vedenie                                                          |
| <b>PB</b>  | hlavný pevný bod                                                       |
| <b>MPB</b> | medziľahlý pevný bod (nemusí byť dimenzovaný na plné zaťaženie $F_c$ ) |

## Súhrnný prehľad základných spôsobov použitia axiálnych kompenzátorov

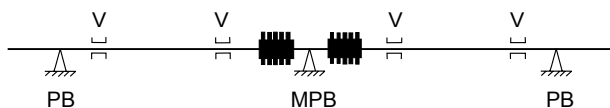
A) Klasický prípad - axiálny kompenzátor medzi dvoma hlavnými pevnými bodmi



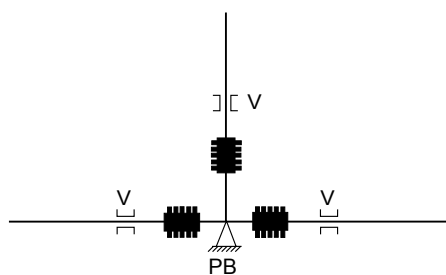
B) Axiálny kompenzátor medzi dvoma hlavnými pevnými bodmi umiestnenými v oblúkoch



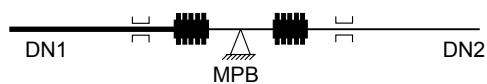
C) Pri kompenzácií dlhších trás je účelné usporiadať kompenzátory symetricky. Zaťaženie medziľahlého pevného bodu sa posudzuje s ohľadom na veľkosť jeho jednostranného zaťaženia.



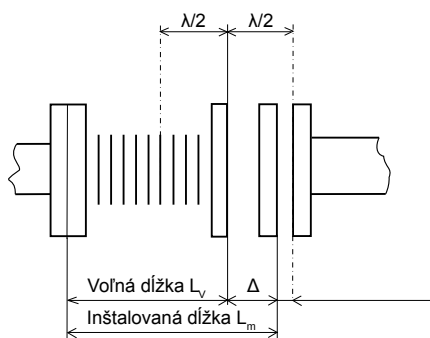
D) Použitie axiálnych kompenzátorov v potrubí s odbočkami.



E) V prípade, že potrubie mení prierez, musí byť medziľahlý pevný bod dimenzovaný ako hlavný a s ohľadom na rozdiel síl od susediacich kompenzátorov.



# Výpočet predpätia axiálneho kompenzátora



Pre plné využitie kompenzačných schopností osového kompenzátora je vhodné ho pri montáži predopnúť. Veľkosť predpätia závisí na maximálnej ( $t_{max}$ ) a minimálnej ( $t_{min}$ ) teplote média, ktorú môže mať potrubie po dobu životnosti a teplote potrubia pri montáži ( $t_{mon}$ ).

$$\Delta = \frac{\lambda}{2} - \left( \frac{t_{mon} - t_{min}}{t_{max} - t_{min}} \right) \cdot \lambda$$

$\Delta$  (mm)

predpätie kompenzátora  
(+) natiahnutie, (-) stlačenie

$\lambda$  (mm)

celková kompenzačná schopnosť  
kompenzátora (osový posun)

$$t_{min} \leq t_{mon} \leq t_{max}$$

$L_v$  (mm)

voľná dĺžka kompenzátora  
(stavebná dĺžka)

$L_m$  (mm)

montážna dĺžka kompenzátora  
(po predopnutí)

## Montážna dĺžka kompenzátora

$$L_m = L_v + \Delta \text{ (mm)}$$

## Návrh potrubného uloženia pri použití osových kompenzátorov.

Pre potrubné uloženia s osovými kompenzátormi používame pevné body (PB), osové vedenia (V) a rovinné podpery (P).

Význam a návrh pevných bodov bol popísaný v predchádzajúcich kapitolách.

Veľký význam majú osové vedenia potrubia.

Účelom osových vedení je vedenie potrubia v osovom smere a udržanie osi potrubia v priamke tak, aby kompenzátor nebol priečne namáhaný.

Osové vedenia potrubia musia byť navrhnuté na zaťaženie vo zvislom i vodorovnom smere. Zaťaženie je výsledkom výpočtu zohľadňujúceho tiažový účinok potrubia, vplyv trecích síl a vplyv nestacionárnych stavov, ktoré nastávajú pri počiatočnom prehriatí alebo chladnutí potrubia (hlavne veľkých priemerov).

Pri výpočtoch sa predpokladá, že osové vedenie musí vydržať priečne zaťaženie vo výške 15 % celkovej osovej sily.

Musí byť navrhnuté tak, aby zabránilo vybočeniu potrubia v dôsledku priečnej pružnosti kompenzátora a zaťaženia od vnútorného pretlaku.

Ak osové vedenie bezprostredne susedí s kompenzátorom, je vhodné použiť axiálne vedenie, ktoré obopína trúbku po celom obvode.

Rovinné podpery potrubia možno používať v kombinácii s osovými vedeniami pokiaľ neovplyvnia správnú funkciu kompenzátora alebo pevnosť potrubia.

**Nielen návrhu pevných bodov, ale i ostatným prvkom potrubného uloženia je potrebné venovať veľkú pozornosť, pretože sú najčastejšou príčinou porúch kompenzátorov a havárií potrubia s osovými kompenzátormi.**

Pre základný návrh potrubného uloženia s osovým kompenzátorom je možné použiť túto zjednodušujúcu metodiku:

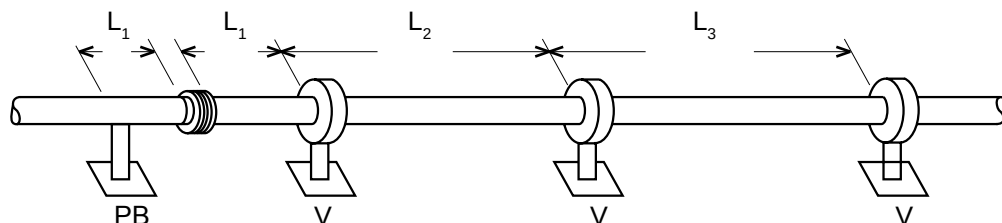
$L_1$  min  $4 \times DN$ ;  $2 \times DN + \frac{w}{2}$  (menšia z oboch hodnôt)

$L_2$   $14 \times DN$

$L_3$  podľa návrhu projektanta

#### Použité označenia:

w dilatácia potrubia  
DN svetlosť potrubia





# ZÁKLADNÉ TECHNICKÉ ÚDAJE AXIÁLNYCH KOMPENZÁTOROV

## **MWA - MFA**

DATA SHEETS FOR  
**A X I A L**  
EXPANSION JOINTS



PN 1

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Axiálny pohyb<br>Axial movement | Axiálna tuhosť<br>Spring rate | Efektívny prierez<br>Effective area | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight |
|---------------------------------------|---------------------------------------|---------------------------------|-------------------------------|-------------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|
| DN                                    | DN                                    | ± mm                            | N/mm                          | cm <sup>2</sup>                     | mm                               | kg                                | mm                               | kg                                |
| mm                                    | inch                                  |                                 |                               |                                     |                                  |                                   |                                  |                                   |
| 25                                    | 1"                                    | 6,0                             | 32,0                          | 11                                  | 150                              | 0,3                               | 90                               | 1,9                               |
| 25                                    | 1"                                    | 12,5                            | 18,0                          | 11                                  | 200                              | 0,4                               | 120                              | 1,9                               |
| 25                                    | 1"                                    | 25,0                            | 9,0                           | 11                                  | 320                              | 0,6                               | 210                              | 2,0                               |
| 25                                    | 1"                                    | 37,5                            | 6,0                           | 11                                  | 460                              | 0,8                               | 300                              | 2,2                               |
| 32                                    | 1 ¼"                                  | 6,0                             | 31,0                          | 17                                  | 150                              | 0,4                               | 90                               | 2,9                               |
| 32                                    | 1 ¼"                                  | 12,5                            | 15,0                          | 17                                  | 210                              | 0,6                               | 130                              | 3,0                               |
| 32                                    | 1 ¼"                                  | 25,0                            | 8,0                           | 17                                  | 340                              | 1,0                               | 220                              | 3,0                               |
| 32                                    | 1 ¼"                                  | 37,5                            | 5,0                           | 17                                  | 460                              | 1,2                               | 310                              | 3,0                               |
| 40                                    | 1 ½"                                  | 6,0                             | 34,0                          | 22                                  | 200                              | 0,8                               | 90                               | 3,0                               |
| 40                                    | 1 ½"                                  | 12,5                            | 19,0                          | 22                                  | 220                              | 0,8                               | 130                              | 3,0                               |
| 40                                    | 1 ½"                                  | 25,0                            | 10,0                          | 22                                  | 340                              | 1,1                               | 220                              | 4,0                               |
| 40                                    | 1 ½"                                  | 37,5                            | 6,0                           | 22                                  | 460                              | 1,5                               | 310                              | 4,0                               |
| 50                                    | 2"                                    | 6,0                             | 76,0                          | 36                                  | 220                              | 1,2                               | 90                               | 4,0                               |
| 50                                    | 2"                                    | 12,5                            | 38,0                          | 36                                  | 250                              | 1,2                               | 130                              | 4,0                               |
| 50                                    | 2"                                    | 25,0                            | 19,0                          | 36                                  | 370                              | 1,7                               | 220                              | 4,0                               |
| 50                                    | 2"                                    | 37,5                            | 13,0                          | 36                                  | 480                              | 2,2                               | 320                              | 5,0                               |
| 65                                    | 2 ½"                                  | 6,0                             | 51,0                          | 53                                  | 230                              | 1,8                               | 90                               | 5,0                               |
| 65                                    | 2 ½"                                  | 12,5                            | 31,0                          | 53                                  | 260                              | 1,9                               | 130                              | 5,0                               |
| 65                                    | 2 ½"                                  | 25,0                            | 15,0                          | 53                                  | 370                              | 2,5                               | 210                              | 5,0                               |
| 65                                    | 2 ½"                                  | 37,5                            | 10,0                          | 53                                  | 480                              | 3,0                               | 300                              | 6,0                               |
| 80                                    | 3"                                    | 6,0                             | 49,0                          | 76                                  | 240                              | 2,4                               | 100                              | 7,0                               |
| 80                                    | 3"                                    | 12,5                            | 29,0                          | 76                                  | 280                              | 2,7                               | 140                              | 8,0                               |
| 80                                    | 3"                                    | 25,0                            | 15,0                          | 76                                  | 370                              | 3,0                               | 230                              | 8,0                               |
| 80                                    | 3"                                    | 37,5                            | 10,0                          | 76                                  | 500                              | 4,0                               | 330                              | 9,0                               |
| 100                                   | 4"                                    | 12,5                            | 104,0                         | 122                                 | 250                              | 3,0                               | 130                              | 9,0                               |
| 100                                   | 4"                                    | 25,0                            | 56,0                          | 122                                 | 350                              | 4,0                               | 200                              | 9,0                               |
| 100                                   | 4"                                    | 37,5                            | 38,0                          | 122                                 | 440                              | 5,0                               | 270                              | 10,0                              |
| 100                                   | 4"                                    | 50,0                            | 32,0                          | 122                                 | 510                              | 6,0                               | 320                              | 10,0                              |
| 125                                   | 5"                                    | 12,5                            | 126,0                         | 180                                 | 250                              | 4,0                               | 130                              | 11,0                              |
| 125                                   | 5"                                    | 25,0                            | 68,0                          | 180                                 | 350                              | 6,0                               | 210                              | 12,0                              |
| 125                                   | 5"                                    | 37,5                            | 46,0                          | 180                                 | 440                              | 7,0                               | 280                              | 13,0                              |
| 125                                   | 5"                                    | 50,0                            | 38,0                          | 180                                 | 530                              | 8,0                               | 330                              | 13,0                              |
| 150                                   | 6"                                    | 12,5                            | 191,0                         | 256                                 | 260                              | 6,0                               | 140                              | 13,0                              |
| 150                                   | 6"                                    | 25,0                            | 103,0                         | 256                                 | 360                              | 7,0                               | 220                              | 14,0                              |
| 150                                   | 6"                                    | 37,5                            | 70,0                          | 256                                 | 460                              | 9,0                               | 300                              | 15,0                              |
| 150                                   | 6"                                    | 50,0                            | 58,0                          | 256                                 | 550                              | 10,0                              | 350                              | 16,0                              |
| 200                                   | 8"                                    | 12,5                            | 144,0                         | 432                                 | 270                              | 8,0                               | 150                              | 19,0                              |
| 200                                   | 8"                                    | 25,0                            | 91,0                          | 432                                 | 360                              | 10,0                              | 210                              | 20,0                              |
| 200                                   | 8"                                    | 37,5                            | 67,0                          | 432                                 | 430                              | 11,0                              | 260                              | 21,0                              |
| 200                                   | 8"                                    | 50,0                            | 53,0                          | 432                                 | 540                              | 14,0                              | 320                              | 22,0                              |
| 200                                   | 8"                                    | 62,5                            | 44,0                          | 432                                 | 650                              | 17,0                              | 380                              | 23,0                              |
| 250                                   | 10"                                   | 12,5                            | 211,0                         | 658                                 | 250                              | 9,0                               | 130                              | 24,0                              |
| 250                                   | 10"                                   | 25,0                            | 96,0                          | 658                                 | 380                              | 13,0                              | 220                              | 26,0                              |
| 250                                   | 10"                                   | 37,5                            | 70,0                          | 658                                 | 450                              | 14,0                              | 280                              | 28,0                              |
| 250                                   | 10"                                   | 50,0                            | 56,0                          | 658                                 | 560                              | 18,0                              | 340                              | 29,0                              |
| 250                                   | 10"                                   | 62,5                            | 50,0                          | 658                                 | 650                              | 21,0                              | 370                              | 30,0                              |
| 300                                   | 12"                                   | 12,5                            | 213,0                         | 915                                 | 250                              | 11,0                              | 140                              | 32,0                              |
| 300                                   | 12"                                   | 25,0                            | 97,0                          | 915                                 | 390                              | 15,0                              | 230                              | 35,0                              |
| 300                                   | 12"                                   | 37,5                            | 71,0                          | 915                                 | 460                              | 18,0                              | 300                              | 36,0                              |
| 300                                   | 12"                                   | 50,0                            | 56,0                          | 915                                 | 570                              | 22,0                              | 360                              | 38,0                              |
| 300                                   | 12"                                   | 62,5                            | 51,0                          | 915                                 | 670                              | 26,0                              | 390                              | 39,0                              |



MWA



MFA

## PN 1

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Axiálny pohyb<br>Axial movement | Axiálna tuhosť<br>Spring rate | Efektívny prierez<br>Effective area | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight |
|---------------------------------------|---------------------------------------|---------------------------------|-------------------------------|-------------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|
| DN                                    | DN                                    | ± mm                            | N/mm                          | cm <sup>2</sup>                     | mm                               | kg                                | mm                               | kg                                |
| 350                                   | 14"                                   | 12,5                            | 176,0                         | 1 104                               | 260                              | 12,0                              | 150                              | 44,0                              |
| 350                                   | 14"                                   | 25,0                            | 80,0                          | 1 104                               | 400                              | 17,0                              | 250                              | 47,0                              |
| 350                                   | 14"                                   | 37,5                            | 59,0                          | 1 104                               | 480                              | 20,0                              | 320                              | 49,0                              |
| 350                                   | 14"                                   | 50,0                            | 46,0                          | 1 104                               | 590                              | 25,0                              | 390                              | 51,0                              |
| 350                                   | 14"                                   | 62,5                            | 42,0                          | 1 104                               | 690                              | 29,0                              | 420                              | 52,0                              |
| 400                                   | 16"                                   | 12,5                            | 377,0                         | 1 445                               | 290                              | 15,0                              | 180                              | 54,0                              |
| 400                                   | 16"                                   | 25,0                            | 269,0                         | 1 445                               | 370                              | 20,0                              | 230                              | 56,0                              |
| 400                                   | 16"                                   | 37,5                            | 209,0                         | 1 445                               | 430                              | 22,0                              | 270                              | 58,0                              |
| 400                                   | 16"                                   | 50,0                            | 145,0                         | 1 445                               | 570                              | 29,0                              | 370                              | 60,0                              |
| 400                                   | 16"                                   | 62,5                            | 126,0                         | 1 445                               | 680                              | 34,0                              | 410                              | 65,0                              |
| 500                                   | 20"                                   | 12,5                            | 415,0                         | 2 219                               | 290                              | 19,0                              | 190                              | 70,0                              |
| 500                                   | 20"                                   | 25,0                            | 296,0                         | 2 219                               | 370                              | 25,0                              | 230                              | 75,0                              |
| 500                                   | 20"                                   | 37,5                            | 231,0                         | 2 219                               | 430                              | 28,0                              | 280                              | 75,0                              |
| 500                                   | 20"                                   | 50,0                            | 160,0                         | 2 219                               | 570                              | 36,0                              | 370                              | 80,0                              |
| 500                                   | 20"                                   | 62,5                            | 138,0                         | 2 219                               | 680                              | 43,0                              | 420                              | 85,0                              |
| 600                                   | 24"                                   | 12,5                            | 442,0                         | 3 158                               | 290                              | 23,0                              | 190                              | 90,0                              |
| 600                                   | 24"                                   | 25,0                            | 316,0                         | 3 158                               | 370                              | 30,0                              | 230                              | 95,0                              |
| 600                                   | 24"                                   | 37,5                            | 246,0                         | 3 158                               | 430                              | 34,0                              | 280                              | 95,0                              |
| 600                                   | 24"                                   | 50,0                            | 170,0                         | 3 158                               | 570                              | 44,0                              | 370                              | 100,0                             |
| 600                                   | 24"                                   | 62,5                            | 147,0                         | 3 158                               | 680                              | 53,0                              | 420                              | 105,0                             |
| 700                                   | 28"                                   | 12,5                            | 461,0                         | 4 265                               | 290                              | 27,0                              | 190                              | 105,0                             |
| 700                                   | 28"                                   | 25,0                            | 329,0                         | 4 265                               | 370                              | 34,0                              | 230                              | 110,0                             |
| 700                                   | 28"                                   | 37,5                            | 256,0                         | 4 265                               | 430                              | 38,0                              | 280                              | 115,0                             |
| 700                                   | 28"                                   | 50,0                            | 177,0                         | 4 265                               | 570                              | 50,0                              | 370                              | 120,0                             |
| 700                                   | 28"                                   | 62,5                            | 154,0                         | 4 265                               | 680                              | 60,0                              | 420                              | 125,0                             |
| 800                                   | 32"                                   | 12,5                            | 472,0                         | 5 535                               | 290                              | 31,0                              | 190                              | 130,0                             |
| 800                                   | 32"                                   | 25,0                            | 337,0                         | 5 535                               | 370                              | 39,0                              | 230                              | 135,0                             |
| 800                                   | 32"                                   | 37,5                            | 262,0                         | 5 535                               | 430                              | 44,0                              | 280                              | 140,0                             |
| 800                                   | 32"                                   | 50,0                            | 182,0                         | 5 535                               | 570                              | 58,0                              | 370                              | 145,0                             |
| 800                                   | 32"                                   | 62,5                            | 157,0                         | 5 535                               | 680                              | 70,0                              | 420                              | 150,0                             |
| 900                                   | 36"                                   | 12,5                            | 479,0                         | 6 971                               | 290                              | 35,0                              | 190                              | 145,0                             |
| 900                                   | 36"                                   | 25,0                            | 342,0                         | 6 971                               | 370                              | 45,0                              | 230                              | 150,0                             |
| 900                                   | 36"                                   | 37,5                            | 266,0                         | 6 971                               | 430                              | 50,0                              | 280                              | 155,0                             |
| 900                                   | 36"                                   | 50,0                            | 184,0                         | 6 971                               | 570                              | 65,0                              | 370                              | 165,0                             |
| 900                                   | 36"                                   | 62,5                            | 160,0                         | 6 971                               | 680                              | 80,0                              | 420                              | 165,0                             |
| 1000                                  | 40"                                   | 12,5                            | 438,0                         | 8 588                               | 290                              | 39,0                              | 190                              | 160,0                             |
| 1000                                  | 40"                                   | 25,0                            | 313,0                         | 8 588                               | 370                              | 50,0                              | 230                              | 165,0                             |
| 1000                                  | 40"                                   | 37,5                            | 243,0                         | 8 588                               | 430                              | 56,0                              | 280                              | 170,0                             |
| 1000                                  | 40"                                   | 50,0                            | 168,0                         | 8 588                               | 570                              | 75,0                              | 370                              | 180,0                             |
| 1000                                  | 40"                                   | 62,5                            | 146,0                         | 8 588                               | 680                              | 90,0                              | 420                              | 185,0                             |
| 1100                                  | 44"                                   | 12,5                            | 439,0                         | 10 381                              | 290                              | 52,0                              | 190                              | 170,0                             |
| 1100                                  | 44"                                   | 25,0                            | 314,0                         | 10 381                              | 370                              | 65,0                              | 230                              | 175,0                             |
| 1100                                  | 44"                                   | 37,5                            | 244,0                         | 10 381                              | 430                              | 75,0                              | 280                              | 180,0                             |
| 1100                                  | 44"                                   | 50,0                            | 169,0                         | 10 381                              | 570                              | 95,0                              | 370                              | 195,0                             |
| 1100                                  | 44"                                   | 62,5                            | 146,0                         | 10 381                              | 680                              | 115,0                             | 420                              | 200,0                             |
| 1200                                  | 48"                                   | 12,5                            | 598,0                         | 12 307                              | 290                              | 59,0                              | 190                              | 185,0                             |
| 1200                                  | 48"                                   | 25,0                            | 427,0                         | 12 307                              | 370                              | 75,0                              | 230                              | 195,0                             |
| 1200                                  | 48"                                   | 37,5                            | 332,0                         | 12 307                              | 430                              | 85,0                              | 280                              | 200,0                             |
| 1200                                  | 48"                                   | 50,0                            | 230,0                         | 12 307                              | 570                              | 110,0                             | 370                              | 215,0                             |
| 1200                                  | 48"                                   | 62,5                            | 199,0                         | 12 307                              | 680                              | 130,0                             | 420                              | 220,0                             |



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## PN 1

| Menovitá svetlost'<br>Nominal diametr | Menovitá svetlost'<br>Nominal diametr | Axiálny pohyb<br>Axial movement | Axiálna tuhosť<br>Spring rate | Efektívny prierez<br>Effective area | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight |
|---------------------------------------|---------------------------------------|---------------------------------|-------------------------------|-------------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|
| DN                                    | DN                                    | ± mm                            | N/mm                          | cm <sup>2</sup>                     | mm                               | kg                                | mm                               | kg                                |
| mm                                    | inch                                  |                                 |                               |                                     |                                  |                                   |                                  |                                   |
| 1300                                  | 52"                                   | 25,0                            | 510,0                         | 14 565                              | 280                              | 65,0                              | 180                              | 200,0                             |
| 1300                                  | 52"                                   | 37,5                            | 306,0                         | 14 565                              | 400                              | 85,0                              | 260                              | 215,0                             |
| 1300                                  | 52"                                   | 50,0                            | 219,0                         | 14 565                              | 580                              | 125,0                             | 340                              | 225,0                             |
| 1300                                  | 52"                                   | 62,5                            | 170,0                         | 14 565                              | 700                              | 150,0                             | 410                              | 240,0                             |
| 1300                                  | 52"                                   | 75,0                            | 139,0                         | 14 565                              | 830                              | 175,0                             | 490                              | 250,0                             |
| 1400                                  | 56"                                   | 25,0                            | 548,0                         | 16 783                              | 280                              | 70,0                              | 180                              | 215,0                             |
| 1400                                  | 56"                                   | 37,5                            | 329,0                         | 16 783                              | 400                              | 95,0                              | 260                              | 230,0                             |
| 1400                                  | 56"                                   | 50,0                            | 235,0                         | 16 783                              | 580                              | 135,0                             | 340                              | 245,0                             |
| 1400                                  | 56"                                   | 62,5                            | 183,0                         | 16 783                              | 700                              | 165,0                             | 410                              | 255,0                             |
| 1400                                  | 56"                                   | 75,0                            | 149,0                         | 16 783                              | 830                              | 190,0                             | 490                              | 270,0                             |
| 1500                                  | 60"                                   | 25,0                            | 585,0                         | 19 158                              | 280                              | 75,0                              | 190                              | 265,0                             |
| 1500                                  | 60"                                   | 37,5                            | 351,0                         | 19 158                              | 400                              | 100,0                             | 260                              | 280,0                             |
| 1500                                  | 60"                                   | 50,0                            | 251,0                         | 19 158                              | 580                              | 145,0                             | 340                              | 295,0                             |
| 1500                                  | 60"                                   | 62,5                            | 195,0                         | 19 158                              | 700                              | 175,0                             | 420                              | 310,0                             |
| 1500                                  | 60"                                   | 75,0                            | 160,0                         | 19 158                              | 830                              | 205,0                             | 490                              | 325,0                             |
| 1600                                  | 64"                                   | 25,0                            | 622,0                         | 21 689                              | 280                              | 80,0                              | 190                              | 285,0                             |
| 1600                                  | 64"                                   | 37,5                            | 373,0                         | 21 689                              | 400                              | 105,0                             | 260                              | 300,0                             |
| 1600                                  | 64"                                   | 50,0                            | 267,0                         | 21 689                              | 580                              | 155,0                             | 340                              | 315,0                             |
| 1600                                  | 64"                                   | 62,5                            | 207,0                         | 21 689                              | 700                              | 185,0                             | 420                              | 330,0                             |
| 1600                                  | 64"                                   | 75,0                            | 170,0                         | 21 689                              | 830                              | 220,0                             | 490                              | 345,0                             |
| 1800                                  | 72"                                   | 25,0                            | 697,0                         | 27 224                              | 280                              | 90,0                              | 190                              | 335,0                             |
| 1800                                  | 72"                                   | 37,5                            | 418,0                         | 27 224                              | 400                              | 120,0                             | 270                              | 350,0                             |
| 1800                                  | 72"                                   | 50,0                            | 299,0                         | 27 224                              | 580                              | 175,0                             | 340                              | 370,0                             |
| 1800                                  | 72"                                   | 62,5                            | 232,0                         | 27 224                              | 700                              | 210,0                             | 420                              | 385,0                             |
| 1800                                  | 72"                                   | 75,0                            | 190,0                         | 27 224                              | 830                              | 245,0                             | 500                              | 405,0                             |
| 2000                                  | 80"                                   | 25,0                            | 772,0                         | 33 387                              | 280                              | 100,0                             | 190                              | 370,0                             |
| 2000                                  | 80"                                   | 37,5                            | 463,0                         | 33 387                              | 400                              | 135,0                             | 270                              | 390,0                             |
| 2000                                  | 80"                                   | 50,0                            | 331,0                         | 33 387                              | 580                              | 195,0                             | 340                              | 410,0                             |
| 2000                                  | 80"                                   | 62,5                            | 257,0                         | 33 387                              | 700                              | 235,0                             | 420                              | 425,0                             |
| 2000                                  | 80"                                   | 75,0                            | 211,0                         | 33 387                              | 830                              | 270,0                             | 500                              | 445,0                             |
| 2200                                  | 88"                                   | 25,0                            | 847,0                         | 40 179                              | 280                              | 105,0                             | 200                              | 460,0                             |
| 2200                                  | 88"                                   | 37,5                            | 508,0                         | 40 179                              | 400                              | 145,0                             | 270                              | 485,0                             |
| 2200                                  | 88"                                   | 50,0                            | 363,0                         | 40 179                              | 580                              | 215,0                             | 350                              | 505,0                             |
| 2200                                  | 88"                                   | 62,5                            | 282,0                         | 40 179                              | 700                              | 255,0                             | 420                              | 525,0                             |
| 2200                                  | 88"                                   | 75,0                            | 231,0                         | 40 179                              | 830                              | 300,0                             | 500                              | 545,0                             |
| 2400                                  | 96"                                   | 25,0                            | 922,0                         | 47 599                              | 280                              | 115,0                             | 200                              | 530,0                             |
| 2400                                  | 96"                                   | 37,5                            | 553,0                         | 47 599                              | 400                              | 160,0                             | 280                              | 550,0                             |
| 2400                                  | 96"                                   | 50,0                            | 395,0                         | 47 599                              | 580                              | 230,0                             | 350                              | 575,0                             |
| 2400                                  | 96"                                   | 62,5                            | 307,0                         | 47 599                              | 700                              | 280,0                             | 430                              | 600,0                             |
| 2400                                  | 96"                                   | 75,0                            | 251,0                         | 47 599                              | 830                              | 325,0                             | 500                              | 620,0                             |
| 2600                                  | 104"                                  | 25,0                            | 997,0                         | 55 647                              | 280                              | 125,0                             | 200                              | 600,0                             |
| 2600                                  | 104"                                  | 37,5                            | 598,0                         | 55 647                              | 400                              | 170,0                             | 280                              | 620,0                             |
| 2600                                  | 104"                                  | 50,0                            | 427,0                         | 55 647                              | 580                              | 250,0                             | 360                              | 650,0                             |
| 2600                                  | 104"                                  | 62,5                            | 332,0                         | 55 647                              | 700                              | 300,0                             | 430                              | 675,0                             |
| 2600                                  | 104"                                  | 75,0                            | 272,0                         | 55 647                              | 830                              | 355,0                             | 510                              | 700,0                             |
| 2800                                  | 112"                                  | 25,0                            | 1 072,0                       | 64 323                              | 280                              | 150,0                             | 210                              | 770,0                             |
| 2800                                  | 112"                                  | 37,5                            | 643,0                         | 64 323                              | 400                              | 205,0                             | 280                              | 805,0                             |
| 2800                                  | 112"                                  | 50,0                            | 459,0                         | 64 323                              | 580                              | 295,0                             | 360                              | 840,0                             |
| 2800                                  | 112"                                  | 62,5                            | 357,0                         | 64 323                              | 700                              | 355,0                             | 440                              | 870,0                             |
| 2800                                  | 112"                                  | 75,0                            | 292,0                         | 64 323                              | 830                              | 415,0                             | 510                              | 905,0                             |
| 3000                                  | 120"                                  | 25,0                            | 1 147,0                       | 73 628                              | 280                              | 160,0                             | 210                              | 825,0                             |
| 3000                                  | 120"                                  | 37,5                            | 688,0                         | 73 628                              | 400                              | 220,0                             | 280                              | 860,0                             |
| 3000                                  | 120"                                  | 50,0                            | 492,0                         | 73 628                              | 580                              | 315,0                             | 360                              | 895,0                             |
| 3000                                  | 120"                                  | 62,5                            | 382,0                         | 73 628                              | 700                              | 380,0                             | 440                              | 930,0                             |
| 3000                                  | 120"                                  | 75,0                            | 313,0                         | 73 628                              | 830                              | 445,0                             | 510                              | 965,0                             |



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# PN 1

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Axiálny pohyb<br>Axial movement | Axiálna tuhosť<br>Spring rate | Efektívny prierez<br>Effective area | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight |
|---------------------------------------|---------------------------------------|---------------------------------|-------------------------------|-------------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|
| DN                                    | DN                                    | ± mm                            | N/mm                          | cm <sup>2</sup>                     | mm                               | kg                                | mm                               | kg                                |
| 3200                                  | 128"                                  | 25,0                            | 1 222,0                       | 83 561                              | 280                              | 170,0                             | 210                              | 915,0                             |
| 3200                                  | 128"                                  | 37,5                            | 733,0                         | 83 561                              | 400                              | 230,0                             | 290                              | 950,0                             |
| 3200                                  | 128"                                  | 50,0                            | 524,0                         | 83 561                              | 580                              | 335,0                             | 360                              | 990,0                             |
| 3200                                  | 128"                                  | 62,5                            | 407,0                         | 83 561                              | 700                              | 405,0                             | 440                              | 1 030,0                           |
| 3200                                  | 128"                                  | 75,0                            | 333,0                         | 83 561                              | 830                              | 475,0                             | 520                              | 1 070,0                           |
| 3400                                  | 136"                                  | 25,0                            | 1 581,0                       | 94 433                              | 280                              | 210,0                             | 220                              | 1 040,0                           |
| 3400                                  | 136"                                  | 37,5                            | 949,0                         | 94 433                              | 400                              | 295,0                             | 290                              | 1 100,0                           |
| 3400                                  | 136"                                  | 50,0                            | 678,0                         | 94 433                              | 580                              | 420,0                             | 370                              | 1 160,0                           |
| 3400                                  | 136"                                  | 62,5                            | 527,0                         | 94 433                              | 700                              | 515,0                             | 440                              | 1 215,0                           |
| 3400                                  | 136"                                  | 75,0                            | 431,0                         | 94 433                              | 830                              | 605,0                             | 520                              | 1 275,0                           |
| 3600                                  | 144"                                  | 25,0                            | 1 672,0                       | 105 640                             | 280                              | 220,0                             | 220                              | 1 195,0                           |
| 3600                                  | 144"                                  | 37,5                            | 1 003,0                       | 105 640                             | 400                              | 310,0                             | 300                              | 1 255,0                           |
| 3600                                  | 144"                                  | 50,0                            | 717,0                         | 105 640                             | 580                              | 445,0                             | 370                              | 1 320,0                           |
| 3600                                  | 144"                                  | 62,5                            | 557,0                         | 105 640                             | 700                              | 545,0                             | 450                              | 1 380,0                           |
| 3600                                  | 144"                                  | 75,0                            | 456,0                         | 105 640                             | 830                              | 640,0                             | 520                              | 1 440,0                           |
| 3800                                  | 152"                                  | 25,0                            | 1 764,0                       | 117 476                             | 280                              | 235,0                             | 220                              | 1 285,0                           |
| 3800                                  | 152"                                  | 37,5                            | 1 058,0                       | 117 476                             | 400                              | 330,0                             | 300                              | 1 350,0                           |
| 3800                                  | 152"                                  | 50,0                            | 756,0                         | 117 476                             | 580                              | 470,0                             | 370                              | 1 415,0                           |
| 3800                                  | 152"                                  | 62,5                            | 588,0                         | 117 476                             | 700                              | 575,0                             | 450                              | 1 480,0                           |
| 3800                                  | 152"                                  | 75,0                            | 481,0                         | 117 476                             | 830                              | 675,0                             | 520                              | 1 545,0                           |
| 4000                                  | 160"                                  | 25,0                            | 1 855,0                       | 129 941                             | 280                              | 245,0                             | 220                              | 1 400,0                           |
| 4000                                  | 160"                                  | 37,5                            | 1 113,0                       | 129 941                             | 400                              | 345,0                             | 300                              | 1 470,0                           |
| 4000                                  | 160"                                  | 50,0                            | 795,0                         | 129 941                             | 580                              | 495,0                             | 380                              | 1 540,0                           |
| 4000                                  | 160"                                  | 62,5                            | 618,0                         | 129 941                             | 700                              | 605,0                             | 450                              | 1 605,0                           |
| 4000                                  | 160"                                  | 75,0                            | 506,0                         | 129 941                             | 830                              | 715,0                             | 530                              | 1 675,0                           |
| 4200                                  | 168"                                  | 25,0                            | 1 946,0                       | 143 033                             | 280                              | 255,0                             |                                  |                                   |
| 4200                                  | 168"                                  | 37,5                            | 1 168,0                       | 143 033                             | 400                              | 360,0                             |                                  |                                   |
| 4200                                  | 168"                                  | 50,0                            | 834,0                         | 143 033                             | 580                              | 520,0                             |                                  |                                   |
| 4200                                  | 168"                                  | 62,5                            | 649,0                         | 143 033                             | 700                              | 635,0                             |                                  |                                   |
| 4200                                  | 168"                                  | 75,0                            | 531,0                         | 143 033                             | 830                              | 750,0                             |                                  |                                   |
| 4500                                  | 180"                                  | 25,0                            | 2 495,0                       | 163 857                             | 280                              | 280,0                             |                                  |                                   |
| 4500                                  | 180"                                  | 37,5                            | 1 497,0                       | 163 857                             | 400                              | 390,0                             |                                  |                                   |
| 4500                                  | 180"                                  | 50,0                            | 1 069,0                       | 163 857                             | 580                              | 570,0                             |                                  |                                   |
| 4500                                  | 180"                                  | 62,5                            | 832,0                         | 163 857                             | 700                              | 695,0                             |                                  |                                   |
| 4500                                  | 180"                                  | 75,0                            | 680,0                         | 163 857                             | 830                              | 815,0                             |                                  |                                   |
| 5000                                  | 200"                                  | 25,0                            | 2 768,0                       | 201 695                             | 280                              | 310,0                             |                                  |                                   |
| 5000                                  | 200"                                  | 37,5                            | 1 661,0                       | 201 695                             | 400                              | 435,0                             |                                  |                                   |
| 5000                                  | 200"                                  | 50,0                            | 1 186,0                       | 201 695                             | 580                              | 630,0                             |                                  |                                   |
| 5000                                  | 200"                                  | 62,5                            | 923,0                         | 201 695                             | 700                              | 770,0                             |                                  |                                   |
| 5000                                  | 200"                                  | 75,0                            | 755,0                         | 201 695                             | 830                              | 910,0                             |                                  |                                   |
| 5500                                  | 220"                                  | 25,0                            | 3 041,0                       | 243 459                             | 280                              | 340,0                             |                                  |                                   |
| 5500                                  | 220"                                  | 37,5                            | 1 824,0                       | 243 459                             | 400                              | 480,0                             |                                  |                                   |
| 5500                                  | 220"                                  | 50,0                            | 1 303,0                       | 243 459                             | 580                              | 695,0                             |                                  |                                   |
| 5500                                  | 220"                                  | 62,5                            | 1 014,0                       | 243 459                             | 700                              | 845,0                             |                                  |                                   |
| 5500                                  | 220"                                  | 75,0                            | 829,0                         | 243 459                             | 830                              | 1 000,0                           |                                  |                                   |
| 6000                                  | 240"                                  | 25,0                            | 3 314,0                       | 289 150                             | 280                              | 375,0                             |                                  |                                   |
| 6000                                  | 240"                                  | 37,5                            | 1 988,0                       | 289 150                             | 400                              | 520,0                             |                                  |                                   |
| 6000                                  | 240"                                  | 50,0                            | 1 420,0                       | 289 150                             | 580                              | 760,0                             |                                  |                                   |
| 6000                                  | 240"                                  | 62,5                            | 1 105,0                       | 289 150                             | 700                              | 925,0                             |                                  |                                   |
| 6000                                  | 240"                                  | 75,0                            | 904,0                         | 289 150                             | 830                              | 1 090,0                           |                                  |                                   |



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**PN 2,5**

| Menovitá svetlost'<br>Nominal diameter | Menovitá svetlost'<br>Nominal diameter | Axiálny pohyb<br>Axial movement | Axiálna tuhosť<br>Spring rate | Efektívny prierez<br>Effective area | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight |
|----------------------------------------|----------------------------------------|---------------------------------|-------------------------------|-------------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|
| DN<br>mm                               | DN<br>inch                             | ± mm                            | N/mm                          | cm <sup>2</sup>                     | mm                               | kg                                | mm                               | kg                                |
| 25                                     | 1"                                     | 6,0                             | 32,0                          | 11                                  | 150                              | 0,3                               | 90                               | 1,9                               |
| 25                                     | 1"                                     | 12,5                            | 18,0                          | 11                                  | 200                              | 0,4                               | 120                              | 1,9                               |
| 25                                     | 1"                                     | 25,0                            | 9,0                           | 11                                  | 320                              | 0,6                               | 210                              | 2,0                               |
| 25                                     | 1"                                     | 37,5                            | 6,0                           | 11                                  | 460                              | 0,8                               | 300                              | 2,2                               |
| 32                                     | 1 1/4"                                 | 6,0                             | 31,0                          | 17                                  | 150                              | 0,4                               | 90                               | 2,9                               |
| 32                                     | 1 1/4"                                 | 12,5                            | 15,0                          | 17                                  | 210                              | 0,6                               | 130                              | 3,0                               |
| 32                                     | 1 1/4"                                 | 25,0                            | 8,0                           | 17                                  | 340                              | 1,0                               | 220                              | 3,0                               |
| 32                                     | 1 1/4"                                 | 37,5                            | 5,0                           | 17                                  | 460                              | 1,2                               | 310                              | 3,0                               |
| 40                                     | 1 1/2"                                 | 6,0                             | 34,0                          | 22                                  | 200                              | 0,8                               | 90                               | 3,0                               |
| 40                                     | 1 1/2"                                 | 12,5                            | 19,0                          | 22                                  | 220                              | 0,8                               | 130                              | 3,0                               |
| 40                                     | 1 1/2"                                 | 25,0                            | 10,0                          | 22                                  | 340                              | 1,1                               | 220                              | 4,0                               |
| 40                                     | 1 1/2"                                 | 37,5                            | 6,0                           | 22                                  | 460                              | 1,5                               | 310                              | 4,0                               |
| 50                                     | 2"                                     | 6,0                             | 76,0                          | 36                                  | 220                              | 1,2                               | 90                               | 4,0                               |
| 50                                     | 2"                                     | 12,5                            | 38,0                          | 36                                  | 250                              | 1,2                               | 130                              | 4,0                               |
| 50                                     | 2"                                     | 25,0                            | 19,0                          | 36                                  | 370                              | 1,7                               | 220                              | 4,0                               |
| 50                                     | 2"                                     | 37,5                            | 13,0                          | 36                                  | 480                              | 2,2                               | 320                              | 5,0                               |
| 65                                     | 2 1/2"                                 | 6,0                             | 51,0                          | 53                                  | 230                              | 1,8                               | 90                               | 5,0                               |
| 65                                     | 2 1/2"                                 | 12,5                            | 31,0                          | 53                                  | 260                              | 1,9                               | 130                              | 5,0                               |
| 65                                     | 2 1/2"                                 | 25,0                            | 15,0                          | 53                                  | 370                              | 2,5                               | 210                              | 5,0                               |
| 65                                     | 2 1/2"                                 | 37,5                            | 10,0                          | 53                                  | 480                              | 3,0                               | 300                              | 6,0                               |
| 80                                     | 3"                                     | 6,0                             | 49,0                          | 76                                  | 240                              | 2,4                               | 100                              | 7,0                               |
| 80                                     | 3"                                     | 12,5                            | 29,0                          | 76                                  | 280                              | 2,7                               | 140                              | 8,0                               |
| 80                                     | 3"                                     | 25,0                            | 15,0                          | 76                                  | 370                              | 3,0                               | 230                              | 8,0                               |
| 80                                     | 3"                                     | 37,5                            | 10,0                          | 76                                  | 500                              | 4,0                               | 330                              | 9,0                               |
| 100                                    | 4"                                     | 12,5                            | 104,0                         | 122                                 | 250                              | 3,0                               | 130                              | 9,0                               |
| 100                                    | 4"                                     | 25,0                            | 56,0                          | 122                                 | 350                              | 4,0                               | 200                              | 9,0                               |
| 100                                    | 4"                                     | 37,5                            | 38,0                          | 122                                 | 440                              | 5,0                               | 270                              | 10,0                              |
| 100                                    | 4"                                     | 50,0                            | 32,0                          | 122                                 | 510                              | 6,0                               | 320                              | 10,0                              |
| 125                                    | 5"                                     | 12,5                            | 126,0                         | 180                                 | 250                              | 4,0                               | 130                              | 11,0                              |
| 125                                    | 5"                                     | 25,0                            | 68,0                          | 180                                 | 350                              | 6,0                               | 210                              | 12,0                              |
| 125                                    | 5"                                     | 37,5                            | 46,0                          | 180                                 | 440                              | 7,0                               | 280                              | 13,0                              |
| 125                                    | 5"                                     | 50,0                            | 38,0                          | 180                                 | 530                              | 8,0                               | 330                              | 13,0                              |
| 150                                    | 6"                                     | 12,5                            | 191,0                         | 256                                 | 260                              | 6,0                               | 140                              | 13,0                              |
| 150                                    | 6"                                     | 25,0                            | 103,0                         | 256                                 | 360                              | 7,0                               | 220                              | 14,0                              |
| 150                                    | 6"                                     | 37,5                            | 70,0                          | 256                                 | 460                              | 9,0                               | 300                              | 15,0                              |
| 150                                    | 6"                                     | 50,0                            | 58,0                          | 256                                 | 550                              | 10,0                              | 350                              | 16,0                              |
| 200                                    | 8"                                     | 12,5                            | 144,0                         | 432                                 | 270                              | 8,0                               | 150                              | 19,0                              |
| 200                                    | 8"                                     | 25,0                            | 91,0                          | 432                                 | 360                              | 10,0                              | 210                              | 20,0                              |
| 200                                    | 8"                                     | 37,5                            | 67,0                          | 432                                 | 430                              | 11,0                              | 260                              | 21,0                              |
| 200                                    | 8"                                     | 50,0                            | 53,0                          | 432                                 | 540                              | 14,0                              | 320                              | 22,0                              |
| 200                                    | 8"                                     | 62,5                            | 44,0                          | 432                                 | 650                              | 17,0                              | 380                              | 23,0                              |
| 250                                    | 10"                                    | 12,5                            | 211,0                         | 658                                 | 250                              | 9,0                               | 130                              | 24,0                              |
| 250                                    | 10"                                    | 25,0                            | 96,0                          | 658                                 | 380                              | 13,0                              | 220                              | 26,0                              |
| 250                                    | 10"                                    | 37,5                            | 70,0                          | 658                                 | 450                              | 14,0                              | 280                              | 28,0                              |
| 250                                    | 10"                                    | 50,0                            | 56,0                          | 658                                 | 560                              | 18,0                              | 340                              | 29,0                              |
| 250                                    | 10"                                    | 62,5                            | 50,0                          | 658                                 | 650                              | 21,0                              | 370                              | 30,0                              |
| 300                                    | 12"                                    | 12,5                            | 213,0                         | 915                                 | 250                              | 11,0                              | 140                              | 32,0                              |
| 300                                    | 12"                                    | 25,0                            | 97,0                          | 915                                 | 390                              | 15,0                              | 230                              | 35,0                              |
| 300                                    | 12"                                    | 37,5                            | 71,0                          | 915                                 | 460                              | 18,0                              | 300                              | 36,0                              |
| 300                                    | 12"                                    | 50,0                            | 56,0                          | 915                                 | 570                              | 22,0                              | 360                              | 38,0                              |
| 300                                    | 12"                                    | 62,5                            | 51,0                          | 915                                 | 670                              | 26,0                              | 390                              | 39,0                              |

PN 2,5

| Menovitá svetlost<br>Nominal diametr | Menovitá svetlost<br>Nominal diametr | Axiálny pohyb<br>Axial movement | Axiálna tuhosť<br>Spring rate | Efektívny prierez<br>Effective area |
|--------------------------------------|--------------------------------------|---------------------------------|-------------------------------|-------------------------------------|
| DN                                   | DN                                   | ± mm                            | N/mm                          | cm <sup>2</sup>                     |
| mm                                   | inch                                 |                                 |                               |                                     |
| 350                                  | 14"                                  | 12,5                            | 176,0                         | 1 104                               |
| 350                                  | 14"                                  | 25,0                            | 80,0                          | 1 104                               |
| 350                                  | 14"                                  | 37,5                            | 59,0                          | 1 104                               |
| 350                                  | 14"                                  | 50,0                            | 46,0                          | 1 104                               |
| 350                                  | 14"                                  | 62,5                            | 42,0                          | 1 104                               |
| 400                                  | 16"                                  | 12,5                            | 562,0                         | 1 446                               |
| 400                                  | 16"                                  | 25,0                            | 402,0                         | 1 446                               |
| 400                                  | 16"                                  | 37,5                            | 312,0                         | 1 446                               |
| 400                                  | 16"                                  | 50,0                            | 216,0                         | 1 446                               |
| 400                                  | 16"                                  | 62,5                            | 187,0                         | 1 446                               |
| 500                                  | 20"                                  | 12,5                            | 619,0                         | 2 220                               |
| 500                                  | 20"                                  | 25,0                            | 442,0                         | 2 220                               |
| 500                                  | 20"                                  | 37,5                            | 344,0                         | 2 220                               |
| 500                                  | 20"                                  | 50,0                            | 238,0                         | 2 220                               |
| 500                                  | 20"                                  | 62,5                            | 206,0                         | 2 220                               |
| 600                                  | 24"                                  | 12,5                            | 660,0                         | 3 159                               |
| 600                                  | 24"                                  | 25,0                            | 471,0                         | 3 159                               |
| 600                                  | 24"                                  | 37,5                            | 367,0                         | 3 159                               |
| 600                                  | 24"                                  | 50,0                            | 254,0                         | 3 159                               |
| 600                                  | 24"                                  | 62,5                            | 220,0                         | 3 159                               |
| 700                                  | 28"                                  | 12,5                            | 688,0                         | 4 266                               |
| 700                                  | 28"                                  | 25,0                            | 491,0                         | 4 266                               |
| 700                                  | 28"                                  | 37,5                            | 382,0                         | 4 266                               |
| 700                                  | 28"                                  | 50,0                            | 264,0                         | 4 266                               |
| 700                                  | 28"                                  | 62,5                            | 229,0                         | 4 266                               |
| 800                                  | 32"                                  | 12,5                            | 705,0                         | 5 536                               |
| 800                                  | 32"                                  | 25,0                            | 504,0                         | 5 536                               |
| 800                                  | 32"                                  | 37,5                            | 392,0                         | 5 536                               |
| 800                                  | 32"                                  | 50,0                            | 271,0                         | 5 536                               |
| 800                                  | 32"                                  | 62,5                            | 235,0                         | 5 536                               |
| 900                                  | 36"                                  | 12,5                            | 1 193,0                       | 6 968                               |
| 900                                  | 36"                                  | 25,0                            | 852,0                         | 6 968                               |
| 900                                  | 36"                                  | 37,5                            | 663,0                         | 6 968                               |
| 900                                  | 36"                                  | 50,0                            | 459,0                         | 6 968                               |
| 900                                  | 36"                                  | 62,5                            | 398,0                         | 6 968                               |
| 1000                                 | 40"                                  | 12,5                            | 1 091,0                       | 8 585                               |
| 1000                                 | 40"                                  | 25,0                            | 779,0                         | 8 585                               |
| 1000                                 | 40"                                  | 37,5                            | 606,0                         | 8 585                               |
| 1000                                 | 40"                                  | 50,0                            | 420,0                         | 8 585                               |
| 1000                                 | 40"                                  | 62,5                            | 364,0                         | 8 585                               |
| 1100                                 | 44"                                  | 12,5                            | 1 094,0                       | 10 378                              |
| 1100                                 | 44"                                  | 25,0                            | 781,0                         | 10 378                              |
| 1100                                 | 44"                                  | 37,5                            | 608,0                         | 10 378                              |
| 1100                                 | 44"                                  | 50,0                            | 421,0                         | 10 378                              |
| 1100                                 | 44"                                  | 62,5                            | 365,0                         | 10 378                              |
| 1200                                 | 48"                                  | 12,5                            | 998,0                         | 12 301                              |
| 1200                                 | 48"                                  | 25,0                            | 713,0                         | 12 301                              |
| 1200                                 | 48"                                  | 37,5                            | 555,0                         | 12 301                              |
| 1200                                 | 48"                                  | 50,0                            | 384,0                         | 12 301                              |
| 1200                                 | 48"                                  | 62,5                            | 333,0                         | 12 301                              |



MWA

Stavebná dĺžka  
Overall length

Približná hmotnosť  
App. weight

mm kg

260 12,0  
400 17,0  
480 20,0  
590 25,0  
690 29,0

290 16,0  
370 20,0  
430 23,0  
570 30,0  
680 36,0

290 20,0  
370 26,0  
430 29,0  
570 38,0  
680 45,0

290 24,0  
370 31,0  
430 35,0  
570 45,0  
680 54,0

290 27,0  
370 35,0  
430 40,0  
570 52,0  
680 60,0

290 31,0  
370 41,0  
430 46,0  
570 60,0  
680 70,0

290 50,0  
370 65,0  
430 75,0  
570 95,0  
680 115,0

290 56,0  
370 75,0  
430 85,0  
570 110,0  
680 130,0

290 70,0  
370 95,0  
430 105,0  
570 140,0  
680 165,0

290 80,0  
370 100,0  
430 115,0  
570 155,0  
680 180,0



MFA

Stavebná dĺžka  
Overall length

Približná hmotnosť  
App. weight

mm kg

150 44,0  
250 47,0  
320 49,0  
390 51,0  
420 52,0

180 55,0  
230 57,0  
270 58,0  
370 60,0  
410 65,0

190 75,0  
230 75,0  
280 75,0  
370 80,0  
420 85,0

190 90,0  
230 95,0  
280 95,0  
370 105,0  
420 105,0

190 105,0  
230 110,0  
280 115,0  
370 120,0  
420 125,0

190 130,0  
230 135,0  
280 140,0  
370 150,0  
420 155,0

190 155,0  
230 160,0  
280 170,0  
370 180,0  
420 190,0

190 170,0  
230 175,0  
280 185,0  
370 200,0  
420 210,0

190 180,0  
230 190,0  
280 200,0  
370 220,0  
420 230,0

190 195,0  
230 210,0  
280 220,0  
370 240,0  
420 250,0

PN 2,5

| Menovitá svetlost'<br>Nominal diameter | Menovitá svetlost'<br>Nominal diameter | Axiálny pohyb<br>Axial movement | Axiálna tuhosť<br>Spring rate | Efektívny prierez<br>Effective area | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight |
|----------------------------------------|----------------------------------------|---------------------------------|-------------------------------|-------------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|
| DN                                     | DN                                     | ± mm                            | N/mm                          | cm <sup>2</sup>                     | mm                               | kg                                | mm                               | kg                                |
| mm                                     | inch                                   |                                 |                               |                                     |                                  |                                   |                                  |                                   |
| 1300                                   | 52"                                    | 25,0                            | 1 020,0                       | 14 561                              | 290                              | 85,0                              | 190                              | 210,0                             |
| 1300                                   | 52"                                    | 37,5                            | 612,0                         | 14 561                              | 400                              | 115,0                             | 260                              | 230,0                             |
| 1300                                   | 52"                                    | 50,0                            | 437,0                         | 14 561                              | 580                              | 170,0                             | 340                              | 250,0                             |
| 1300                                   | S2"                                    | 62,5                            | 340,0                         | 14 561                              | 710                              | 205,0                             | 420                              | 270,0                             |
| 1300                                   | 52"                                    | 75,0                            | 278,0                         | 14 561                              | 840                              | 240,0                             | 500                              | 290,0                             |
| 1400                                   | 56"                                    | 25,0                            | 1 095,0                       | 16 778                              | 290                              | 90,0                              | 190                              | 225,0                             |
| 1400                                   | 56"                                    | 37,5                            | 657,0                         | 16 778                              | 400                              | 125,0                             | 260                              | 250,0                             |
| 1400                                   | 56"                                    | 50,0                            | 469,0                         | 16 778                              | 580                              | 185,0                             | 340                              | 270,0                             |
| 1400                                   | 56"                                    | 62,5                            | 365,0                         | 16 778                              | 710                              | 220,0                             | 420                              | 290,0                             |
| 1400                                   | 56"                                    | 75,0                            | 299,0                         | 16 778                              | 840                              | 260,0                             | 500                              | 310,0                             |
| 1500                                   | 60"                                    | 25,0                            | 1 170,0                       | 19 153                              | 290                              | 100,0                             | 190                              | 280,0                             |
| 1500                                   | 60"                                    | 37,5                            | 702,0                         | 19 153                              | 400                              | 135,0                             | 270                              | 300,0                             |
| 1500                                   | 60"                                    | 50,0                            | 501,0                         | 19 153                              | 580                              | 195,0                             | 350                              | 325,0                             |
| 1500                                   | 60"                                    | 62,5                            | 390,0                         | 19 153                              | 710                              | 235,0                             | 420                              | 345,0                             |
| 1500                                   | 60"                                    | 75,0                            | 319,0                         | 19 153                              | 840                              | 280,0                             | 500                              | 365,0                             |
| 1600                                   | 64"                                    | 25,0                            | 1 245,0                       | 21 684                              | 290                              | 105,0                             | 190                              | 295,0                             |
| 1600                                   | 64"                                    | 37,5                            | 1 121,0                       | 21 705                              | 410                              | 165,0                             | 270                              | 340,0                             |
| 1600                                   | 64"                                    | 50,0                            | 801,0                         | 21 705                              | 590                              | 240,0                             | 350                              | 375,0                             |
| 1600                                   | 64"                                    | 62,5                            | 623,0                         | 21 705                              | 720                              | 290,0                             | 430                              | 405,0                             |
| 1600                                   | 64"                                    | 75,0                            | 509,0                         | 21 705                              | 850                              | 340,0                             | 510                              | 435,0                             |
| 1800                                   | 72"                                    | 25,0                            | 2 093,0                       | 27 242                              | 290                              | 135,0                             | 200                              | 365,0                             |
| 1800                                   | 72"                                    | 37,5                            | 1 256,0                       | 27 242                              | 410                              | 185,0                             | 280                              | 400,0                             |
| 1800                                   | 72"                                    | 50,0                            | 897,0                         | 27 242                              | 590                              | 270,0                             | 360                              | 435,0                             |
| 1800                                   | 72"                                    | 62,5                            | 698,0                         | 27 242                              | 720                              | 325,0                             | 430                              | 470,0                             |
| 1800                                   | 72"                                    | 75,0                            | 571,0                         | 27 242                              | 850                              | 385,0                             | 510                              | 505,0                             |
| 2000                                   | 80"                                    | 25,0                            | 2 318,0                       | 33 407                              | 290                              | 145,0                             | 200                              | 405,0                             |
| 2000                                   | 80"                                    | 37,5                            | 1 391,0                       | 33 407                              | 410                              | 205,0                             | 280                              | 440,0                             |
| 2000                                   | 80"                                    | 50,0                            | 993,0                         | 33 407                              | 590                              | 300,0                             | 360                              | 485,0                             |
| 2000                                   | 80"                                    | 62,5                            | 773,0                         | 33 407                              | 720                              | 360,0                             | 430                              | 520,0                             |
| 2000                                   | 80"                                    | 75,0                            | 632,0                         | 33 407                              | 850                              | 425,0                             | 510                              | 560,0                             |
| 2200                                   | 88"                                    | 25,0                            | 2 542,0                       | 40 200                              | 290                              | 160,0                             | 200                              | 500,0                             |
| 2200                                   | 88"                                    | 37,5                            | 1 525,0                       | 40 200                              | 410                              | 225,0                             | 280                              | 540,0                             |
| 2200                                   | 88"                                    | 50,0                            | 1 090,0                       | 40 200                              | 590                              | 330,0                             | 360                              | 585,0                             |
| 2200                                   | 88"                                    | 62,5                            | 847,0                         | 40 200                              | 720                              | 400,0                             | 440                              | 630,0                             |
| 2200                                   | 88"                                    | 75,0                            | 693,0                         | 40 200                              | 850                              | 470,0                             | 520                              | 675,0                             |
| 2400                                   | 96"                                    | 25,0                            | 2 767,0                       | 47 622                              | 290                              | 175,0                             | 210                              | 570,0                             |
| 2400                                   | 96"                                    | 37,5                            | 1 660,0                       | 47 622                              | 410                              | 245,0                             | 280                              | 615,0                             |
| 2400                                   | 96"                                    | 50,0                            | 1 186,0                       | 47 622                              | 590                              | 355,0                             | 360                              | 665,0                             |
| 2400                                   | 96"                                    | 62,5                            | 922,0                         | 47 622                              | 720                              | 435,0                             | 440                              | 710,0                             |
| 2400                                   | 96"                                    | 75,0                            | 755,0                         | 47 622                              | 850                              | 510,0                             | 520                              | 760,0                             |
| 2600                                   | 104"                                   | 25,0                            | 2 992,0                       | 55 672                              | 290                              | 190,0                             | 210                              | 640,0                             |
| 2600                                   | 104"                                   | 37,5                            | 1 795,0                       | 55 672                              | 410                              | 270,0                             | 290                              | 690,0                             |
| 2600                                   | 104"                                   | 50,0                            | 1 282,0                       | 55 672                              | 590                              | 385,0                             | 370                              | 745,0                             |
| 2600                                   | 104"                                   | 62,5                            | 997,0                         | 55 672                              | 720                              | 470,0                             | 450                              | 795,0                             |
| 2600                                   | 104"                                   | 75,0                            | 816,0                         | 55 672                              | 850                              | 555,0                             | 530                              | 845,0                             |
| 2800                                   | 112"                                   | 25,0                            | 3 217,0                       | 64 350                              | 290                              | 215,0                             | 210                              | 815,0                             |
| 2800                                   | 112"                                   | 37,5                            | 1 930,0                       | 64 350                              | 410                              | 305,0                             | 290                              | 880,0                             |
| 2800                                   | 112"                                   | 50,0                            | 1 379,0                       | 64 350                              | 590                              | 440,0                             | 370                              | 945,0                             |
| 2800                                   | 112"                                   | 62,5                            | 1 072,0                       | 64 350                              | 720                              | 540,0                             | 450                              | 1 005,0                           |
| 2800                                   | 112"                                   | 75,0                            | 877,0                         | 64 350                              | 850                              | 635,0                             | 530                              | 1 065,0                           |



MWA



MFA

PN 2,5

| Menovitá svetlost'<br>Nominal diametr | Menovitá svetlost'<br>Nominal diametr | Axiálny pohyb<br>Axial movement | Axiálna tuhosť<br>Spring rate | Efektívny prierez<br>Effective area |
|---------------------------------------|---------------------------------------|---------------------------------|-------------------------------|-------------------------------------|
| DN                                    | DN                                    | ± mm                            | N/mm                          | cm <sup>2</sup>                     |
| mm                                    | inch                                  |                                 |                               |                                     |
| 3000                                  | 120"                                  | 25,0                            | 3 441,0                       | 73 657                              |
| 3000                                  | 120"                                  | 37,5                            | 2 065,0                       | 73 657                              |
| 3000                                  | 120"                                  | 50,0                            | 1 475,0                       | 73 657                              |
| 3000                                  | 120"                                  | 62,5                            | 1 147,0                       | 73 657                              |
| 3000                                  | 120"                                  | 75,0                            | 939,0                         | 73 657                              |
| 3200                                  | 128"                                  | 25,0                            | 3 666,0                       | 83 592                              |
| 3200                                  | 128"                                  | 37,5                            | 2 200,0                       | 83 592                              |
| 3200                                  | 128"                                  | 50,0                            | 1 571,0                       | 83 592                              |
| 3200                                  | 128"                                  | 62,5                            | 1 222,0                       | 83 592                              |
| 3200                                  | 128"                                  | 75,0                            | 1 000,0                       | 83 592                              |
| 3400                                  | 136"                                  | 25,0                            | 2 840,0                       | 94 427                              |
| 3400                                  | 136"                                  | 37,5                            | 1 704,0                       | 94 427                              |
| 3400                                  | 136"                                  | 50,0                            | 1 217,0                       | 94 427                              |
| 3400                                  | 136"                                  | 62,5                            | 947,0                         | 94 427                              |
| 3400                                  | 136"                                  | 75,0                            | 775,0                         | 94 427                              |
| 3600                                  | 144"                                  | 25,0                            | 3 004,0                       | 105 635                             |
| 3600                                  | 144"                                  | 37,5                            | 1 803,0                       | 105 635                             |
| 3600                                  | 144"                                  | 50,0                            | 1 288,0                       | 105 635                             |
| 3600                                  | 144"                                  | 62,5                            | 1 001,0                       | 105 635                             |
| 3600                                  | 144"                                  | 75,0                            | 819,0                         | 105 635                             |
| 3800                                  | 152"                                  | 25,0                            | 3 168,0                       | 117 470                             |
| 3800                                  | 152"                                  | 37,5                            | 1 901,0                       | 117 470                             |
| 3800                                  | 152"                                  | 50,0                            | 1 358,0                       | 117 470                             |
| 3800                                  | 152"                                  | 62,5                            | 1 056,0                       | 117 470                             |
| 3800                                  | 152"                                  | 75,0                            | 864,0                         | 117 470                             |
| 4000                                  | 160"                                  | 25,0                            | 3 332,0                       | 129 934                             |
| 4000                                  | 160"                                  | 37,5                            | 1 999,0                       | 129 934                             |
| 4000                                  | 160"                                  | 50,0                            | 1 428,0                       | 129 934                             |
| 4000                                  | 160"                                  | 62,5                            | 1 111,0                       | 129 934                             |
| 4000                                  | 160"                                  | 75,0                            | 909,0                         | 129 934                             |
| 4200                                  | 168"                                  | 25,0                            | 3 496,0                       | 143 027                             |
| 4200                                  | 168"                                  | 37,5                            | 2 098,0                       | 143 027                             |
| 4200                                  | 168"                                  | 50,0                            | 1 498,0                       | 143 027                             |
| 4200                                  | 168"                                  | 62,5                            | 1 165,0                       | 143 027                             |
| 4200                                  | 168"                                  | 75,0                            | 953,0                         | 143 027                             |
| 4500                                  | 180"                                  | 25,0                            | 3 742,0                       | 163 843                             |
| 4500                                  | 180"                                  | 37,5                            | 2 245,0                       | 163 843                             |
| 4500                                  | 180"                                  | 50,0                            | 1 604,0                       | 163 843                             |
| 4500                                  | 180"                                  | 62,5                            | 1 247,0                       | 163 843                             |
| 4500                                  | 180"                                  | 75,0                            | 1 020,0                       | 163 843                             |
| 5000                                  | 200"                                  | 25,0                            | 4 151,0                       | 201 679                             |
| 5000                                  | 200"                                  | 37,5                            | 2 491,0                       | 201 679                             |
| 5000                                  | 200"                                  | 50,0                            | 1 779,0                       | 201 679                             |
| 5000                                  | 200"                                  | 62,5                            | 1 384,0                       | 201 679                             |
| 5000                                  | 200"                                  | 75,0                            | 1 132,0                       | 201 679                             |
| 5500                                  | 220"                                  | 25,0                            | 4 561,0                       | 243 442                             |
| 5500                                  | 220"                                  | 37,5                            | 2 736,0                       | 243 442                             |
| 5500                                  | 220"                                  | 50,0                            | 1 955,0                       | 243 442                             |
| 5500                                  | 220"                                  | 62,5                            | 1 520,0                       | 243 442                             |
| 5500                                  | 220"                                  | 75,0                            | 1 244,0                       | 243 442                             |
| 6000                                  | 240"                                  | 25,0                            | 4 970,0                       | 289 131                             |
| 6000                                  | 240"                                  | 37,5                            | 2 982,0                       | 289 131                             |
| 6000                                  | 240"                                  | 50,0                            | 2 130,0                       | 289 131                             |
| 6000                                  | 240"                                  | 62,5                            | 1 657,0                       | 289 131                             |
| 6000                                  | 240"                                  | 75,0                            | 1 356,0                       | 289 131                             |



MWA

Stavebná dĺžka  
Overall length

Približná hmotnosť  
App. weight

mm kg

|     |         |
|-----|---------|
| 290 | 230,0   |
| 410 | 330,0   |
| 590 | 475,0   |
| 720 | 575,0   |
| 850 | 680,0   |
| 290 | 250,0   |
| 410 | 350,0   |
| 590 | 505,0   |
| 720 | 615,0   |
| 850 | 725,0   |
| 290 | 270,0   |
| 410 | 385,0   |
| 590 | 550,0   |
| 720 | 675,0   |
| 850 | 795,0   |
| 290 | 285,0   |
| 410 | 405,0   |
| 590 | 585,0   |
| 720 | 710,0   |
| 850 | 845,0   |
| 290 | 300,0   |
| 410 | 430,0   |
| 590 | 615,0   |
| 720 | 750,0   |
| 850 | 890,0   |
| 290 | 320,0   |
| 410 | 450,0   |
| 590 | 650,0   |
| 720 | 790,0   |
| 850 | 935,0   |
| 290 | 335,0   |
| 410 | 470,0   |
| 590 | 680,0   |
| 720 | 830,0   |
| 850 | 985,0   |
| 290 | 355,0   |
| 410 | 505,0   |
| 590 | 730,0   |
| 720 | 890,0   |
| 850 | 1 055,0 |
| 290 | 395,0   |
| 410 | 560,0   |
| 590 | 810,0   |
| 720 | 990,0   |
| 850 | 1 170,0 |
| 290 | 435,0   |
| 410 | 620,0   |
| 590 | 890,0   |
| 720 | 1 085,0 |
| 850 | 1 285,0 |
| 290 | 475,0   |
| 410 | 675,0   |
| 590 | 970,0   |
| 720 | 1 185,0 |
| 850 | 1 405,0 |



MFA

Stavebná dĺžka  
Overall length

Približná hmotnosť  
App. weight

mm kg

|     |         |
|-----|---------|
| 210 | 875,0   |
| 290 | 940,0   |
| 370 | 1 010,0 |
| 450 | 1 075,0 |
| 530 | 1 140,0 |
| 220 | 970,0   |
| 300 | 1 040,0 |
| 380 | 1 110,0 |
| 450 | 1 180,0 |
| 530 | 1 255,0 |
| 220 | 1 075,0 |
| 300 | 1 155,0 |
| 380 | 1 235,0 |
| 460 | 1 315,0 |
| 540 | 1 395,0 |
| 230 | 1 230,0 |
| 300 | 1 315,0 |
| 380 | 1 400,0 |
| 460 | 1 485,0 |
| 540 | 1 570,0 |
| 230 | 1 325,0 |
| 300 | 1 410,0 |
| 380 | 1 505,0 |
| 460 | 1 590,0 |
| 540 | 1 680,0 |
| 230 | 1 440,0 |
| 310 | 1 535,0 |
| 390 | 1 630,0 |
| 470 | 1 725,0 |
| 550 | 1 820,0 |

# PN 6

| Menovitá svetlost'<br>Nominal diameter | Menovitá svetlost'<br>Nominal diameter | Axiálny pohyb<br>Axial movement | Axiálna tuhosť<br>Spring rate | Efektívny prierez<br>Effective area | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight |
|----------------------------------------|----------------------------------------|---------------------------------|-------------------------------|-------------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|
| DN                                     | DN                                     | ± mm                            | N/mm                          | cm <sup>2</sup>                     | mm                               | kg                                | mm                               | kg                                |
| mm                                     | inch                                   |                                 |                               |                                     |                                  |                                   |                                  |                                   |
| 25                                     | 1"                                     | 6,0                             | 32,0                          | 11                                  | 150                              | 0,3                               | 90                               | 1,9                               |
| 25                                     | 1"                                     | 12,5                            | 18,0                          | 11                                  | 200                              | 0,4                               | 120                              | 1,9                               |
| 25                                     | 1"                                     | 25,0                            | 9,0                           | 11                                  | 320                              | 0,6                               | 210                              | 2,0                               |
| 25                                     | 1"                                     | 37,5                            | 6,0                           | 11                                  | 460                              | 0,8                               | 300                              | 2,2                               |
| 32                                     | 1 ¼"                                   | 6,0                             | 31,0                          | 17                                  | 150                              | 0,4                               | 90                               | 2,9                               |
| 32                                     | 1 ¼"                                   | 12,5                            | 15,0                          | 17                                  | 210                              | 0,6                               | 130                              | 3,0                               |
| 32                                     | 1 ¼"                                   | 25,0                            | 8,0                           | 17                                  | 340                              | 0,9                               | 220                              | 3,0                               |
| 32                                     | 1 ¼"                                   | 37,5                            | 5,0                           | 17                                  | 460                              | 1,1                               | 310                              | 3,0                               |
| 40                                     | 1 ½"                                   | 6,0                             | 34,0                          | 22                                  | 200                              | 0,7                               | 90                               | 3,0                               |
| 40                                     | 1 ½"                                   | 12,5                            | 19,0                          | 22                                  | 220                              | 0,7                               | 130                              | 3,0                               |
| 40                                     | 1 ½"                                   | 25,0                            | 10,0                          | 22                                  | 340                              | 1,0                               | 220                              | 4,0                               |
| 40                                     | 1 ½"                                   | 37,5                            | 6,0                           | 22                                  | 460                              | 1,3                               | 310                              | 4,0                               |
| 50                                     | 2"                                     | 6,0                             | 76,0                          | 36                                  | 220                              | 1,1                               | 90                               | 4,0                               |
| 50                                     | 2"                                     | 12,5                            | 38,0                          | 36                                  | 250                              | 1,1                               | 130                              | 4,0                               |
| 50                                     | 2"                                     | 25,0                            | 19,0                          | 36                                  | 370                              | 1,6                               | 220                              | 4,0                               |
| 50                                     | 2"                                     | 37,5                            | 13,0                          | 36                                  | 480                              | 2,0                               | 320                              | 4,0                               |
| 65                                     | 2 ½"                                   | 6,0                             | 51,0                          | 53                                  | 230                              | 1,8                               | 90                               | 5,0                               |
| 65                                     | 2 ½"                                   | 12,5                            | 31,0                          | 53                                  | 260                              | 1,8                               | 130                              | 5,0                               |
| 65                                     | 2 ½"                                   | 25,0                            | 15,0                          | 53                                  | 370                              | 2,4                               | 210                              | 5,0                               |
| 65                                     | 2 ½"                                   | 37,5                            | 10,0                          | 53                                  | 480                              | 2,8                               | 300                              | 5,0                               |
| 80                                     | 3"                                     | 6,0                             | 49,0                          | 76                                  | 240                              | 2,3                               | 100                              | 7,0                               |
| 80                                     | 3"                                     | 12,5                            | 29,0                          | 76                                  | 280                              | 2,5                               | 140                              | 8,0                               |
| 80                                     | 3"                                     | 25,0                            | 15,0                          | 76                                  | 370                              | 2,9                               | 230                              | 8,0                               |
| 80                                     | 3"                                     | 37,5                            | 10,0                          | 76                                  | 500                              | 4,0                               | 330                              | 8,0                               |
| 100                                    | 4"                                     | 12,5                            | 104,0                         | 122                                 | 250                              | 3,0                               | 130                              | 9,0                               |
| 100                                    | 4"                                     | 25,0                            | 56,0                          | 122                                 | 350                              | 4,0                               | 200                              | 9,0                               |
| 100                                    | 4"                                     | 37,5                            | 38,0                          | 122                                 | 440                              | 5,0                               | 270                              | 10,0                              |
| 100                                    | 4"                                     | 50,0                            | 32,0                          | 122                                 | 510                              | 6,0                               | 320                              | 10,0                              |
| 125                                    | 5"                                     | 12,5                            | 247,0                         | 181                                 | 250                              | 5,0                               | 130                              | 12,0                              |
| 125                                    | 5"                                     | 25,0                            | 133,0                         | 181                                 | 350                              | 6,0                               | 210                              | 12,0                              |
| 125                                    | 5"                                     | 37,5                            | 91,0                          | 181                                 | 440                              | 7,0                               | 280                              | 13,0                              |
| 125                                    | 5"                                     | 50,0                            | 75,0                          | 181                                 | 530                              | 8,0                               | 330                              | 14,0                              |
| 150                                    | 6"                                     | 12,5                            | 331,0                         | 257                                 | 260                              | 6,0                               | 140                              | 13,0                              |
| 150                                    | 6"                                     | 25,0                            | 178,0                         | 257                                 | 360                              | 7,0                               | 220                              | 14,0                              |
| 150                                    | 6"                                     | 37,5                            | 122,0                         | 257                                 | 460                              | 9,0                               | 300                              | 15,0                              |
| 150                                    | 6"                                     | 50,0                            | 101,0                         | 257                                 | 550                              | 11,0                              | 350                              | 16,0                              |
| 200                                    | 8"                                     | 12,5                            | 393,0                         | 434                                 | 270                              | 9,0                               | 150                              | 20,0                              |
| 200                                    | 8"                                     | 25,0                            | 250,0                         | 434                                 | 360                              | 12,0                              | 210                              | 22,0                              |
| 200                                    | 8"                                     | 37,5                            | 183,0                         | 434                                 | 430                              | 14,0                              | 260                              | 23,0                              |
| 200                                    | 8"                                     | 50,0                            | 145,0                         | 434                                 | 540                              | 17,0                              | 320                              | 25,0                              |
| 200                                    | 8"                                     | 62,5                            | 120,0                         | 434                                 | 650                              | 21,0                              | 380                              | 27,0                              |
| 250                                    | 10"                                    | 12,5                            | 577,0                         | 660                                 | 250                              | 10,0                              | 130                              | 25,0                              |
| 250                                    | 10"                                    | 25,0                            | 262,0                         | 660                                 | 380                              | 15,0                              | 220                              | 29,0                              |
| 250                                    | 10"                                    | 37,5                            | 192,0                         | 660                                 | 450                              | 18,0                              | 280                              | 31,0                              |
| 250                                    | 10"                                    | 50,0                            | 152,0                         | 660                                 | 560                              | 22,0                              | 340                              | 33,0                              |
| 250                                    | 10"                                    | 62,5                            | 137,0                         | 660                                 | 650                              | 26,0                              | 370                              | 34,0                              |
| 300                                    | 12"                                    | 12,5                            | 583,0                         | 918                                 | 250                              | 12,0                              | 140                              | 34,0                              |
| 300                                    | 12"                                    | 25,0                            | 265,0                         | 918                                 | 390                              | 18,0                              | 230                              | 38,0                              |
| 300                                    | 12"                                    | 37,5                            | 194,0                         | 918                                 | 460                              | 22,0                              | 300                              | 41,0                              |
| 300                                    | 12"                                    | 50,0                            | 153,0                         | 918                                 | 570                              | 27,0                              | 360                              | 43,0                              |
| 300                                    | 12"                                    | 62,5                            | 139,0                         | 918                                 | 670                              | 32,0                              | 390                              | 45,0                              |



**MWA**



**MFA**

## PN 6

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Axiálny pohyb<br>Axial movement | Axiálna tuhosť<br>Spring rate | Efektívny prierez<br>Effective area | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight |
|---------------------------------------|---------------------------------------|---------------------------------|-------------------------------|-------------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|
| DN                                    | DN                                    | ± mm                            | N/mm                          | cm <sup>2</sup>                     | mm                               | kg                                | mm                               | kg                                |
| 350                                   | 14"                                   | 12,5                            | 481,0                         | 1 108                               | 260                              | 14,0                              | 150                              | 46,0                              |
| 350                                   | 14"                                   | 25,0                            | 219,0                         | 1 108                               | 400                              | 21,0                              | 250                              | 51,0                              |
| 350                                   | 14"                                   | 37,5                            | 160,0                         | 1 108                               | 480                              | 25,0                              | 320                              | 54,0                              |
| 350                                   | 14"                                   | 50,0                            | 127,0                         | 1 108                               | 590                              | 31,0                              | 390                              | 57,0                              |
| 350                                   | 14"                                   | 62,5                            | 115,0                         | 1 108                               | 690                              | 36,0                              | 420                              | 59,0                              |
| 400                                   | 16"                                   | 12,5                            | 941,0                         | 1 451                               | 290                              | 19,0                              | 180                              | 58,0                              |
| 400                                   | 16"                                   | 25,0                            | 672,0                         | 1 451                               | 370                              | 25,0                              | 230                              | 60,0                              |
| 400                                   | 16"                                   | 37,5                            | 523,0                         | 1 451                               | 430                              | 29,0                              | 270                              | 65,0                              |
| 400                                   | 16"                                   | 50,0                            | 362,0                         | 1 451                               | 570                              | 38,0                              | 370                              | 70,0                              |
| 400                                   | 16"                                   | 62,5                            | 314,0                         | 1 451                               | 680                              | 45,0                              | 410                              | 75,0                              |
| 500                                   | 20"                                   | 12,5                            | 1 036,0                       | 2 226                               | 290                              | 24,0                              | 190                              | 75,0                              |
| 500                                   | 20"                                   | 25,0                            | 740,0                         | 2 226                               | 370                              | 32,0                              | 230                              | 80,0                              |
| 500                                   | 20"                                   | 37,5                            | 575,0                         | 2 226                               | 430                              | 36,0                              | 280                              | 85,0                              |
| 500                                   | 20"                                   | 50,0                            | 398,0                         | 2 226                               | 570                              | 49,0                              | 370                              | 95,0                              |
| 500                                   | 20"                                   | 62,5                            | 345,0                         | 2 226                               | 680                              | 58,0                              | 420                              | 100,0                             |
| 600                                   | 24"                                   | 12,5                            | 1 103,0                       | 3 166                               | 290                              | 30,0                              | 190                              | 95,0                              |
| 600                                   | 24"                                   | 25,0                            | 788,0                         | 3 166                               | 370                              | 39,0                              | 230                              | 100,0                             |
| 600                                   | 24"                                   | 37,5                            | 613,0                         | 3 166                               | 430                              | 44,0                              | 280                              | 105,0                             |
| 600                                   | 24"                                   | 50,0                            | 424,0                         | 3 166                               | 570                              | 59,0                              | 370                              | 115,0                             |
| 600                                   | 24"                                   | 62,5                            | 368,0                         | 3 166                               | 680                              | 70,0                              | 420                              | 120,0                             |
| 700                                   | 28"                                   | 12,5                            | 1 149,0                       | 4 274                               | 290                              | 34,0                              | 190                              | 120,0                             |
| 700                                   | 28"                                   | 25,0                            | 821,0                         | 4 274                               | 370                              | 44,0                              | 240                              | 125,0                             |
| 700                                   | 28"                                   | 37,5                            | 638,0                         | 4 274                               | 430                              | 51,0                              | 280                              | 130,0                             |
| 700                                   | 28"                                   | 50,0                            | 442,0                         | 4 274                               | 570                              | 70,0                              | 370                              | 145,0                             |
| 700                                   | 28"                                   | 62,5                            | 383,0                         | 4 274                               | 680                              | 80,0                              | 420                              | 150,0                             |
| 800                                   | 32"                                   | 12,5                            | 1 178,0                       | 5 546                               | 290                              | 39,0                              | 190                              | 155,0                             |
| 800                                   | 32"                                   | 25,0                            | 842,0                         | 5 546                               | 370                              | 51,0                              | 240                              | 165,0                             |
| 800                                   | 32"                                   | 37,5                            | 655,0                         | 5 546                               | 430                              | 59,0                              | 290                              | 170,0                             |
| 800                                   | 32"                                   | 50,0                            | 453,0                         | 5 546                               | 570                              | 80,0                              | 380                              | 185,0                             |
| 800                                   | 32"                                   | 62,5                            | 393,0                         | 5 546                               | 680                              | 95,0                              | 420                              | 190,0                             |
| 900                                   | 36"                                   | 12,5                            | 1 193,0                       | 6 968                               | 290                              | 52,0                              | 200                              | 180,0                             |
| 900                                   | 36"                                   | 25,0                            | 852,0                         | 6 968                               | 370                              | 65,0                              | 240                              | 190,0                             |
| 900                                   | 36"                                   | 37,5                            | 663,0                         | 6 968                               | 430                              | 75,0                              | 290                              | 195,0                             |
| 900                                   | 36"                                   | 50,0                            | 459,0                         | 6 968                               | 570                              | 100,0                             | 380                              | 215,0                             |
| 900                                   | 36"                                   | 62,5                            | 398,0                         | 6 968                               | 680                              | 120,0                             | 430                              | 220,0                             |
| 1000                                  | 40"                                   | 12,5                            | 1 962,0                       | 8 600                               | 290                              | 70,0                              | 210                              | 210,0                             |
| 1000                                  | 40"                                   | 25,0                            | 1 401,0                       | 8 600                               | 380                              | 90,0                              | 250                              | 225,0                             |
| 1000                                  | 40"                                   | 37,5                            | 1 090,0                       | 8 600                               | 440                              | 105,0                             | 300                              | 235,0                             |
| 1000                                  | 40"                                   | 50,0                            | 755,0                         | 8 600                               | 590                              | 145,0                             | 400                              | 265,0                             |
| 1000                                  | 40"                                   | 62,5                            | 654,0                         | 8 600                               | 700                              | 170,0                             | 450                              | 275,0                             |
| 1100                                  | 44"                                   | 12,5                            | 1 969,0                       | 10 412                              | 290                              | 80,0                              | 210                              | 255,0                             |
| 1100                                  | 44"                                   | 25,0                            | 1 406,0                       | 10 412                              | 380                              | 100,0                             | 260                              | 270,0                             |
| 1100                                  | 44"                                   | 37,5                            | 1 094,0                       | 10 412                              | 440                              | 120,0                             | 310                              | 285,0                             |
| 1100                                  | 44"                                   | 50,0                            | 757,0                         | 10 412                              | 590                              | 160,0                             | 410                              | 315,0                             |
| 1100                                  | 44"                                   | 62,5                            | 656,0                         | 10 412                              | 700                              | 190,0                             | 460                              | 330,0                             |
| 1200                                  | 48"                                   | 12,5                            | 1 796,0                       | 12 339                              | 290                              | 85,0                              | 210                              | 315,0                             |
| 1200                                  | 48"                                   | 25,0                            | 1 283,0                       | 12 339                              | 380                              | 115,0                             | 260                              | 335,0                             |
| 1200                                  | 48"                                   | 37,5                            | 998,0                         | 12 339                              | 440                              | 130,0                             | 310                              | 350,0                             |
| 1200                                  | 48"                                   | 50,0                            | 691,0                         | 12 339                              | 590                              | 180,0                             | 410                              | 385,0                             |
| 1200                                  | 48"                                   | 62,5                            | 599,0                         | 12 339                              | 700                              | 210,0                             | 460                              | 400,0                             |
| 1300                                  | 52"                                   | 25,0                            | 2 044,0                       | 14 617                              | 290                              | 105,0                             | 220                              | 390,0                             |
| 1300                                  | 52"                                   | 37,5                            | 1 226,0                       | 14 617                              | 410                              | 150,0                             | 300                              | 425,0                             |
| 1300                                  | 52"                                   | 50,0                            | 876,0                         | 14 617                              | 590                              | 210,0                             | 380                              | 460,0                             |
| 1300                                  | 52"                                   | 62,5                            | 681,0                         | 14 617                              | 720                              | 260,0                             | 460                              | 495,0                             |
| 1300                                  | 52"                                   | 75,0                            | 557,0                         | 14 617                              | 850                              | 310,0                             | 540                              | 530,0                             |



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# PN 6

| Menovitá svetlost'<br>Nominal diameter | Menovitá svetlost'<br>Nominal diameter | Axiálny pohyb<br>Axial movement | Axiálna tuhosť<br>Spring rate | Efektívny prierez<br>Effective area |
|----------------------------------------|----------------------------------------|---------------------------------|-------------------------------|-------------------------------------|
| DN                                     | DN                                     | ± mm                            | N/mm                          | cm <sup>2</sup>                     |
| mm                                     | inch                                   |                                 |                               |                                     |
| 1400                                   | 56"                                    | 25,0                            | 2 194,0                       | 16 838                              |
| 1400                                   | 56"                                    | 37,5                            | 1 316,0                       | 16 838                              |
| 1400                                   | 56"                                    | 50,0                            | 940,0                         | 16 838                              |
| 1400                                   | 56"                                    | 62,5                            | 731,0                         | 16 838                              |
| 1400                                   | 56"                                    | 75,0                            | 598,0                         | 16 838                              |
| 1500                                   | 60"                                    | 25,0                            | 2 344,0                       | 19 217                              |
| 1500                                   | 60"                                    | 37,5                            | 1 406,0                       | 19 217                              |
| 1500                                   | 60"                                    | 50,0                            | 1 004,0                       | 19 217                              |
| 1500                                   | 60"                                    | 62,5                            | 781,0                         | 19 217                              |
| 1500                                   | 60"                                    | 75,0                            | 639,0                         | 19 217                              |
| 1600                                   | 64"                                    | 25,0                            | 2 493,0                       | 21 752                              |
| 1600                                   | 64"                                    | 37,5                            | 1 496,0                       | 21 752                              |
| 1600                                   | 64"                                    | 50,0                            | 1 069,0                       | 21 752                              |
| 1600                                   | 64"                                    | 62,5                            | 831,0                         | 21 752                              |
| 1600                                   | 64"                                    | 75,0                            | 680,0                         | 21 752                              |
| 1800                                   | 72"                                    | 25,0                            | 2 793,0                       | 27 294                              |
| 1800                                   | 72"                                    | 37,5                            | 1 676,0                       | 27 294                              |
| 1800                                   | 72"                                    | 50,0                            | 1 197,0                       | 27 294                              |
| 1800                                   | 72"                                    | 62,5                            | 931,0                         | 27 294                              |
| 1800                                   | 72"                                    | 75,0                            | 762,0                         | 27 294                              |
| 2000                                   | 80"                                    | 25,0                            | 3 091,0                       | 33 433                              |
| 2000                                   | 80"                                    | 37,5                            | 1 855,0                       | 33 433                              |
| 2000                                   | 80"                                    | 50,0                            | 1 325,0                       | 33 433                              |
| 2000                                   | 80"                                    | 62,5                            | 1 030,0                       | 33 433                              |
| 2000                                   | 80"                                    | 75,0                            | 843,0                         | 33 433                              |
| 2200                                   | 88"                                    | 25,0                            | 3 391,0                       | 40 229                              |
| 2200                                   | 88"                                    | 37,5                            | 2 035,0                       | 40 229                              |
| 2200                                   | 88"                                    | 50,0                            | 1 453,0                       | 40 229                              |
| 2200                                   | 88"                                    | 62,5                            | 1 130,0                       | 40 229                              |
| 2200                                   | 88"                                    | 75,0                            | 925,0                         | 40 229                              |
| 2400                                   | 96"                                    | 25,0                            | 3 691,0                       | 47 653                              |
| 2400                                   | 96"                                    | 37,5                            | 2 214,0                       | 47 653                              |
| 2400                                   | 96"                                    | 50,0                            | 1 582,0                       | 47 653                              |
| 2400                                   | 96"                                    | 62,5                            | 1 230,0                       | 47 653                              |
| 2400                                   | 96"                                    | 75,0                            | 1 007,0                       | 47 653                              |
| 2600                                   | 104"                                   | 25,0                            | 4 989,0                       | 55 739                              |
| 2600                                   | 104"                                   | 37,5                            | 2 994,0                       | 55 739                              |
| 2600                                   | 104"                                   | 50,0                            | 2 138,0                       | 55 739                              |
| 2600                                   | 104"                                   | 62,5                            | 1 663,0                       | 55 739                              |
| 2600                                   | 104"                                   | 75,0                            | 1 361,0                       | 55 739                              |
| 2800                                   | 112"                                   | 25,0                            | 5 364,0                       | 64 422                              |
| 2800                                   | 112"                                   | 37,5                            | 3 218,0                       | 64 422                              |
| 2800                                   | 112"                                   | 50,0                            | 2 299,0                       | 64 422                              |
| 2800                                   | 112"                                   | 62,5                            | 1 788,0                       | 64 422                              |
| 2800                                   | 112"                                   | 75,0                            | 1 463,0                       | 64 422                              |
| 3000                                   | 120"                                   | 25,0                            | 5 739,0                       | 73 734                              |
| 3000                                   | 120"                                   | 37,5                            | 3 443,0                       | 73 734                              |
| 3000                                   | 120"                                   | 50,0                            | 2 459,0                       | 73 734                              |
| 3000                                   | 120"                                   | 62,5                            | 1 913,0                       | 73 734                              |



## MWA

Stavebná dĺžka  
Overall length

Približná hmotnosť  
App. weight

mm kg

290 110,0  
410 160,0  
590 230,0  
720 280,0  
850 330,0

290 120,0  
410 170,0  
590 245,0  
720 300,0  
850 355,0

290 125,0  
410 180,0  
590 260,0  
720 320,0  
850 380,0

290 140,0  
410 205,0  
590 290,0  
720 360,0  
850 425,0

290 175,0  
410 245,0  
590 355,0  
720 435,0  
850 510,0

290 190,0  
410 270,0  
590 390,0  
720 475,0  
850 565,0

290 210,0  
410 295,0  
590 425,0  
720 520,0  
850 615,0

290 245,0  
420 355,0  
600 505,0  
730 625,0  
860 740,0

290 265,0  
420 385,0  
600 545,0  
730 670,0  
860 795,0

290 285,0  
420 410,0  
600 585,0  
730 720,0



## MFA

Stavebná dĺžka  
Overall length

Približná hmotnosť  
App. weight

mm kg

220 455,0  
300 490,0  
380 530,0  
460 570,0  
540 605,0

220 505,0  
300 545,0  
390 585,0  
470 625,0  
550 665,0

230 555,0  
310 600,0  
390 645,0  
470 685,0  
550 730,0

230 685,0  
310 735,0  
390 785,0  
470 830,0  
550 880,0

240 875,0  
320 930,0  
400 985,0  
480 1 040,0  
560 1 095,0

250 1 095,0  
330 1 155,0  
410 1 215,0  
490 1 275,0  
570 1 335,0

260 1 270,0  
340 1 350,0  
420 1 400,0  
500 1 465,0  
580 1 530,0

260 1 535,0  
340 1 615,0  
430 1 705,0  
510 1 790,0  
590 1 870,0

270 1 800,0  
350 1 885,0  
430 1 980,0  
520 2 070,0  
600 2 160,0

270 1 970,0  
360 2 065,0  
440 2 165,0  
520 2 265,0

# PN 6

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Axiálny pohyb<br>Axial movement | Axiálna tuhosť<br>Spring rate | Efektívny prierez<br>Effective area |
|---------------------------------------|---------------------------------------|---------------------------------|-------------------------------|-------------------------------------|
| DN                                    | DN                                    | ± mm                            | N/mm                          | cm <sup>2</sup>                     |
| mm                                    | inch                                  |                                 |                               |                                     |
| 3200                                  | 128"                                  | 25,0                            | 7 335,0                       | 83 664                              |
| 3200                                  | 128"                                  | 37,5                            | 4 401,0                       | 83 664                              |
| 3200                                  | 128"                                  | 50,0                            | 3 144,0                       | 83 664                              |
| 3400                                  | 136"                                  | 25,0                            | 5 683,0                       | 94 504                              |
| 3400                                  | 136"                                  | 37,5                            | 3 410,0                       | 94 504                              |
| 3400                                  | 136"                                  | 50,0                            | 2 436,0                       | 94 504                              |
| 3600                                  | 144"                                  | 25,0                            | 6 011,0                       | 105 715                             |
| 3600                                  | 144"                                  | 37,5                            | 3 607,0                       | 105 715                             |
| 3600                                  | 144"                                  | 50,0                            | 2 576,0                       | 105 715                             |



**MWA**

| Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight |
|----------------------------------|-----------------------------------|
| mm                               | kg                                |
| 300                              | 355,0                             |
| 420                              | 515,0                             |
| 600                              | 735,0                             |
| 300                              | 390,0                             |
| 420                              | 570,0                             |
| 600                              | 810,0                             |
| 300                              | 415,0                             |
| 420                              | 600,0                             |
| 600                              | 860,0                             |



**MFA**

| Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight |
|----------------------------------|-----------------------------------|
| mm                               | kg                                |
| 290                              | 2 360,0                           |
| 370                              | 2 480,0                           |
| 460                              | 2 605,0                           |
| 300                              | 2 720,0                           |
| 380                              | 2 855,0                           |
| 460                              | 2 995,0                           |
| 300                              | 3 325,0                           |
| 390                              | 3 470,0                           |
| 470                              | 3 615,0                           |

**PN 10**

| Menovitá svetlost'<br>Nominal diameter | Menovitá svetlost'<br>Nominal diameter | Axiálny pohyb<br>Axial movement | Axiálna tuhosť<br>Spring rate | Efektívny prierez<br>Effective area | MWA                              |                                   | MFA                              |                                   |
|----------------------------------------|----------------------------------------|---------------------------------|-------------------------------|-------------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|
| DN                                     | DN                                     |                                 |                               |                                     | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight |
| mm                                     | inch                                   | ± mm                            | N/mm                          | cm <sup>2</sup>                     | mm                               | kg                                | mm                               | kg                                |
| 25                                     | 1"                                     | 6,0                             | 65,0                          | 11                                  | 150                              | 0,3                               | 140                              | 2,7                               |
| 25                                     | 1"                                     | 12,5                            | 36,0                          | 11                                  | 200                              | 0,4                               | 180                              | 2,8                               |
| 25                                     | 1"                                     | 25,0                            | 18,0                          | 11                                  | 330                              | 0,7                               | 270                              | 3,0                               |
| 25                                     | 1"                                     | 37,5                            | 12,0                          | 11                                  | 470                              | 1,0                               | 360                              | 3,0                               |
| 32                                     | 1 1/4"                                 | 6,0                             | 61,0                          | 18                                  | 150                              | 0,5                               | 140                              | 4,0                               |
| 32                                     | 1 1/4"                                 | 12,5                            | 31,0                          | 18                                  | 220                              | 0,7                               | 180                              | 4,0                               |
| 32                                     | 1 1/4"                                 | 25,0                            | 15,0                          | 18                                  | 350                              | 1,0                               | 280                              | 4,0                               |
| 32                                     | 1 1/4"                                 | 37,5                            | 10,0                          | 18                                  | 470                              | 1,3                               | 370                              | 5,0                               |
| 40                                     | 1 1/2"                                 | 6,0                             | 69,0                          | 22                                  | 200                              | 0,8                               | 150                              | 5,0                               |
| 40                                     | 1 1/2"                                 | 12,5                            | 39,0                          | 22                                  | 220                              | 0,8                               | 190                              | 5,0                               |
| 40                                     | 1 1/2"                                 | 25,0                            | 19,0                          | 22                                  | 340                              | 1,1                               | 280                              | 5,0                               |
| 40                                     | 1 1/2"                                 | 37,5                            | 13,0                          | 22                                  | 470                              | 1,6                               | 370                              | 5,0                               |
| 50                                     | 2"                                     | 6,0                             | 153,0                         | 37                                  | 220                              | 1,2                               | 150                              | 6,0                               |
| 50                                     | 2"                                     | 12,5                            | 76,0                          | 37                                  | 250                              | 1,3                               | 200                              | 6,0                               |
| 50                                     | 2"                                     | 25,0                            | 38,0                          | 37                                  | 380                              | 1,9                               | 290                              | 7,0                               |
| 50                                     | 2"                                     | 37,5                            | 25,0                          | 37                                  | 490                              | 2,4                               | 380                              | 7,0                               |
| 65                                     | 2 1/2"                                 | 6,0                             | 103,0                         | 53                                  | 230                              | 1,9                               | 150                              | 8,0                               |
| 65                                     | 2 1/2"                                 | 12,5                            | 62,0                          | 53                                  | 260                              | 2,0                               | 190                              | 8,0                               |
| 65                                     | 2 1/2"                                 | 25,0                            | 31,0                          | 53                                  | 380                              | 2,7                               | 280                              | 8,0                               |
| 65                                     | 2 1/2"                                 | 37,5                            | 21,0                          | 53                                  | 480                              | 3,0                               | 360                              | 9,0                               |
| 80                                     | 3"                                     | 6,0                             | 98,0                          | 77                                  | 240                              | 2,6                               | 170                              | 9,0                               |
| 80                                     | 3"                                     | 12,5                            | 59,0                          | 77                                  | 280                              | 2,9                               | 210                              | 10,0                              |
| 80                                     | 3"                                     | 25,0                            | 29,0                          | 77                                  | 370                              | 4,0                               | 300                              | 10,0                              |
| 80                                     | 3"                                     | 37,5                            | 20,0                          | 77                                  | 510                              | 5,0                               | 400                              | 11,0                              |
| 100                                    | 4"                                     | 12,5                            | 208,0                         | 123                                 | 260                              | 4,0                               | 200                              | 11,0                              |
| 100                                    | 4"                                     | 25,0                            | 112,0                         | 123                                 | 350                              | 5,0                               | 280                              | 12,0                              |
| 100                                    | 4"                                     | 37,5                            | 77,0                          | 123                                 | 450                              | 6,0                               | 350                              | 13,0                              |
| 100                                    | 4"                                     | 50,0                            | 63,0                          | 123                                 | 520                              | 7,0                               | 400                              | 13,0                              |
| 125                                    | 5"                                     | 12,5                            | 495,0                         | 182                                 | 260                              | 5,0                               | 210                              | 15,0                              |
| 125                                    | 5"                                     | 25,0                            | 266,0                         | 182                                 | 350                              | 7,0                               | 280                              | 16,0                              |
| 125                                    | 5"                                     | 37,5                            | 182,0                         | 182                                 | 450                              | 8,0                               | 360                              | 17,0                              |
| 125                                    | 5"                                     | 50,0                            | 151,0                         | 182                                 | 540                              | 10,0                              | 410                              | 18,0                              |
| 150                                    | 6"                                     | 12,5                            | 662,0                         | 257                                 | 270                              | 7,0                               | 220                              | 18,0                              |
| 150                                    | 6"                                     | 25,0                            | 356,0                         | 257                                 | 370                              | 9,0                               | 300                              | 20,0                              |
| 150                                    | 6"                                     | 37,5                            | 244,0                         | 257                                 | 470                              | 12,0                              | 380                              | 22,0                              |
| 150                                    | 6"                                     | 50,0                            | 201,0                         | 257                                 | 560                              | 14,0                              | 430                              | 23,0                              |
| 200                                    | 8"                                     | 12,5                            | 496,0                         | 431                                 | 270                              | 11,0                              | 240                              | 26,0                              |
| 200                                    | 8"                                     | 25,0                            | 315,0                         | 431                                 | 370                              | 14,0                              | 300                              | 28,0                              |
| 200                                    | 8"                                     | 37,5                            | 231,0                         | 431                                 | 440                              | 16,0                              | 350                              | 30,0                              |
| 200                                    | 8"                                     | 50,0                            | 183,0                         | 431                                 | 550                              | 20,0                              | 410                              | 31,0                              |
| 200                                    | 8"                                     | 62,5                            | 151,0                         | 431                                 | 670                              | 25,0                              | 470                              | 33,0                              |
| 250                                    | 10"                                    | 12,5                            | 727,0                         | 654                                 | 250                              | 13,0                              | 220                              | 33,0                              |
| 250                                    | 10"                                    | 25,0                            | 330,0                         | 654                                 | 380                              | 19,0                              | 320                              | 36,0                              |
| 250                                    | 10"                                    | 37,5                            | 242,0                         | 654                                 | 450                              | 22,0                              | 380                              | 39,0                              |
| 250                                    | 10"                                    | 50,0                            | 191,0                         | 654                                 | 570                              | 28,0                              | 440                              | 41,0                              |
| 250                                    | 10"                                    | 62,5                            | 173,0                         | 654                                 | 660                              | 33,0                              | 470                              | 42,0                              |
| 300                                    | 12"                                    | 12,5                            | 735,0                         | 910                                 | 250                              | 17,0                              | 230                              | 38,0                              |
| 300                                    | 12"                                    | 25,0                            | 334,0                         | 910                                 | 390                              | 24,0                              | 330                              | 42,0                              |
| 300                                    | 12"                                    | 37,5                            | 245,0                         | 910                                 | 470                              | 28,0                              | 400                              | 45,0                              |
| 300                                    | 12"                                    | 50,0                            | 193,0                         | 910                                 | 590                              | 34,0                              | 460                              | 48,0                              |
| 300                                    | 12"                                    | 62,5                            | 175,0                         | 910                                 | 680                              | 41,0                              | 500                              | 50,0                              |

**PN 10**

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Axiálny pohyb<br>Axial movement | Axiálna tuhosť<br>Spring rate | Efektívny prierez<br>Effective area | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight |
|---------------------------------------|---------------------------------------|---------------------------------|-------------------------------|-------------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|
| DN                                    | DN                                    | ± mm                            | N/mm                          | cm <sup>2</sup>                     | mm                               | kg                                | mm                               | kg                                |
| 350                                   | 14"                                   | 12,5                            | 607,0                         | 1 099                               | 260                              | 19,0                              | 150                              | 55,0                              |
| 350                                   | 14"                                   | 25,0                            | 276,0                         | 1 099                               | 400                              | 27,0                              | 260                              | 60,0                              |
| 350                                   | 14"                                   | 37,5                            | 202,0                         | 1 099                               | 480                              | 31,0                              | 330                              | 65,0                              |
| 350                                   | 14"                                   | 50,0                            | 160,0                         | 1 099                               | 600                              | 39,0                              | 400                              | 70,0                              |
| 350                                   | 14"                                   | 62,5                            | 145,0                         | 1 099                               | 700                              | 46,0                              | 440                              | 70,0                              |
| 400                                   | 16"                                   | 12,5                            | 1 123,0                       | 1 440                               | 290                              | 25,0                              | 190                              | 80,0                              |
| 400                                   | 16"                                   | 25,0                            | 802,0                         | 1 440                               | 380                              | 32,0                              | 240                              | 80,0                              |
| 400                                   | 16"                                   | 37,5                            | 624,0                         | 1 440                               | 430                              | 36,0                              | 290                              | 85,0                              |
| 400                                   | 16"                                   | 50,0                            | 432,0                         | 1 440                               | 580                              | 48,0                              | 380                              | 90,0                              |
| 400                                   | 16"                                   | 62,5                            | 374,0                         | 1 440                               | 690                              | 57,0                              | 430                              | 95,0                              |
| 500                                   | 20"                                   | 12,5                            | 1 237,0                       | 2 213                               | 290                              | 31,0                              | 210                              | 110,0                             |
| 500                                   | 20"                                   | 25,0                            | 884,0                         | 2 213                               | 380                              | 40,0                              | 250                              | 115,0                             |
| 500                                   | 20"                                   | 37,5                            | 687,0                         | 2 213                               | 430                              | 46,0                              | 300                              | 120,0                             |
| 500                                   | 20"                                   | 50,0                            | 476,0                         | 2 213                               | 580                              | 60,0                              | 400                              | 130,0                             |
| 500                                   | 20"                                   | 62,5                            | 412,0                         | 2 213                               | 690                              | 70,0                              | 440                              | 135,0                             |
| 600                                   | 24"                                   | 12,5                            | 1 318,0                       | 3 151                               | 290                              | 38,0                              | 210                              | 145,0                             |
| 600                                   | 24"                                   | 25,0                            | 942,0                         | 3 151                               | 380                              | 49,0                              | 260                              | 150,0                             |
| 600                                   | 24"                                   | 37,5                            | 732,0                         | 3 151                               | 430                              | 55,0                              | 300                              | 155,0                             |
| 600                                   | 24"                                   | 50,0                            | 507,0                         | 3 151                               | 580                              | 75,0                              | 400                              | 165,0                             |
| 600                                   | 24"                                   | 62,5                            | 439,0                         | 3 151                               | 690                              | 85,0                              | 450                              | 175,0                             |
| 700                                   | 28"                                   | 12,5                            | 2 062,0                       | 4 261                               | 290                              | 52,0                              | 210                              | 185,0                             |
| 700                                   | 28"                                   | 25,0                            | 1 473,0                       | 4 261                               | 380                              | 70,0                              | 260                              | 195,0                             |
| 700                                   | 28"                                   | 37,5                            | 1 145,0                       | 4 261                               | 440                              | 80,0                              | 310                              | 205,0                             |
| 700                                   | 28"                                   | 50,0                            | 793,0                         | 4 261                               | 590                              | 105,0                             | 410                              | 220,0                             |
| 700                                   | 28"                                   | 62,5                            | 687,0                         | 4 261                               | 700                              | 125,0                             | 460                              | 230,0                             |
| 800                                   | 32"                                   | 12,5                            | 2 114,0                       | 5 531                               | 290                              | 60,0                              | 220                              | 255,0                             |
| 800                                   | 32"                                   | 25,0                            | 1 510,0                       | 5 531                               | 380                              | 80,0                              | 270                              | 265,0                             |
| 800                                   | 32"                                   | 37,5                            | 1 174,0                       | 5 531                               | 440                              | 90,0                              | 320                              | 275,0                             |
| 800                                   | 32"                                   | 50,0                            | 813,0                         | 5 531                               | 590                              | 120,0                             | 420                              | 290,0                             |
| 800                                   | 32"                                   | 62,5                            | 705,0                         | 5 531                               | 700                              | 145,0                             | 470                              | 305,0                             |
| 900                                   | 36"                                   | 12,5                            | 2 143,0                       | 6 966                               | 290                              | 70,0                              | 230                              | 300,0                             |
| 900                                   | 36"                                   | 25,0                            | 1 531,0                       | 6 966                               | 380                              | 90,0                              | 280                              | 315,0                             |
| 900                                   | 36"                                   | 37,5                            | 1 191,0                       | 6 966                               | 440                              | 105,0                             | 330                              | 325,0                             |
| 900                                   | 36"                                   | 50,0                            | 824,0                         | 6 966                               | 590                              | 135,0                             | 430                              | 350,0                             |
| 900                                   | 36"                                   | 62,5                            | 714,0                         | 6 966                               | 700                              | 160,0                             | 480                              | 360,0                             |
| 1000                                  | 40"                                   | 12,5                            | 2 616,0                       | 8 596                               | 300                              | 85,0                              | 240                              | 380,0                             |
| 1000                                  | 40"                                   | 25,0                            | 1 868,0                       | 8 596                               | 390                              | 115,0                             | 290                              | 395,0                             |
| 1000                                  | 40"                                   | 37,5                            | 1 453,0                       | 8 596                               | 450                              | 135,0                             | 340                              | 415,0                             |
| 1000                                  | 40"                                   | 50,0                            | 1 006,0                       | 8 596                               | 600                              | 180,0                             | 440                              | 445,0                             |
| 1000                                  | 40"                                   | 62,5                            | 872,0                         | 8 596                               | 710                              | 210,0                             | 490                              | 465,0                             |
| 1100                                  | 44"                                   | 12,5                            | 2 622,0                       | 10 391                              | 300                              | 105,0                             | 240                              | 450,0                             |
| 1100                                  | 44"                                   | 25,0                            | 1 873,0                       | 10 391                              | 390                              | 140,0                             | 290                              | 470,0                             |
| 1100                                  | 44"                                   | 37,5                            | 1 457,0                       | 10 391                              | 450                              | 160,0                             | 340                              | 490,0                             |
| 1100                                  | 44"                                   | 50,0                            | 1 008,0                       | 10 391                              | 600                              | 215,0                             | 440                              | 525,0                             |
| 1100                                  | 44"                                   | 62,5                            | 874,0                         | 10 391                              | 710                              | 255,0                             | 500                              | 545,0                             |
| 1200                                  | 48"                                   | 12,5                            | 2 393,0                       | 12 315                              | 300                              | 120,0                             | 250                              | 530,0                             |
| 1200                                  | 48"                                   | 25,0                            | 1 709,0                       | 12 315                              | 390                              | 155,0                             | 300                              | 550,0                             |
| 1200                                  | 48"                                   | 37,5                            | 1 329,0                       | 12 315                              | 450                              | 180,0                             | 350                              | 570,0                             |
| 1200                                  | 48"                                   | 50,0                            | 920,0                         | 12 315                              | 600                              | 240,0                             | 450                              | 615,0                             |
| 1200                                  | 48"                                   | 62,5                            | 798,0                         | 12 315                              | 710                              | 285,0                             | 500                              | 635,0                             |
| 1300                                  | 52"                                   | 25,0                            | 2 041,0                       | 14 574                              | 290                              | 125,0                             | 240                              | 610,0                             |
| 1300                                  | 52"                                   | 37,5                            | 1 225,0                       | 14 574                              | 410                              | 175,0                             | 320                              | 640,0                             |
| 1300                                  | 52"                                   | 50,0                            | 875,0                         | 14 574                              | 590                              | 250,0                             | 410                              | 680,0                             |
| 1300                                  | 52"                                   | 62,5                            | 680,0                         | 14 574                              | 720                              | 305,0                             | 490                              | 715,0                             |
| 1300                                  | 52"                                   | 75,0                            | 557,0                         | 14 574                              | 850                              | 360,0                             | 570                              | 750,0                             |


**MWA**

**MFA**

PN 10

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Axiálny pohyb<br>Axial movement | Axiálna tuhosť<br>Spring rate | Efektívny prierez<br>Effective area |
|---------------------------------------|---------------------------------------|---------------------------------|-------------------------------|-------------------------------------|
| DN                                    | DN                                    | ± mm                            | N/mm                          | cm <sup>2</sup>                     |
| mm                                    | inch                                  |                                 |                               |                                     |
| 1400                                  | 56"                                   | 25,0                            | 2 191,0                       | 16 792                              |
| 1400                                  | 56"                                   | 37,5                            | 1 314,0                       | 16 792                              |
| 1400                                  | 56"                                   | 50,0                            | 939,0                         | 16 792                              |
| 1400                                  | 56"                                   | 62,5                            | 730,0                         | 16 792                              |
| 1400                                  | 56"                                   | 75,0                            | 597,0                         | 16 792                              |
| 1500                                  | 60"                                   | 25,0                            | 2 927,0                       | 19 187                              |
| 1500                                  | 60"                                   | 37,5                            | 1 756,0                       | 19 187                              |
| 1500                                  | 60"                                   | 50,0                            | 1 255,0                       | 19 187                              |
| 1500                                  | 60"                                   | 62,5                            | 976,0                         | 19 187                              |
| 1500                                  | 60"                                   | 75,0                            | 798,0                         | 19 187                              |
| 1600                                  | 64"                                   | 25,0                            | 3 115,0                       | 21 721                              |
| 1600                                  | 64"                                   | 37,5                            | 1 869,0                       | 21 721                              |
| 1600                                  | 64"                                   | 50,0                            | 1 335,0                       | 21 721                              |
| 1600                                  | 64"                                   | 62,5                            | 1 038,0                       | 21 721                              |
| 1600                                  | 64"                                   | 75,0                            | 849,0                         | 21 721                              |
| 1800                                  | 72"                                   | 25,0                            | 3 485,0                       | 27 201                              |
| 1800                                  | 72"                                   | 37,5                            | 2 091,0                       | 27 201                              |
| 1800                                  | 72"                                   | 50,0                            | 1 494,0                       | 27 201                              |
| 1800                                  | 72"                                   | 62,5                            | 1 162,0                       | 27 201                              |
| 1800                                  | 72"                                   | 75,0                            | 760,0                         | 27 177                              |
| 2000                                  | 80"                                   | 25,0                            | 3 860,0                       | 33 362                              |
| 2000                                  | 80"                                   | 37,5                            | 2 316,0                       | 33 362                              |
| 2000                                  | 80"                                   | 50,0                            | 1 654,0                       | 33 362                              |
| 2000                                  | 80"                                   | 62,5                            | 1 287,0                       | 33 362                              |
| 2000                                  | 80"                                   | 75,0                            | 1 053,0                       | 33 362                              |
| 2200                                  | 88"                                   | 25,0                            | 5 083,0                       | 40 179                              |
| 2200                                  | 88"                                   | 37,5                            | 3 050,0                       | 40 179                              |
| 2200                                  | 88"                                   | 50,0                            | 2 179,0                       | 40 179                              |
| 2200                                  | 88"                                   | 62,5                            | 1 694,0                       | 40 179                              |
| 2200                                  | 88"                                   | 75,0                            | 1 386,0                       | 40 179                              |
| 2400                                  | 96"                                   | 25,0                            | 5 533,0                       | 47 599                              |
| 2400                                  | 96"                                   | 37,5                            | 3 320,0                       | 47 599                              |
| 2400                                  | 96"                                   | 50,0                            | 2 371,0                       | 47 599                              |
| 2400                                  | 96"                                   | 62,5                            | 1 844,0                       | 47 599                              |
| 2400                                  | 96"                                   | 75,0                            | 1 509,0                       | 47 599                              |
| 2600                                  | 104"                                  | 25,0                            | 9 738,0                       | 55 655                              |
| 2600                                  | 104"                                  | 37,5                            | 5 843,0                       | 55 655                              |
| 2600                                  | 104"                                  | 50,0                            | 4 173,0                       | 55 655                              |
| 2600                                  | 104"                                  | 62,5                            | 3 246,0                       | 55 655                              |
| 2600                                  | 104"                                  | 75,0                            | 2 656,0                       | 55 655                              |
| 2800                                  | 112"                                  | 25,0                            | 10 469,0                      | 64 332                              |
| 2800                                  | 112"                                  | 37,5                            | 6 281,0                       | 64 332                              |
| 2800                                  | 112"                                  | 50,0                            | 4 487,0                       | 64 332                              |
| 2800                                  | 112"                                  | 62,5                            | 3 490,0                       | 64 332                              |
| 2800                                  | 112"                                  | 75,0                            | 2 855,0                       | 64 332                              |
| 3000                                  | 120"                                  | 25,0                            | 19 361,0                      | 73 686                              |
| 3000                                  | 120"                                  | 37,5                            | 11 617,0                      | 73 686                              |
| 3000                                  | 120"                                  | 50,0                            | 8 298,0                       | 73 686                              |
| 3000                                  | 120"                                  | 62,5                            | 6 454,0                       | 73 686                              |



MWA

Stavebná dĺžka  
Overall length

Približná hmotnosť  
App. weight

mm

kg

290

135,0

410

185,0

590

270,0

720

330,0

850

385,0

290

155,0

420

220,0

600

315,0

730

390,0

860

460,0

290

165,0

420

235,0

600

335,0

730

415,0

860

490,0

290

215,0

420

300,0

600

435,0

730

530,0

850

570,0

290

240,0

420

335,0

600

480,0

730

585,0

860

690,0

300

280,0

420

400,0

600

570,0

740

695,0

870

820,0

300

305,0

420

435,0

600

620,0

740

760,0

870

895,0

300

335,0

420

480,0

600

685,0

740

835,0

870

990,0

300

360,0

420

515,0

600

740,0

740

900,0

870

1 065,0



MFA

Stavebná dĺžka  
Overall length

Približná hmotnosť  
App. weight

mm

kg

250

720,0

330

755,0

410

795,0

490

835,0

570

870,0

260

865,0

340

910,0

420

960,0

510

1 010,0

590

1 060,0

260

1 010,0

340

1 060,0

430

1 115,0

510

1 165,0

590

1 215,0

270

1 220,0

360

1 280,0

440

1 340,0

520

1 395,0

590

1 400,0

290

1 500,0

370

1 565,0

450

1 630,0

530

1 695,0

620

1 760,0

300

1 925,0

380

2 005,0

470

2 090,0

550

2 170,0

640

2 250,0

310

2 295,0

400

2 385,0

480

2 475,0

560

2 565,0

650

2 650,0

320

2 635,0

410

2 735,0

490

2 835,0

580

2 935,0

660

3 035,0

340

3 170,0

420

3 275,0

500

3 385,0

590

3 490,0

670

3 600,0

# PN 16

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Axiálny pohyb<br>Axial movement | Axiálna tuhosť<br>Spring rate | Efektívny prierez<br>Effective area |
|---------------------------------------|---------------------------------------|---------------------------------|-------------------------------|-------------------------------------|
| DN                                    | DN                                    | ± mm                            | N/mm                          | cm <sup>2</sup>                     |
| mm                                    | inch                                  |                                 |                               |                                     |
| 25                                    | 1"                                    | 6,0                             | 65,0                          | 11                                  |
| 25                                    | 1"                                    | 12,5                            | 36,0                          | 11                                  |
| 25                                    | 1"                                    | 25,0                            | 18,0                          | 11                                  |
| 25                                    | 1"                                    | 37,5                            | 12,0                          | 11                                  |
| 32                                    | 1 ¼"                                  | 6,0                             | 61,0                          | 18                                  |
| 32                                    | 1 ¼"                                  | 12,5                            | 31,0                          | 18                                  |
| 32                                    | 1 ¼"                                  | 25,0                            | 15,0                          | 18                                  |
| 32                                    | 1 ¼"                                  | 37,5                            | 10,0                          | 18                                  |
| 40                                    | 1 ½"                                  | 6,0                             | 69,0                          | 22                                  |
| 40                                    | 1 ½"                                  | 12,5                            | 39,0                          | 22                                  |
| 40                                    | 1 ½"                                  | 25,0                            | 19,0                          | 22                                  |
| 40                                    | 1 ½"                                  | 37,5                            | 13,0                          | 22                                  |
| 50                                    | 2"                                    | 6,0                             | 153,0                         | 37                                  |
| 50                                    | 2"                                    | 12,5                            | 76,0                          | 37                                  |
| 50                                    | 2"                                    | 25,0                            | 38,0                          | 37                                  |
| 50                                    | 2"                                    | 37,5                            | 25,0                          | 37                                  |
| 65                                    | 2 ½"                                  | 6,0                             | 103,0                         | 53                                  |
| 65                                    | 2 ½"                                  | 12,5                            | 62,0                          | 53                                  |
| 65                                    | 2 ½"                                  | 25,0                            | 31,0                          | 53                                  |
| 65                                    | 2 ½"                                  | 37,5                            | 21,0                          | 53                                  |
| 80                                    | 3"                                    | 6,0                             | 98,0                          | 77                                  |
| 80                                    | 3"                                    | 12,5                            | 59,0                          | 77                                  |
| 80                                    | 3"                                    | 25,0                            | 29,0                          | 77                                  |
| 80                                    | 3"                                    | 37,5                            | 20,0                          | 77                                  |
| 100                                   | 4"                                    | 12,5                            | 313,0                         | 124                                 |
| 100                                   | 4"                                    | 25,0                            | 169,0                         | 124                                 |
| 100                                   | 4"                                    | 37,5                            | 115,0                         | 124                                 |
| 100                                   | 4"                                    | 50,0                            | 95,0                          | 124                                 |
| 125                                   | 5"                                    | 12,5                            | 744,0                         | 183                                 |
| 125                                   | 5"                                    | 25,0                            | 401,0                         | 183                                 |
| 125                                   | 5"                                    | 37,5                            | 274,0                         | 183                                 |
| 125                                   | 5"                                    | 50,0                            | 227,0                         | 183                                 |
| 150                                   | 6"                                    | 12,5                            | 996,0                         | 259                                 |
| 150                                   | 6"                                    | 25,0                            | 536,0                         | 259                                 |
| 150                                   | 6"                                    | 37,5                            | 367,0                         | 259                                 |
| 150                                   | 6"                                    | 50,0                            | 303,0                         | 259                                 |
| 200                                   | 8"                                    | 12,5                            | 745,0                         | 433                                 |
| 200                                   | 8"                                    | 25,0                            | 474,0                         | 433                                 |
| 200                                   | 8"                                    | 37,5                            | 348,0                         | 433                                 |
| 200                                   | 8"                                    | 50,0                            | 275,0                         | 433                                 |
| 200                                   | 8"                                    | 62,5                            | 227,0                         | 433                                 |
| 250                                   | 10"                                   | 12,5                            | 1 093,0                       | 657                                 |
| 250                                   | 10"                                   | 25,0                            | 497,0                         | 657                                 |
| 250                                   | 10"                                   | 37,5                            | 364,0                         | 657                                 |
| 250                                   | 10"                                   | 50,0                            | 288,0                         | 657                                 |
| 250                                   | 10"                                   | 62,5                            | 260,0                         | 657                                 |
| 300                                   | 12"                                   | 12,5                            | 1 105,0                       | 913                                 |
| 300                                   | 12"                                   | 25,0                            | 502,0                         | 913                                 |
| 300                                   | 12"                                   | 37,5                            | 368,0                         | 913                                 |
| 300                                   | 12"                                   | 50,0                            | 291,0                         | 913                                 |
| 300                                   | 12"                                   | 62,5                            | 263,0                         | 913                                 |



## MWA

Stavebná dĺžka  
Overall length

Približná hmotnosť  
App. weight

| mm  | kg   |
|-----|------|
| 150 | 0,4  |
| 200 | 0,5  |
| 330 | 0,8  |
| 470 | 1,1  |
| 150 | 0,5  |
| 220 | 0,7  |
| 350 | 1,1  |
| 470 | 1,5  |
| 200 | 0,8  |
| 220 | 0,8  |
| 340 | 1,3  |
| 470 | 1,7  |
| 220 | 1,2  |
| 250 | 1,4  |
| 380 | 2,1  |
| 490 | 2,6  |
| 230 | 2,0  |
| 260 | 2,1  |
| 380 | 2,9  |
| 480 | 4,0  |
| 240 | 2,7  |
| 280 | 3,0  |
| 370 | 4,0  |
| 510 | 5,0  |
| 260 | 4,0  |
| 360 | 6,0  |
| 450 | 7,0  |
| 520 | 8,0  |
| 260 | 6,0  |
| 360 | 8,0  |
| 460 | 10,0 |
| 550 | 12,0 |
| 270 | 8,0  |
| 380 | 11,0 |
| 480 | 15,0 |
| 580 | 17,0 |
| 280 | 12,0 |
| 380 | 17,0 |
| 450 | 20,0 |
| 560 | 25,0 |
| 680 | 30,0 |
| 250 | 15,0 |
| 390 | 23,0 |
| 460 | 27,0 |
| 580 | 33,0 |
| 670 | 39,0 |
| 260 | 19,0 |
| 400 | 28,0 |
| 480 | 33,0 |
| 600 | 41,0 |
| 690 | 48,0 |



## MFA

Stavebná dĺžka  
Overall length

Približná hmotnosť  
App. weight

| mm  | kg   |
|-----|------|
| 140 | 2,7  |
| 180 | 2,8  |
| 270 | 3,0  |
| 360 | 3,0  |
| 140 | 4,0  |
| 180 | 4,0  |
| 280 | 5,0  |
| 370 | 5,0  |
| 150 | 5,0  |
| 190 | 5,0  |
| 280 | 5,0  |
| 370 | 5,0  |
| 160 | 6,0  |
| 210 | 6,0  |
| 300 | 7,0  |
| 390 | 7,0  |
| 160 | 8,0  |
| 200 | 8,0  |
| 290 | 8,0  |
| 370 | 9,0  |
| 170 | 10,0 |
| 210 | 10,0 |
| 300 | 11,0 |
| 400 | 12,0 |
| 200 | 11,0 |
| 280 | 13,0 |
| 360 | 14,0 |
| 410 | 15,0 |
| 210 | 15,0 |
| 290 | 17,0 |
| 370 | 19,0 |
| 420 | 20,0 |
| 220 | 20,0 |
| 310 | 22,0 |
| 390 | 25,0 |
| 450 | 27,0 |
| 240 | 28,0 |
| 300 | 30,0 |
| 360 | 33,0 |
| 420 | 36,0 |
| 480 | 38,0 |
| 230 | 38,0 |
| 330 | 43,0 |
| 390 | 46,0 |
| 460 | 50,0 |
| 490 | 52,0 |
| 250 | 48,0 |
| 360 | 54,0 |
| 420 | 59,0 |
| 490 | 65,0 |
| 530 | 65,0 |

PN 16

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Axiálny pohyb<br>Axial movement | Axiálna tuhosť<br>Spring rate | Efektívny prierez<br>Effective area | MWA                              |                                   | MFA                              |                                   |
|---------------------------------------|---------------------------------------|---------------------------------|-------------------------------|-------------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|
| DN                                    | DN                                    |                                 |                               |                                     | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight |
| mm                                    | inch                                  | ± mm                            | N/mm                          | cm <sup>2</sup>                     | mm                               | kg                                | mm                               | kg                                |
| 350                                   | 14"                                   | 12,5                            | 912,0                         | 1 102                               | 260                              | 21,0                              | 160                              | 65,0                              |
| 350                                   | 14"                                   | 25,0                            | 415,0                         | 1 102                               | 410                              | 32,0                              | 270                              | 75,0                              |
| 350                                   | 14"                                   | 37,5                            | 304,0                         | 1 102                               | 490                              | 38,0                              | 340                              | 80,0                              |
| 350                                   | 14"                                   | 50,0                            | 240,0                         | 1 102                               | 620                              | 47,0                              | 420                              | 85,0                              |
| 350                                   | 14"                                   | 62,5                            | 217,0                         | 1 102                               | 710                              | 55,0                              | 450                              | 90,0                              |
| 400                                   | 16"                                   | 12,5                            | 1 687,0                       | 1 446                               | 290                              | 30,0                              | 200                              | 90,0                              |
| 400                                   | 16"                                   | 25,0                            | 1 205,0                       | 1 446                               | 380                              | 39,0                              | 250                              | 95,0                              |
| 400                                   | 16"                                   | 37,5                            | 937,0                         | 1 446                               | 440                              | 44,0                              | 300                              | 100,0                             |
| 400                                   | 16"                                   | 50,0                            | 649,0                         | 1 446                               | 590                              | 59,0                              | 390                              | 110,0                             |
| 400                                   | 16"                                   | 62,5                            | 562,0                         | 1 446                               | 700                              | 70,0                              | 440                              | 115,0                             |
| 500                                   | 20"                                   | 12,5                            | 1 858,0                       | 2 220                               | 290                              | 38,0                              | 210                              | 150,0                             |
| 500                                   | 20"                                   | 25,0                            | 1 327,0                       | 2 220                               | 380                              | 49,0                              | 260                              | 160,0                             |
| 500                                   | 20"                                   | 37,5                            | 1 032,0                       | 2 220                               | 440                              | 56,0                              | 310                              | 165,0                             |
| 500                                   | 20"                                   | 50,0                            | 715,0                         | 2 220                               | 590                              | 75,0                              | 410                              | 175,0                             |
| 500                                   | 20"                                   | 62,5                            | 619,0                         | 2 220                               | 700                              | 90,0                              | 460                              | 185,0                             |
| 600                                   | 24"                                   | 12,5                            | 1 980,0                       | 3 159                               | 290                              | 46,0                              | 220                              | 215,0                             |
| 600                                   | 24"                                   | 25,0                            | 1 414,0                       | 3 159                               | 380                              | 60,0                              | 270                              | 225,0                             |
| 600                                   | 24"                                   | 37,5                            | 1 100,0                       | 3 159                               | 440                              | 70,0                              | 320                              | 235,0                             |
| 600                                   | 24"                                   | 50,0                            | 761,0                         | 3 159                               | 590                              | 90,0                              | 410                              | 250,0                             |
| 600                                   | 24"                                   | 62,5                            | 660,0                         | 3 159                               | 700                              | 110,0                             | 460                              | 255,0                             |
| 700                                   | 28"                                   | 12,5                            | 2 752,0                       | 4 271                               | 300                              | 60,0                              | 230                              | 230,0                             |
| 700                                   | 28"                                   | 25,0                            | 1 966,0                       | 4 271                               | 390                              | 80,0                              | 280                              | 240,0                             |
| 700                                   | 28"                                   | 37,5                            | 1 529,0                       | 4 271                               | 450                              | 95,0                              | 330                              | 255,0                             |
| 700                                   | 28"                                   | 50,0                            | 1 058,0                       | 4 271                               | 600                              | 125,0                             | 430                              | 275,0                             |
| 700                                   | 28"                                   | 62,5                            | 917,0                         | 4 271                               | 710                              | 150,0                             | 480                              | 290,0                             |
| 800                                   | 32"                                   | 12,5                            | 2 821,0                       | 5 542                               | 300                              | 70,0                              | 240                              | 310,0                             |
| 800                                   | 32"                                   | 25,0                            | 2 015,0                       | 5 542                               | 390                              | 95,0                              | 290                              | 320,0                             |
| 800                                   | 32"                                   | 37,5                            | 1 567,0                       | 5 542                               | 450                              | 110,0                             | 340                              | 335,0                             |
| 800                                   | 32"                                   | 50,0                            | 1 085,0                       | 5 542                               | 600                              | 145,0                             | 440                              | 365,0                             |
| 800                                   | 32"                                   | 62,5                            | 940,0                         | 5 542                               | 710                              | 170,0                             | 490                              | 375,0                             |
| 900                                   | 36"                                   | 12,5                            | 2 860,0                       | 6 978                               | 300                              | 80,0                              | 250                              | 365,0                             |
| 900                                   | 36"                                   | 25,0                            | 2 043,0                       | 6 978                               | 390                              | 105,0                             | 300                              | 380,0                             |
| 900                                   | 36"                                   | 37,5                            | 1 589,0                       | 6 978                               | 450                              | 125,0                             | 350                              | 395,0                             |
| 900                                   | 36"                                   | 50,0                            | 1 100,0                       | 6 978                               | 600                              | 165,0                             | 450                              | 430,0                             |
| 900                                   | 36"                                   | 62,5                            | 953,0                         | 6 978                               | 710                              | 195,0                             | 500                              | 445,0                             |
| 1000                                  | 40"                                   | 12,5                            | 3 269,0                       | 8 593                               | 300                              | 110,0                             | 260                              | 510,0                             |
| 1000                                  | 40"                                   | 25,0                            | 2 335,0                       | 8 593                               | 390                              | 145,0                             | 310                              | 535,0                             |
| 1000                                  | 40"                                   | 37,5                            | 1 816,0                       | 8 593                               | 460                              | 170,0                             | 370                              | 555,0                             |
| 1000                                  | 40"                                   | 50,0                            | 1 257,0                       | 8 593                               | 610                              | 225,0                             | 470                              | 600,0                             |
| 1000                                  | 40"                                   | 62,5                            | 1 090,0                       | 8 593                               | 720                              | 265,0                             | 520                              | 620,0                             |
| 1100                                  | 44"                                   | 12,5                            | 3 280,0                       | 10 405                              | 300                              | 120,0                             | 250                              | 620,0                             |
| 1100                                  | 44"                                   | 25,0                            | 2 343,0                       | 10 405                              | 390                              | 160,0                             | 300                              | 645,0                             |
| 1100                                  | 44"                                   | 37,5                            | 1 822,0                       | 10 405                              | 460                              | 185,0                             | 350                              | 670,0                             |
| 1100                                  | 44"                                   | 50,0                            | 1 261,0                       | 10 405                              | 610                              | 255,0                             | 460                              | 715,0                             |
| 1100                                  | 44"                                   | 62,5                            | 1 093,0                       | 10 405                              | 720                              | 300,0                             | 510                              | 740,0                             |
| 1200                                  | 48"                                   | 12,5                            | 2 989,0                       | 12 301                              | 300                              | 150,0                             | 280                              | 750,0                             |
| 1200                                  | 48"                                   | 25,0                            | 2 135,0                       | 12 301                              | 390                              | 195,0                             | 330                              | 780,0                             |
| 1200                                  | 48"                                   | 37,5                            | 1 661,0                       | 12 301                              | 460                              | 230,0                             | 380                              | 805,0                             |
| 1200                                  | 48"                                   | 50,0                            | 1 150,0                       | 12 301                              | 610                              | 305,0                             | 490                              | 860,0                             |
| 1200                                  | 48"                                   | 87,5                            | 996,0                         | 12 301                              | 720                              | 360,0                             | 540                              | 890,0                             |
| 1300                                  | 52"                                   | 25,0                            | 3 062,0                       | 14 576                              | 300                              | 165,0                             | 250                              | 835,0                             |
| 1300                                  | 52"                                   | 37,5                            | 1 837,0                       | 14 576                              | 420                              | 240,0                             | 330                              | 885,0                             |
| 1300                                  | 52"                                   | 50,0                            | 1 312,0                       | 14 576                              | 600                              | 340,0                             | 420                              | 940,0                             |
| 1300                                  | 52"                                   | 62,5                            | 1 021,0                       | 14 576                              | 740                              | 415,0                             | 500                              | 990,0                             |

# PN 16

| Menovitá svetlost'<br>Nominal diametr | Menovitá svetlost'<br>Nominal diametr | Axiálny pohyb<br>Axial movement | Axiálna tuhosť<br>Spring rate | Efektívny prierez<br>Effective area |
|---------------------------------------|---------------------------------------|---------------------------------|-------------------------------|-------------------------------------|
| DN                                    | DN                                    | ± mm                            | N/mm                          | cm <sup>2</sup>                     |
| mm                                    | inch                                  |                                 |                               |                                     |
| 1400                                  | 56"                                   | 25,0                            | 3 808,0                       | 16 787                              |
| 1400                                  | 56"                                   | 37,5                            | 2 285,0                       | 16 787                              |
| 1400                                  | 56"                                   | 50,0                            | 1 632,0                       | 16 787                              |
| 1400                                  | 56"                                   | 62,5                            | 1 269,0                       | 16 787                              |
| 1500                                  | 60"                                   | 25,0                            | 4 068,0                       | 19 162                              |
| 1500                                  | 60"                                   | 37,5                            | 2 441,0                       | 19 162                              |
| 1500                                  | 60"                                   | 50,0                            | 1 744,0                       | 19 162                              |
| 1500                                  | 60"                                   | 60,0                            | 1 356,0                       | 19 162                              |
| 1600                                  | 64"                                   | 25,0                            | 6 080,0                       | 21 695                              |
| 1600                                  | 64"                                   | 37,5                            | 3 648,0                       | 21 695                              |
| 1600                                  | 64"                                   | 50,0                            | 2 606,0                       | 21 695                              |
| 1600                                  | 64"                                   | 62,5                            | 2 027,0                       | 21 695                              |
| 1800                                  | 72"                                   | 25,0                            | 6 804,0                       | 27 172                              |
| 1800                                  | 72"                                   | 37,5                            | 4 082,0                       | 27 172                              |
| 1800                                  | 72"                                   | 50,0                            | 2 916,0                       | 27 172                              |
| 1800                                  | 72"                                   | 62,5                            | 2 268,0                       | 27 172                              |
| 2000                                  | 80"                                   | 25,0                            | 13 028,0                      | 33 362                              |
| 2000                                  | 80"                                   | 37,5                            | 7 817,0                       | 33 362                              |
| 2000                                  | 80"                                   | 50,0                            | 5 583,0                       | 33 362                              |
| 2000                                  | 80"                                   | 62,5                            | 4 343,0                       | 33 362                              |



## MWA

Stavebná dĺžka  
Overall length

Približná hmotnosť  
App. weight

mm kg

290 190,0  
420 265,0  
600 380,0  
730 470,0

290 200,0  
420 285,0  
600 410,0  
730 500,0

300 215,0  
420 305,0  
600 440,0  
740 535,0

300 270,0  
420 380,0  
600 545,0  
740 665,0

300 320,0  
420 455,0  
610 655,0  
750 800,0



## MFA

Stavebná dĺžka  
Overall length

Približná hmotnosť  
App. weight

mm kg

280 940,0  
360 995,0  
450 1 055,0  
530 1 110,0

260 1 120,0  
340 1 180,0  
420 1 245,0  
510 1 305,0

300 1 360,0  
380 1 425,0  
470 1 490,0  
550 1 555,0

310 1 615,0  
400 1 690,0  
480 1 765,0  
560 1 835,0

330 2 005,0  
410 2 100,0  
500 2 195,0  
580 2 290,0

PN 25

| Menovitá svetlost'<br>Nominal diametr | Menovitá svetlost'<br>Nominal diametr | Axiálny pohyb<br>Axial movement | Axiálna tuhosť<br>Spring rate | Efektívny prierez<br>Effective area | MWA                              |                                   | MFA                              |                                   |
|---------------------------------------|---------------------------------------|---------------------------------|-------------------------------|-------------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|
| DN                                    | DN                                    |                                 |                               |                                     | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight |
| mm                                    | inch                                  | ± mm                            | N/mm                          | cm <sup>2</sup>                     | mm                               | kg                                | mm                               | kg                                |
| 25                                    | 1"                                    | 6,0                             | 65,0                          | 11                                  | 150                              | 0,4                               | 140                              | 3,0                               |
| 25                                    | 1"                                    | 12,5                            | 36,0                          | 11                                  | 200                              | 0,5                               | 180                              | 3,0                               |
| 25                                    | 1"                                    | 25,0                            | 18,0                          | 11                                  | 330                              | 0,8                               | 270                              | 3,0                               |
| 25                                    | 1"                                    | 37,5                            | 12,0                          | 11                                  | 470                              | 1,1                               | 360                              | 4,0                               |
| 32                                    | 1 ¼"                                  | 6,0                             | 61,0                          | 18                                  | 150                              | 0,5                               | 140                              | 5,0                               |
| 32                                    | 1 ¼"                                  | 12,5                            | 31,0                          | 18                                  | 220                              | 0,7                               | 190                              | 5,0                               |
| 32                                    | 1 ¼"                                  | 25,0                            | 15,0                          | 18                                  | 350                              | 1,1                               | 280                              | 5,0                               |
| 32                                    | 1 ¼"                                  | 37,5                            | 10,0                          | 18                                  | 470                              | 1,5                               | 380                              | 5,0                               |
| 40                                    | 1 ½"                                  | 6,0                             | 69,0                          | 22                                  | 200                              | 0,8                               | 150                              | 5,0                               |
| 40                                    | 1 ½"                                  | 12,5                            | 39,0                          | 22                                  | 220                              | 0,8                               | 190                              | 5,0                               |
| 40                                    | 1 ½"                                  | 25,0                            | 19,0                          | 22                                  | 340                              | 1,3                               | 280                              | 6,0                               |
| 40                                    | 1 ½"                                  | 37,5                            | 13,0                          | 22                                  | 470                              | 1,7                               | 370                              | 6,0                               |
| 50                                    | 2"                                    | 6,0                             | 153,0                         | 37                                  | 220                              | 1,2                               | 170                              | 7,0                               |
| 50                                    | 2"                                    | 12,5                            | 76,0                          | 37                                  | 250                              | 1,4                               | 210                              | 7,0                               |
| 50                                    | 2"                                    | 25,0                            | 38,0                          | 37                                  | 380                              | 2,1                               | 310                              | 8,0                               |
| 50                                    | 2"                                    | 37,5                            | 25,0                          | 37                                  | 490                              | 2,6                               | 400                              | 8,0                               |
| 65                                    | 2 ½"                                  | 6,0                             | 103,0                         | 53                                  | 230                              | 2,0                               | 180                              | 9,0                               |
| 65                                    | 2 ½"                                  | 12,5                            | 62,0                          | 53                                  | 260                              | 2,1                               | 210                              | 9,0                               |
| 65                                    | 2 ½"                                  | 25,0                            | 31,0                          | 53                                  | 380                              | 2,9                               | 300                              | 10,0                              |
| 65                                    | 2 ½"                                  | 37,5                            | 21,0                          | 53                                  | 480                              | 4,0                               | 390                              | 11,0                              |
| 80                                    | 3"                                    | 6,0                             | 148,0                         | 77                                  | 240                              | 2,9                               | 190                              | 12,0                              |
| 80                                    | 3"                                    | 12,5                            | 89,0                          | 77                                  | 280                              | 3,0                               | 230                              | 12,0                              |
| 80                                    | 3"                                    | 25,0                            | 44,0                          | 77                                  | 380                              | 4,0                               | 330                              | 13,0                              |
| 80                                    | 3"                                    | 37,5                            | 30,0                          | 77                                  | 520                              | 6,0                               | 430                              | 14,0                              |
| 100                                   | 4"                                    | 12,5                            | 419,0                         | 125                                 | 260                              | 5,0                               | 230                              | 16,0                              |
| 100                                   | 4"                                    | 25,0                            | 226,0                         | 125                                 | 360                              | 6,0                               | 310                              | 17,0                              |
| 100                                   | 4"                                    | 37,5                            | 154,0                         | 125                                 | 460                              | 8,0                               | 390                              | 19,0                              |
| 100                                   | 4"                                    | 50,0                            | 128,0                         | 125                                 | 530                              | 9,0                               | 440                              | 20,0                              |
| 125                                   | 5"                                    | 12,5                            | 996,0                         | 184                                 | 270                              | 6,0                               | 240                              | 22,0                              |
| 125                                   | 5"                                    | 25,0                            | 536,0                         | 184                                 | 370                              | 9,0                               | 320                              | 24,0                              |
| 125                                   | 5"                                    | 37,5                            | 367,0                         | 184                                 | 470                              | 11,0                              | 400                              | 26,0                              |
| 125                                   | 5"                                    | 50,0                            | 303,0                         | 184                                 | 560                              | 14,0                              | 460                              | 28,0                              |
| 150                                   | 6"                                    | 12,5                            | 1 332,0                       | 261                                 | 270                              | 9,0                               | 260                              | 28,0                              |
| 150                                   | 6"                                    | 25,0                            | 717,0                         | 261                                 | 380                              | 13,0                              | 350                              | 32,0                              |
| 150                                   | 6"                                    | 37,5                            | 491,0                         | 261                                 | 490                              | 17,0                              | 440                              | 35,0                              |
| 150                                   | 6"                                    | 50,0                            | 405,0                         | 261                                 | 590                              | 20,0                              | 500                              | 37,0                              |
| 200                                   | 8"                                    | 12,5                            | 996,0                         | 435                                 | 280                              | 14,0                              | 280                              | 40,0                              |
| 200                                   | 8"                                    | 25,0                            | 634,0                         | 435                                 | 380                              | 19,0                              | 340                              | 44,0                              |
| 200                                   | 8"                                    | 37,5                            | 465,0                         | 435                                 | 460                              | 22,0                              | 410                              | 47,0                              |
| 200                                   | 8"                                    | 50,0                            | 367,0                         | 435                                 | 570                              | 28,0                              | 470                              | 50,0                              |
| 200                                   | 8"                                    | 62,5                            | 303,0                         | 435                                 | 690                              | 34,0                              | 530                              | 54,0                              |
| 250                                   | 10"                                   | 12,5                            | 1 460,0                       | 660                                 | 250                              | 16,0                              | 270                              | 54,0                              |
| 250                                   | 10"                                   | 25,0                            | 664,0                         | 660                                 | 400                              | 25,0                              | 370                              | 60,0                              |
| 250                                   | 10"                                   | 37,5                            | 487,0                         | 660                                 | 470                              | 30,0                              | 440                              | 65,0                              |
| 250                                   | 10"                                   | 50,0                            | 384,0                         | 660                                 | 590                              | 38,0                              | 510                              | 70,0                              |
| 300                                   | 12"                                   | 12,5                            | 1 475,0                       | 916                                 | 260                              | 20,0                              | 170                              | 70,0                              |
| 300                                   | 12"                                   | 25,0                            | 671,0                         | 916                                 | 410                              | 31,0                              | 270                              | 80,0                              |
| 300                                   | 12"                                   | 37,5                            | 492,0                         | 916                                 | 490                              | 37,0                              | 350                              | 85,0                              |
| 300                                   | 12"                                   | 50,0                            | 388,0                         | 916                                 | 610                              | 47,0                              | 420                              | 90,0                              |
| 350                                   | 14"                                   | 12,5                            | 1 218,0                       | 1 106                               | 260                              | 23,0                              | 180                              | 105,0                             |
| 350                                   | 14"                                   | 25,0                            | 554,0                         | 1 106                               | 420                              | 36,0                              | 290                              | 115,0                             |
| 350                                   | 14"                                   | 37,5                            | 406,0                         | 1 106                               | 500                              | 43,0                              | 370                              | 120,0                             |
| 350                                   | 14"                                   | 50,0                            | 321,0                         | 1 106                               | 630                              | 54,0                              | 440                              | 130,0                             |

PN 25

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Axiálny pohyb<br>Axial movement | Axiálna tuhosť<br>Spring rate | Efektívny prierez<br>Effective area |
|---------------------------------------|---------------------------------------|---------------------------------|-------------------------------|-------------------------------------|
| DN                                    | DN                                    | ± mm                            | N/mm                          | cm <sup>2</sup>                     |
| mm                                    | inch                                  |                                 |                               |                                     |
| 400                                   | 16"                                   | 12,5                            | 2 254,0                       | 1 451                               |
| 400                                   | 16"                                   | 25,0                            | 1 610,0                       | 1 451                               |
| 400                                   | 16"                                   | 37,5                            | 1 252,0                       | 1 451                               |
| 400                                   | 16"                                   | 50,0                            | 867,0                         | 1 451                               |
| 500                                   | 20"                                   | 12,5                            | 2 482,0                       | 2 227                               |
| 500                                   | 20"                                   | 25,0                            | 1 773,0                       | 2 227                               |
| 500                                   | 20"                                   | 37,5                            | 1 379,0                       | 2 227                               |
| 500                                   | 20"                                   | 50,0                            | 954,0                         | 2 227                               |
| 600                                   | 24"                                   | 12,5                            | 2 643,0                       | 3 167                               |
| 600                                   | 24"                                   | 25,0                            | 1 888,0                       | 3 167                               |
| 600                                   | 24"                                   | 37,5                            | 1 468,0                       | 3 167                               |
| 600                                   | 24"                                   | 50,0                            | 1 017,0                       | 3 167                               |
| 700                                   | 28"                                   | 12,5                            | 4 131,0                       | 4 278                               |
| 700                                   | 28"                                   | 25,0                            | 2 951,0                       | 4 278                               |
| 700                                   | 28"                                   | 37,5                            | 2 295,0                       | 4 278                               |
| 700                                   | 28"                                   | 50,0                            | 1 589,0                       | 4 278                               |
| 800                                   | 32"                                   | 12,5                            | 4 235,0                       | 5 550                               |
| 800                                   | 32"                                   | 25,0                            | 3 025,0                       | 5 550                               |
| 800                                   | 32"                                   | 37,5                            | 2 353,0                       | 5 550                               |
| 800                                   | 32"                                   | 50,0                            | 1 629,0                       | 5 550                               |
| 900                                   | 36"                                   | 12,5                            | 4 286,0                       | 6 965                               |
| 900                                   | 36"                                   | 25,0                            | 3 061,0                       | 6 965                               |
| 900                                   | 36"                                   | 37,5                            | 2 381,0                       | 6 965                               |
| 900                                   | 36"                                   | 50,0                            | 1 648,0                       | 6 965                               |
| 1000                                  | 40"                                   | 12,5                            | 4 575,0                       | 8 587                               |
| 1000                                  | 40"                                   | 25,0                            | 3 268,0                       | 8 587                               |
| 1000                                  | 40"                                   | 37,5                            | 2 541,0                       | 8 587                               |
| 1000                                  | 40"                                   | 50,0                            | 1 759,0                       | 8 587                               |
| 1100                                  | 44"                                   | 12,5                            | 4 590,0                       | 10 398                              |
| 1100                                  | 44"                                   | 25,0                            | 3 279,0                       | 10 398                              |
| 1100                                  | 44"                                   | 37,5                            | 2 550,0                       | 10 398                              |
| 1100                                  | 44"                                   | 50,0                            | 1 765,0                       | 10 398                              |
| 1200                                  | 48"                                   | 12,5                            | 4 182,0                       | 12 284                              |
| 1200                                  | 48"                                   | 25,0                            | 2 987,0                       | 12 284                              |
| 1200                                  | 48"                                   | 37,5                            | 2 323,0                       | 12 284                              |
| 1200                                  | 48"                                   | 50,0                            | 1 608,0                       | 12 284                              |
| 1300                                  | 52"                                   | 25,0                            | 10 333,0                      | 14 574                              |
| 1300                                  | 52"                                   | 37,5                            | 6 200,0                       | 14 574                              |
| 1300                                  | 52"                                   | 50,0                            | 4 428,0                       | 14 574                              |
| 1400                                  | 56"                                   | 25,0                            | 11 072,0                      | 16 735                              |
| 1400                                  | 56"                                   | 37,5                            | 6 643,0                       | 16 735                              |
| 1400                                  | 56"                                   | 50,0                            | 4 745,0                       | 16 735                              |
| 1500                                  | 60"                                   | 25,0                            | 11 831,0                      | 19 106                              |
| 1500                                  | 60"                                   | 37,5                            | 7 098,0                       | 19 106                              |
| 1500                                  | 60"                                   | 50,0                            | 5 070,0                       | 19 106                              |
| 1600                                  | 64"                                   | 25,0                            | 12 570,0                      | 21 569                              |
| 1600                                  | 64"                                   | 37,5                            | 7 542,0                       | 21 569                              |
| 1600                                  | 64"                                   | 50,0                            | 5 387,0                       | 21 569                              |
| 1800                                  | 72"                                   | 25,0                            | 14 087,0                      | 27 090                              |
| 1800                                  | 72"                                   | 37,5                            | 8 452,0                       | 27 090                              |
| 1800                                  | 72"                                   | 50,0                            | 6 037,0                       | 27 090                              |
| 1800                                  | 72"                                   | 75,0                            | 3 842,0                       | 27 090                              |
| 2000                                  | 80"                                   | 25,0                            | 15 604,0                      | 33 239                              |
| 2000                                  | 80"                                   | 37,5                            | 9 363,0                       | 33 239                              |
| 2000                                  | 80"                                   | 50,0                            | 6 688,0                       | 33 239                              |



MWA



MFA

| Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight |
|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|
| mm                               | kg                                | mm                               | kg                                |
| 300                              | 33,0                              | 220                              | 140,0                             |
| 390                              | 43,0                              | 270                              | 145,0                             |
| 450                              | 50,0                              | 320                              | 150,0                             |
| 600                              | 65,0                              | 420                              | 165,0                             |
| 300                              | 42,0                              | 230                              | 190,0                             |
| 390                              | 55,0                              | 280                              | 200,0                             |
| 450                              | 65,0                              | 330                              | 205,0                             |
| 600                              | 85,0                              | 430                              | 220,0                             |
| 300                              | 51,0                              | 240                              | 265,0                             |
| 390                              | 65,0                              | 290                              | 275,0                             |
| 450                              | 80,0                              | 340                              | 285,0                             |
| 600                              | 105,0                             | 440                              | 305,0                             |
| 310                              | 80,0                              | 250                              | 345,0                             |
| 400                              | 105,0                             | 300                              | 360,0                             |
| 460                              | 120,0                             | 360                              | 375,0                             |
| 620                              | 165,0                             | 470                              | 410,0                             |
| 310                              | 90,0                              | 260                              | 455,0                             |
| 400                              | 120,0                             | 310                              | 470,0                             |
| 460                              | 140,0                             | 370                              | 490,0                             |
| 620                              | 190,0                             | 470                              | 530,0                             |
| 310                              | 115,0                             | 270                              | 550,0                             |
| 400                              | 150,0                             | 320                              | 570,0                             |
| 460                              | 175,0                             | 380                              | 590,0                             |
| 620                              | 235,0                             | 490                              | 635,0                             |
| 310                              | 145,0                             | 290                              | 750,0                             |
| 410                              | 190,0                             | 340                              | 775,0                             |
| 470                              | 225,0                             | 400                              | 805,0                             |
| 630                              | 300,0                             | 510                              | 865,0                             |
| 310                              | 160,0                             |                                  |                                   |
| 410                              | 210,0                             |                                  |                                   |
| 470                              | 250,0                             |                                  |                                   |
| 630                              | 335,0                             |                                  |                                   |
| 310                              | 200,0                             | 300                              | 1 000,0                           |
| 410                              | 260,0                             | 360                              | 1 035,0                           |
| 470                              | 305,0                             | 410                              | 1 070,0                           |
| 630                              | 405,0                             | 520                              | 1 145,0                           |
| 300                              | 230,0                             |                                  |                                   |
| 430                              | 335,0                             |                                  |                                   |
| 620                              | 475,0                             |                                  |                                   |
| 300                              | 275,0                             | 310                              | 1 400,0                           |
| 430                              | 395,0                             | 400                              | 1 480,0                           |
| 620                              | 560,0                             | 490                              | 1 565,0                           |
| 300                              | 295,0                             |                                  |                                   |
| 430                              | 420,0                             |                                  |                                   |
| 620                              | 605,0                             |                                  |                                   |
| 300                              | 350,0                             | 330                              | 1 850,0                           |
| 430                              | 490,0                             | 420                              | 1 940,0                           |
| 620                              | 700,0                             | 510                              | 2 035,0                           |
| 300                              | 390,0                             | 350                              | 2 275,0                           |
| 430                              | 550,0                             | 440                              | 2 380,0                           |
| 620                              | 790,0                             | 530                              | 2 485,0                           |
| 890                              | 1 130,0                           | 700                              | 2 690,0                           |
| 300                              | 435,0                             | 360                              | 2 930,0                           |
| 430                              | 610,0                             | 450                              | 3 045,0                           |
| 620                              | 875,0                             | 540                              | 3 165,0                           |

**PN 40**

| Menovitá svetlost'<br>Nominal diametr | Menovitá svetlost'<br>Nominal diametr | Axiálny pohyb<br>Axial movement | Axiálna tuhosť<br>Spring rate | Efektívny prierez<br>Effective area | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight |
|---------------------------------------|---------------------------------------|---------------------------------|-------------------------------|-------------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|
| DN                                    | DN                                    | ± mm                            | N/mm                          | cm <sup>2</sup>                     | mm                               | kg                                | mm                               | kg                                |
| mm                                    | inch                                  |                                 |                               |                                     |                                  |                                   |                                  |                                   |
| 32                                    | 1 ¼"                                  | 6,0                             | 92,0                          | 18                                  | 160                              | 0,6                               | 150                              | 5,0                               |
| 32                                    | 1 ¼"                                  | 12,5                            | 46,0                          | 18                                  | 230                              | 0,8                               | 200                              | 5,0                               |
| 32                                    | 1 ¼"                                  | 25,0                            | 23,0                          | 18                                  | 360                              | 1,4                               | 290                              | 5,0                               |
| 40                                    | 1 ½"                                  | 6,0                             | 104,0                         | 22                                  | 210                              | 0,9                               | 160                              | 5,0                               |
| 40                                    | 1 ½"                                  | 12,5                            | 58,0                          | 22                                  | 230                              | 1,0                               | 200                              | 6,0                               |
| 40                                    | 1 ½"                                  | 25,0                            | 29,0                          | 22                                  | 360                              | 1,5                               | 300                              | 6,0                               |
| 50                                    | 1"                                    | 6,0                             | 230,0                         | 37                                  | 230                              | 1,4                               | 160                              | 7,0                               |
| 50                                    | 1"                                    | 12,5                            | 115,0                         | 37                                  | 260                              | 1,6                               | 210                              | 7,0                               |
| 50                                    | 1"                                    | 25,0                            | 58,0                          | 37                                  | 390                              | 2,5                               | 310                              | 8,0                               |
| 65                                    | 2 ½"                                  | 6,0                             | 207,0                         | 54                                  | 240                              | 2,3                               | 180                              | 10,0                              |
| 65                                    | 2 ½"                                  | 12,5                            | 124,0                         | 54                                  | 270                              | 2,6                               | 210                              | 10,0                              |
| 65                                    | 2 ½"                                  | 25,0                            | 62,0                          | 54                                  | 390                              | 4,0                               | 310                              | 11,0                              |
| 80                                    | 3"                                    | 6,0                             | 197,0                         | 78                                  | 250                              | 3,0                               | 190                              | 12,0                              |
| 80                                    | 3"                                    | 12,5                            | 118,0                         | 78                                  | 290                              | 4,0                               | 240                              | 12,0                              |
| 80                                    | 3"                                    | 25,0                            | 59,0                          | 78                                  | 390                              | 5,0                               | 340                              | 14,0                              |
| 80                                    | 3"                                    | 37,5                            | 39,0                          | 78                                  | 540                              | 7,0                               | 440                              | 16,0                              |
| 100                                   | 4"                                    | 12,5                            | 526,0                         | 125                                 | 270                              | 5,0                               | 240                              | 17,0                              |
| 100                                   | 4"                                    | 25,0                            | 283,0                         | 125                                 | 370                              | 8,0                               | 320                              | 19,0                              |
| 100                                   | 4"                                    | 37,5                            | 194,0                         | 125                                 | 470                              | 10,0                              | 400                              | 21,0                              |
| 125                                   | 5"                                    | 12,5                            | 1 249,0                       | 185                                 | 270                              | 7,0                               | 250                              | 23,0                              |
| 125                                   | 5"                                    | 25,0                            | 672,0                         | 185                                 | 380                              | 11,0                              | 330                              | 26,0                              |
| 125                                   | 5"                                    | 37,5                            | 460,0                         | 185                                 | 480                              | 14,0                              | 420                              | 29,0                              |
| 150                                   | 6"                                    | 12,5                            | 1 671,0                       | 262                                 | 280                              | 11,0                              | 270                              | 30,0                              |
| 150                                   | 6"                                    | 25,0                            | 900,0                         | 262                                 | 400                              | 15,0                              | 370                              | 34,0                              |
| 150                                   | 6"                                    | 37,5                            | 616,0                         | 262                                 | 510                              | 20,0                              | 460                              | 38,0                              |
| 200                                   | 8"                                    | 12,5                            | 1 249,0                       | 437                                 | 290                              | 16,0                              | 310                              | 52,0                              |
| 200                                   | 8"                                    | 25,0                            | 795,0                         | 437                                 | 400                              | 22,0                              | 370                              | 57,0                              |
| 200                                   | 8"                                    | 37,5                            | 583,0                         | 437                                 | 470                              | 26,0                              | 440                              | 60,0                              |
| 250                                   | 10"                                   | 12,5                            | 1 829,0                       | 662                                 | 260                              | 18,0                              | 310                              | 75,0                              |
| 250                                   | 10"                                   | 25,0                            | 831,0                         | 662                                 | 410                              | 30,0                              | 420                              | 85,0                              |
| 250                                   | 10"                                   | 37,5                            | 610,0                         | 662                                 | 490                              | 36,0                              | 490                              | 90,0                              |
| 300                                   | 12"                                   | 12,5                            | 2 123,0                       | 922                                 | 270                              | 26,0                              | 190                              | 105,0                             |
| 300                                   | 12"                                   | 25,0                            | 965,0                         | 922                                 | 420                              | 42,0                              | 310                              | 120,0                             |
| 300                                   | 12"                                   | 37,5                            | 708,0                         | 922                                 | 510                              | 52,0                              | 380                              | 130,0                             |
| 350                                   | 14"                                   | 12,5                            | 1 750,0                       | 1 110                               | 280                              | 31,0                              | 210                              | 150,0                             |
| 350                                   | 14"                                   | 25,0                            | 795,0                         | 1 110                               | 430                              | 50,0                              | 330                              | 165,0                             |
| 350                                   | 14"                                   | 37,5                            | 583,0                         | 1 110                               | 520                              | 60,0                              | 410                              | 175,0                             |
| 400                                   | 16"                                   | 12,5                            | 2 812,0                       | 1 446                               | 310                              | 43,0                              | 250                              | 210,0                             |
| 400                                   | 16"                                   | 25,0                            | 2 008,0                       | 1 446                               | 400                              | 56,0                              | 300                              | 220,0                             |
| 400                                   | 16"                                   | 37,5                            | 1 562,0                       | 1 446                               | 460                              | 65,0                              | 350                              | 225,0                             |
| 500                                   | 20"                                   | 12,5                            | 3 714,0                       | 2 217                               | 310                              | 65,0                              | 260                              | 255,0                             |
| 500                                   | 20"                                   | 25,0                            | 2 653,0                       | 2 217                               | 410                              | 80,0                              | 310                              | 270,0                             |
| 500                                   | 20"                                   | 37,5                            | 2 064,0                       | 2 217                               | 470                              | 95,0                              | 360                              | 280,0                             |
| 600                                   | 24"                                   | 12,5                            | 3 950,0                       | 3 144                               | 310                              | 80,0                              | 260                              | 355,0                             |
| 600                                   | 24"                                   | 25,0                            | 2 821,0                       | 3 144                               | 410                              | 105,0                             | 310                              | 370,0                             |
| 600                                   | 24"                                   | 37,5                            | 2 194,0                       | 3 144                               | 470                              | 125,0                             | 370                              | 385,0                             |
| 700                                   | 28"                                   | 12,5                            | 7 382,0                       | 4 243                               | 310                              | 110,0                             | 270                              | 445,0                             |
| 700                                   | 28"                                   | 25,0                            | 5 273,0                       | 4 243                               | 410                              | 145,0                             | 320                              | 465,0                             |
| 700                                   | 28"                                   | 37,5                            | 4 101,0                       | 4 243                               | 470                              | 170,0                             | 380                              | 485,0                             |


**MWA**

**MFA**

**PN 40**

| Menovitá svetlost'<br>Nominal diameter | Menovitá svetlost'<br>Nominal diameter | Axiálny pohyb<br>Axial movement | Axiálna tuhosť<br>Spring rate | Efektívny prierez<br>Effective area |
|----------------------------------------|----------------------------------------|---------------------------------|-------------------------------|-------------------------------------|
| DN<br>mm                               | DN<br>inch                             | ± mm                            | N/mm                          | cm <sup>2</sup>                     |
| 800                                    | 32"                                    | 12,5                            | 7 572,0                       | 5 510                               |
| 800                                    | 32"                                    | 25,0                            | 5 409,0                       | 5 510                               |
| 800                                    | 32"                                    | 37,5                            | 4 207,0                       | 5 510                               |
| 900                                    | 36"                                    | 12,5                            | 7 678,0                       | 6 943                               |
| 900                                    | 36"                                    | 25,0                            | 5 484,0                       | 6 943                               |
| 900                                    | 36"                                    | 37,5                            | 4 265,0                       | 6 943                               |
| 1000                                   | 40"                                    | 12,5                            | 13 197,0                      | 8 539                               |
| 1000                                   | 40"                                    | 25,0                            | 9 426,0                       | 8 539                               |
| 1000                                   | 40"                                    | 37,5                            | 7 331,0                       | 8 539                               |
| 1100                                   | 44"                                    | 12,5                            | 13 245,0                      | 10 345                              |
| 1100                                   | 44"                                    | 25,0                            | 9 460,0                       | 10 345                              |
| 1100                                   | 44"                                    | 37,5                            | 7 358,0                       | 10 345                              |
| 1200                                   | 48"                                    | 12,5                            | 12 088,0                      | 12 266                              |
| 1200                                   | 48"                                    | 25,0                            | 8 634,0                       | 12 266                              |
| 1200                                   | 48"                                    | 37,5                            | 6 716,0                       | 12 266                              |



**MWA**

Stavebná dĺžka  
Overall length

Približná hmotnosť  
App. weight

mm

kg

310 130,0  
410 170,0  
470 195,0

310 145,0  
410 190,0  
470 225,0

320 205,0  
420 265,0  
490 310,0

320 230,0  
420 300,0  
490 345,0

320 255,0  
420 330,0  
490 385,0



**MFA**

Stavebná dĺžka  
Overall length

Približná hmotnosť  
App. weight

mm

kg

280 630,0  
330 655,0  
390 675,0

290 780,0  
350 805,0  
400 830,0

320 985,0  
380 1 025,0  
430 1 060,0

320 230,0  
420 300,0  
490 345,0

340 1 340,0  
400 1 390,0  
450 1 435,0

# KÍBOVÉ KOMPENZÁTORY

Kíbové kompenzátory sú dvoch typov:

- a) s jednou osou otáčania (MWP)
- b) s priestorovou výchylkou - kardanový kíb (MWC)

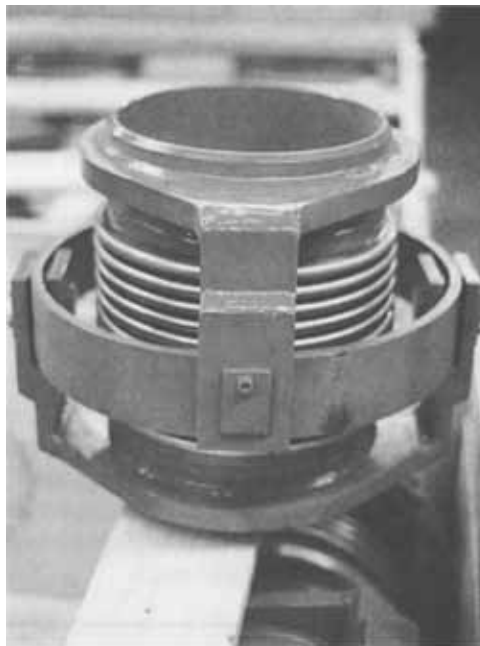
Kíbové kompenzátory sú obyčajne používané v usporiadaní po 2 až 3 kusy. Pri jednoosých kíbových kompenzátoroch ich natáčanie (uhlové výchylky) umožňuje vyrovnávať priečne posuvy rovinných útvarov potrubia.

Kardanové kíby sa používajú na vyrovnanie výchyliek v priestore.

Používanie kíbových kompenzátorov umožňuje voľbou rozostupu kíbov lepšie využitie kompenzačnej schopnosti jednotlivých kompenzátorov.

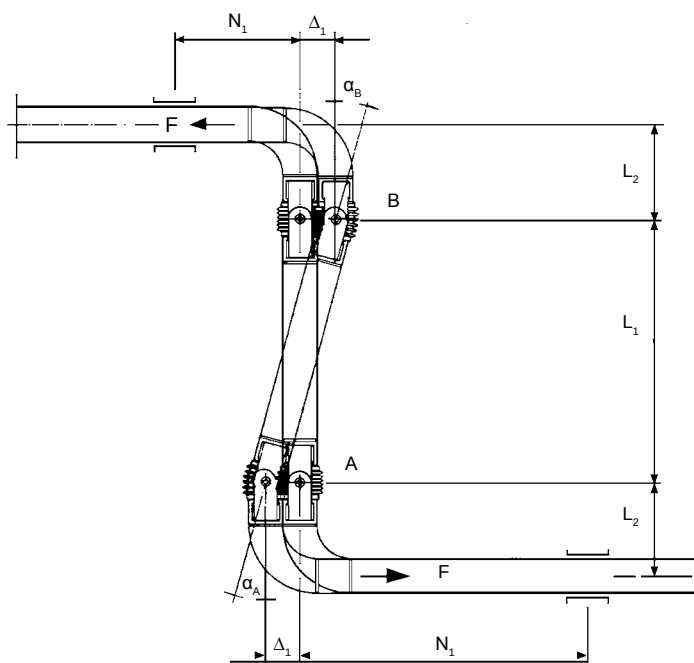
Ako už bolo konštatované v predchádzajúcich kapitolách, sú kíbové kompenzátory konštruované tak, že konštrukcia kíbu zachytáva silu od vnútorného pretlaku.

## Kardanový kompenzátor s navarovacími nátrubkami - príklad



Príklady najčastejšieho použitia klbových kompenzátorov  
s jednou osou otáčania - rovinné kompenzačné útvary Z, L, U

## Kompenzácia tvaru Z



### Legenda:

$M_o$  ohybová tuhosť (Nm/deg)  
 $M_t$  trecí moment (Nm/bar)  
údaje z katalógu

$$\alpha = \alpha_A + \alpha_B$$

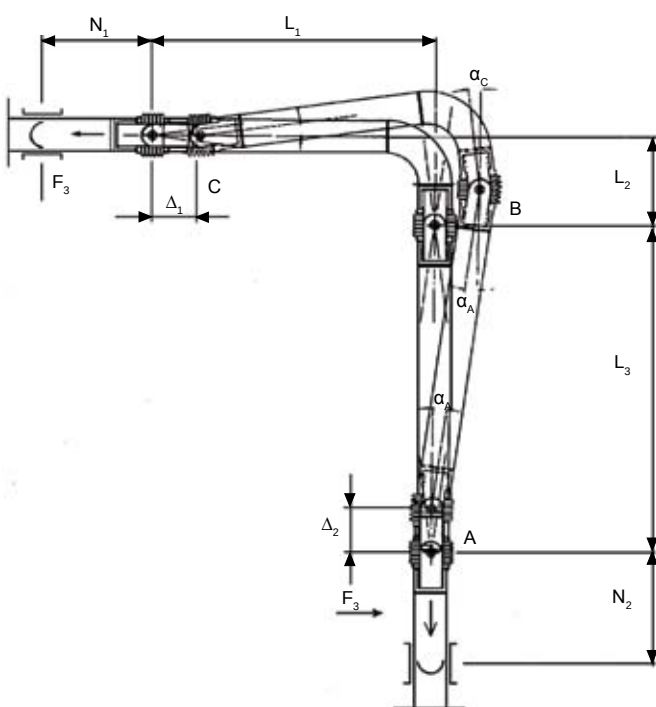
$$L_1 = \frac{\Delta_1 + \Delta_2}{\sin \alpha}$$

$$M = M_A = M_B$$

$$M = M_o + M_t$$

$$F = \frac{2M}{L_1}$$

## Kompenzácia tvaru L



$$\Delta_1 \geq \Delta_2$$

$$\sin \alpha_C = \frac{\Delta_2}{L_1}$$

$$\sin \alpha_A = \frac{\Delta_1 + \frac{\Delta_2 \times L_2}{L_1}}{L_3}$$

$$\sin \alpha_B = \sin \alpha_A + \sin \alpha_C$$

$$F_2 = F_4 = \frac{M_A + M_B}{L_3}$$

$$F_1 = F_3 = \frac{(M_C + M_B) \times L_3 + (M_A + M_B) \times L_2}{L_1 \times L_3}$$

$$M_1 = F_4 \times N_2 + M_A$$

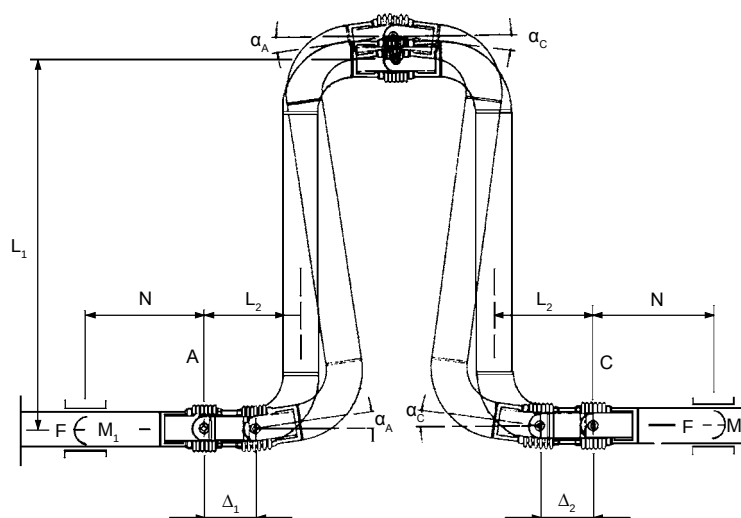
$$M_2 = F_1 \times N_1 + M_C$$

$$M_B = M_o \times \alpha_B + M_t \times p$$

$$M_A = M_o \times \alpha_A + M_t \times p$$

$$M_C = M_o \times \alpha_C + M_t \times p$$

## Kompenzácia tvaru U



$$L_1 = \frac{\Delta_2 + \Delta_2}{\sin \alpha_B}$$

$$\sin \alpha_B = \sin \alpha_A + \sin \alpha_C$$

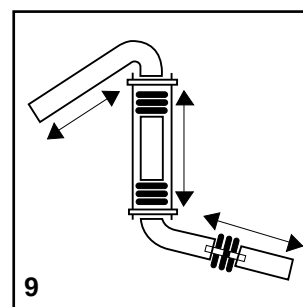
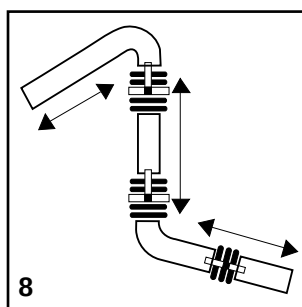
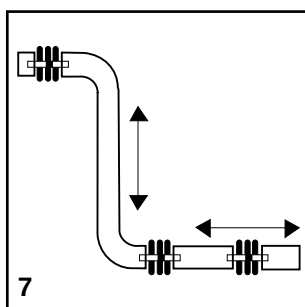
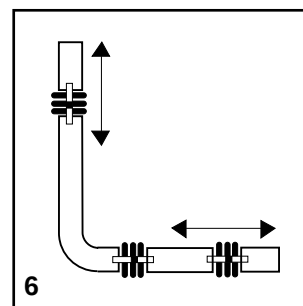
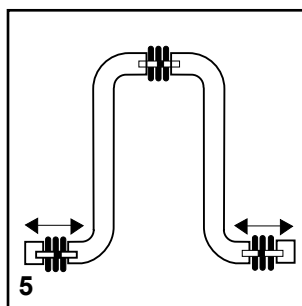
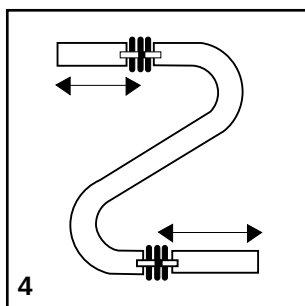
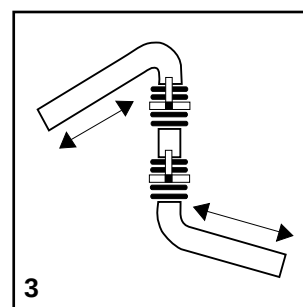
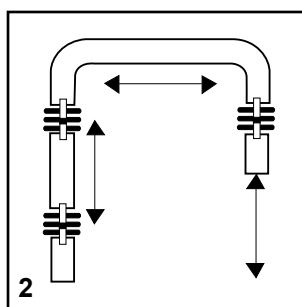
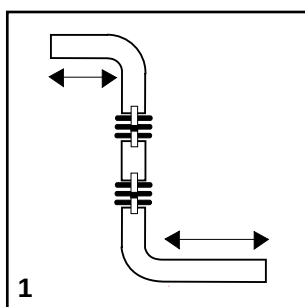
$$F = \frac{M_A + M_B}{L_1}$$

$$M_A = M_o \times \alpha_A + M_t \times p$$

$$M_B = M_o \times \alpha_B + M_t \times p$$

$$M_C = M_A$$

## Príklady použitia kĺbových kompenzátorov





# ZÁKLADNÉ TECHNICKÉ ÚDAJE KÍBOVÝCH KOMPENZÁTOROV

## **MWP - MFP**

DATA SHEETS FOR  
**H I N G E D**  
EXPANSION JOINTS



## PN 1

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Uhlový pohyb<br>Angular movement | Ohybová tuhosť<br>Angular spring rate | Treći moment<br>Frictional moments |
|---------------------------------------|---------------------------------------|----------------------------------|---------------------------------------|------------------------------------|
| DN                                    | DN                                    | ± deg (°)                        | N.m/°                                 | N.m/bar                            |
| mm                                    | inch                                  |                                  |                                       |                                    |
| 50                                    | 2"                                    | 6,0                              | 0,8                                   | 0,3                                |
| 50                                    | 2"                                    | 12,0                             | 0,4                                   | 0,3                                |
| 65                                    | 2 ½"                                  | 6,0                              | 0,8                                   | 0,5                                |
| 65                                    | 2 ½"                                  | 12,0                             | 0,4                                   | 0,5                                |
| 80                                    | 3"                                    | 3,0                              | 1,0                                   | 0,7                                |
| 80                                    | 3"                                    | 6,0                              | 0,6                                   | 0,7                                |
| 80                                    | 3"                                    | 12,0                             | 0,4                                   | 0,7                                |
| 100                                   | 4"                                    | 3,0                              | 4,9                                   | 1,1                                |
| 100                                   | 4"                                    | 6,0                              | 2,7                                   | 1,1                                |
| 100                                   | 4"                                    | 12,0                             | 1,9                                   | 1,1                                |
| 125                                   | 5"                                    | 3,0                              | 17,0                                  | 2,0                                |
| 125                                   | 5"                                    | 6,0                              | 9,6                                   | 2,0                                |
| 125                                   | 5"                                    | 12,0                             | 6,7                                   | 2,0                                |
| 150                                   | 6"                                    | 3,0                              | 33,0                                  | 2,8                                |
| 150                                   | 6"                                    | 6,0                              | 18,0                                  | 2,8                                |
| 150                                   | 6"                                    | 12,0                             | 13,0                                  | 2,8                                |
| 200                                   | 8"                                    | 3,0                              | 41,0                                  | 4,7                                |
| 200                                   | 8"                                    | 6,0                              | 23,0                                  | 4,7                                |
| 200                                   | 8"                                    | 12,0                             | 16,0                                  | 4,7                                |
| 250                                   | 10"                                   | 3,0                              | 66,0                                  | 7,2                                |
| 250                                   | 10"                                   | 6,0                              | 36,0                                  | 7,2                                |
| 250                                   | 10"                                   | 12,0                             | 25,0                                  | 7,2                                |
| 300                                   | 12"                                   | 2,0                              | 92,0                                  | 13,0                               |
| 300                                   | 12"                                   | 4,0                              | 51,0                                  | 13,0                               |
| 300                                   | 12"                                   | 6,0                              | 36,0                                  | 13,0                               |
| 350                                   | 14"                                   | 2,0                              | 92,0                                  | 16,0                               |
| 350                                   | 14"                                   | 4,0                              | 51,0                                  | 16,0                               |
| 350                                   | 14"                                   | 6,0                              | 35,0                                  | 16,0                               |
| 400                                   | 16"                                   | 2,0                              | 223,0                                 | 21,0                               |
| 400                                   | 16"                                   | 4,0                              | 160,0                                 | 21,0                               |
| 400                                   | 16"                                   | 6,0                              | 102,0                                 | 21,0                               |
| 500                                   | 20"                                   | 2,0                              | 379,0                                 | 32,0                               |
| 500                                   | 20"                                   | 4,0                              | 270,0                                 | 32,0                               |
| 500                                   | 20"                                   | 6,0                              | 172,0                                 | 32,0                               |
| 600                                   | 24"                                   | 2,0                              | 575,0                                 | 46,0                               |
| 600                                   | 24"                                   | 4,0                              | 411,0                                 | 46,0                               |
| 600                                   | 24"                                   | 6,0                              | 261,0                                 | 46,0                               |
| 700                                   | 28"                                   | 1,5                              | 1 010,0                               | 62,0                               |
| 700                                   | 28"                                   | 2,0                              | 674,0                                 | 62,0                               |
| 700                                   | 28"                                   | 4,0                              | 449,0                                 | 62,0                               |
| 800                                   | 32"                                   | 1,5                              | 1 346,0                               | 121,0                              |
| 800                                   | 32"                                   | 2,0                              | 897,0                                 | 121,0                              |
| 800                                   | 32"                                   | 4,0                              | 598,0                                 | 121,0                              |
| 900                                   | 36"                                   | 1,5                              | 1 719,0                               | 153,0                              |
| 900                                   | 36"                                   | 2,0                              | 1 146,0                               | 153,0                              |
| 900                                   | 36"                                   | 4,0                              | 764,0                                 | 153,0                              |



MWP



MFP

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                | mm                               | mm             | kg                                |
| 260                              | 220            | 8,0                               | 90                               | 210            | 6,0                               |
| 310                              | 220            | 8,0                               | 140                              | 210            | 6,0                               |
| 310                              | 230            | 10,0                              | 100                              | 230            | 7,0                               |
| 360                              | 230            | 10,0                              | 150                              | 230            | 7,0                               |
| 310                              | 250            | 12,0                              | 100                              | 260            | 9,0                               |
| 350                              | 250            | 13,0                              | 140                              | 260            | 9,0                               |
| 390                              | 250            | 13,0                              | 180                              | 260            | 10,0                              |
| 310                              | 310            | 17,0                              | 110                              | 320            | 12,0                              |
| 360                              | 310            | 18,0                              | 150                              | 320            | 12,0                              |
| 410                              | 310            | 19,0                              | 200                              | 320            | 13,0                              |
| 310                              | 340            | 20,0                              | 110                              | 350            | 14,0                              |
| 360                              | 340            | 21,0                              | 150                              | 350            | 15,0                              |
| 410                              | 340            | 23,0                              | 200                              | 350            | 16,0                              |
| 320                              | 380            | 27,0                              | 110                              | 375            | 18,0                              |
| 370                              | 380            | 29,0                              | 160                              | 375            | 19,0                              |
| 420                              | 380            | 31,0                              | 220                              | 375            | 21,0                              |
| 340                              | 450            | 36,0                              | 120                              | 430            | 22,0                              |
| 400                              | 450            | 38,0                              | 170                              | 430            | 24,0                              |
| 460                              | 450            | 40,0                              | 230                              | 430            | 27,0                              |
| 350                              | 520            | 46,0                              | 120                              | 515            | 27,0                              |
| 410                              | 520            | 49,0                              | 180                              | 515            | 30,0                              |
| 470                              | 520            | 52,0                              | 240                              | 515            | 33,0                              |
| 370                              | 570            | 75,0                              | 140                              | 580            | 48,0                              |
| 440                              | 570            | 80,0                              | 200                              | 580            | 52,0                              |
| 500                              | 570            | 85,0                              | 260                              | 580            | 57,0                              |
| 380                              | 630            | 85,0                              | 140                              | 630            | 56,0                              |
| 450                              | 630            | 90,0                              | 210                              | 630            | 60,0                              |
| 520                              | 630            | 95,0                              | 280                              | 630            | 65,0                              |
| 450                              | 730            | 110,0                             | 170                              | 680            | 75,0                              |
| 500                              | 730            | 115,0                             | 220                              | 680            | 80,0                              |
| 590                              | 730            | 125,0                             | 310                              | 680            | 85,0                              |
| 480                              | 830            | 135,0                             | 170                              | 785            | 85,0                              |
| 530                              | 830            | 140,0                             | 220                              | 785            | 90,0                              |
| 620                              | 830            | 150,0                             | 310                              | 785            | 100,0                             |
| 480                              | 950            | 170,0                             | 170                              | 895            | 105,0                             |
| 530                              | 950            | 175,0                             | 220                              | 895            | 115,0                             |
| 620                              | 950            | 190,0                             | 310                              | 895            | 125,0                             |
| 460                              | 1 100          | 215,0                             | 160                              | 1 000          | 125,0                             |
| 500                              | 1 100          | 220,0                             | 200                              | 1 000          | 130,0                             |
| 570                              | 1 100          | 230,0                             | 270                              | 1 000          | 140,0                             |
| 460                              | 1 260          | 250,0                             | 170                              | 1 115          | 150,0                             |
| 500                              | 1 260          | 260,0                             | 200                              | 1 115          | 155,0                             |
| 570                              | 1 260          | 270,0                             | 270                              | 1 115          | 170,0                             |
| 480                              | 1 370          | 305,0                             | 170                              | 1 215          | 165,0                             |
| 520                              | 1 370          | 315,0                             | 200                              | 1 215          | 170,0                             |
| 590                              | 1 370          | 325,0                             | 270                              | 1 215          | 185,0                             |

PN 1

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Uhlový pohyb<br>Angular movement | Ohybová tuhosť<br>Angular spring rate | Trecí moment<br>Frictional moments | MWP                              |                |                                   | MFP                              |                |                                   |
|---------------------------------------|---------------------------------------|----------------------------------|---------------------------------------|------------------------------------|----------------------------------|----------------|-----------------------------------|----------------------------------|----------------|-----------------------------------|
|                                       |                                       |                                  |                                       |                                    | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
| DN                                    | DN                                    | ± deg (°)                        | N.m/°                                 | N.m/bar                            | mm                               | mm             | kg                                | mm                               | mm             | kg                                |
| 1000                                  | 40"                                   | 1,5                              | 1 938,0                               | 189,0                              | 650                              | 1 260          | 440,0                             | 710                              | 1 260          | 460,0                             |
| 1000                                  | 40"                                   | 2,0                              | 1 292,0                               | 189,0                              | 690                              | 1 260          | 450,0                             | 750                              | 1 260          | 470,0                             |
| 1000                                  | 40"                                   | 3,0                              | 862,0                                 | 189,0                              | 760                              | 1 260          | 465,0                             | 820                              | 1 260          | 485,0                             |
| 1100                                  | 44"                                   | 1,5                              | 2 356,0                               | 229,0                              | 650                              | 1 370          | 470,0                             | 710                              | 1 370          | 490,0                             |
| 1100                                  | 44"                                   | 2,0                              | 1 571,0                               | 229,0                              | 690                              | 1 370          | 480,0                             | 750                              | 1 370          | 500,0                             |
| 1100                                  | 44"                                   | 3,0                              | 1 047,0                               | 229,0                              | 760                              | 1 370          | 495,0                             | 820                              | 1 370          | 520,0                             |
| 1200                                  | 48"                                   | 1,5                              | 2 549,0                               | 271,0                              | 690                              | 1 475          | 535,0                             | 750                              | 1 475          | 560,0                             |
| 1200                                  | 48"                                   | 2,0                              | 1 699,0                               | 271,0                              | 730                              | 1 475          | 550,0                             | 790                              | 1 475          | 570,0                             |
| 1200                                  | 48"                                   | 3,0                              | 1 133,0                               | 271,0                              | 800                              | 1 475          | 570,0                             | 860                              | 1 475          | 590,0                             |
| 1300                                  | 52"                                   | 1,0                              | 1 708,0                               | 429,0                              | 710                              | 1 645          | 610,0                             | 770                              | 1 645          | 635,0                             |
| 1300                                  | 52"                                   | 1,5                              | 1 281,0                               | 429,0                              | 750                              | 1 645          | 620,0                             | 810                              | 1 645          | 650,0                             |
| 1300                                  | 52"                                   | 3,0                              | 569,0                                 | 429,0                              | 940                              | 1 645          | 685,0                             | 1 000                            | 1 645          | 710,0                             |
| 1400                                  | 56"                                   | 1,0                              | 2 111,0                               | 495,0                              | 710                              | 1 745          | 640,0                             | 770                              | 1 745          | 675,0                             |
| 1400                                  | 56"                                   | 1,5                              | 1 584,0                               | 495,0                              | 750                              | 1 745          | 655,0                             | 810                              | 1 745          | 690,0                             |
| 1400                                  | 56"                                   | 3,0                              | 704,0                                 | 495,0                              | 940                              | 1 745          | 720,0                             | 1 000                            | 1 745          | 755,0                             |
| 1500                                  | 60"                                   | 1,0                              | 2 575,0                               | 563,0                              | 770                              | 1 835          | 720,0                             | 830                              | 1 845          | 775,0                             |
| 1500                                  | 60"                                   | 1,5                              | 2 331,0                               | 563,0                              | 810                              | 1 835          | 735,0                             | 870                              | 1 835          | 790,0                             |
| 1500                                  | 60"                                   | 3,0                              | 1 036,0                               | 563,0                              | 1 000                            | 1 835          | 800,0                             | 1 060                            | 1 835          | 860,0                             |
| 1600                                  | 64"                                   | 1,0                              | 3 743,0                               | 637,0                              | 770                              | 1 935          | 765,0                             | 830                              | 1 935          | 830,0                             |
| 1600                                  | 64"                                   | 1,5                              | 2 246,0                               | 637,0                              | 840                              | 1 935          | 795,0                             | 900                              | 1 935          | 855,0                             |
| 1600                                  | 64"                                   | 3,0                              | 1 248,0                               | 637,0                              | 1 000                            | 1 935          | 855,0                             | 1 060                            | 1 935          | 915,0                             |
| 1800                                  | 72"                                   | 1,0                              | 4 360,0                               | 802,0                              | 770                              | 2 145          | 860,0                             | 830                              | 2 145          | 1 020,0                           |
| 1800                                  | 72"                                   | 1,5                              | 2 616,0                               | 802,0                              | 840                              | 2 145          | 895,0                             | 900                              | 2 145          | 1 050,0                           |
| 1800                                  | 72"                                   | 3,0                              | 1 453,0                               | 802,0                              | 1 000                            | 2 145          | 960,0                             | 1 060                            | 2 145          | 1 120,0                           |
| 2000                                  | 80"                                   | 1,0                              | 5 919,0                               | 983,0                              | 830                              | 2 345          | 1 000,0                           | 890                              | 2 345          | 1 180,0                           |
| 2000                                  | 80"                                   | 1,5                              | 3 552,0                               | 983,0                              | 900                              | 2 345          | 1 035,0                           | 960                              | 2 345          | 1 210,0                           |
| 2000                                  | 80"                                   | 3,0                              | 1 973,0                               | 983,0                              | 1 060                            | 2 345          | 1 110,0                           | 1 120                            | 2 345          | 1 285,0                           |
| 2200                                  | 88"                                   | 1,0                              | 13 056,0                              | 1 480,0                            | 830                              | 2 545          | 1 110,0                           | 890                              | 2 545          | 1 355,0                           |
| 2200                                  | 88"                                   | 1,5                              | 7 833,0                               | 1 480,0                            | 900                              | 2 545          | 1 160,0                           | 960                              | 2 545          | 1 400,0                           |
| 2200                                  | 88"                                   | 3,0                              | 4 352,0                               | 1 480,0                            | 1 060                            | 2 545          | 1 260,0                           | 1 120                            | 2 545          | 1 500,0                           |
| 2400                                  | 96"                                   | 1,0                              | 16 833,0                              | 1 753,0                            | 930                              | 2 745          | 1 430,0                           | 1 010                            | 2 745          | 1 565,0                           |
| 2400                                  | 96"                                   | 1,5                              | 10 100,0                              | 1 753,0                            | 1 000                            | 2 745          | 1 480,0                           | 1 080                            | 2 745          | 1 615,0                           |
| 2400                                  | 96"                                   | 3,0                              | 5 611,0                               | 1 753,0                            | 1 160                            | 2 745          | 1 590,0                           | 1 240                            | 2 745          | 1 725,0                           |
| 2600                                  | 104"                                  | 1,0                              | 21 271,0                              | 2 049,0                            | 990                              | 2 945          | 1 605,0                           | 1 070                            | 2 945          | 1 750,0                           |
| 2600                                  | 104"                                  | 1,5                              | 12 763,0                              | 2 049,0                            | 1 060                            | 2 945          | 1 665,0                           | 1 140                            | 2 945          | 1 805,0                           |
| 2600                                  | 104"                                  | 3,0                              | 7 090,0                               | 2 049,0                            | 1 220                            | 2 945          | 1 780,0                           | 1 300                            | 2 945          | 1 925,0                           |
| 2800                                  | 112"                                  | 1,0                              | 26 428,0                              | 2 368,0                            | 1 050                            | 3 145          | 1 805,0                           | 1 130                            | 3 145          | 2 230,0                           |
| 2800                                  | 112"                                  | 1,5                              | 15 857,0                              | 2 368,0                            | 1 120                            | 3 145          | 1 865,0                           | 1 200                            | 3 145          | 2 285,0                           |
| 2800                                  | 112"                                  | 3,0                              | 8 809,0                               | 2 368,0                            | 1 280                            | 3 145          | 1 995,0                           | 1 360                            | 3 145          | 2 420,0                           |
| 3000                                  | 120"                                  | 1,0                              | 32 358,0                              | 3 253,0                            | 1 090                            | 3 345          | 1 960,0                           | 1 170                            | 3 345          | 2 415,0                           |
| 3000                                  | 120"                                  | 1,5                              | 10 786,0                              | 3 253,0                            | 1 320                            | 3 345          | 2 160,0                           | 1 400                            | 3 345          | 2 615,0                           |
| 3000                                  | 120"                                  | 3,0                              | 10 786,0                              | 3 253,0                            | 1 320                            | 3 345          | 2 160,0                           | 1 400                            | 3 345          | 2 615,0                           |
| 3200                                  | 128"                                  | 1,0                              | 39 122,0                              | 3 691,0                            | 1 150                            | 3 545          | 2 145,0                           | 1 230                            | 3 545          | 2 625,0                           |
| 3200                                  | 128"                                  | 1,5                              | 13 041,0                              | 3 691,0                            | 1 380                            | 3 545          | 2 355,0                           | 1 460                            | 3 545          | 2 835,0                           |
| 3400                                  | 136"                                  | 1,0                              | 49 593,0                              | 4 160,0                            | 1 210                            | 3 810          | 2 645,0                           | 1 290                            | 3 810          | 3 165,0                           |
| 3400                                  | 136"                                  | 1,5                              | 16 531,0                              | 4 160,0                            | 1 440                            | 3 810          | 2 890,0                           | 1 520                            | 3 810          | 3 410,0                           |

# PN 1

| Menovitá svetlost'<br>Nominal diameter | Menovitá svetlost'<br>Nominal diameter | Uhlový pohyb<br>Angular movement | Ohybová tuhosť<br>Angular spring rate | Treći moment<br>Frictional moments |
|----------------------------------------|----------------------------------------|----------------------------------|---------------------------------------|------------------------------------|
| DN                                     | DN                                     | ± deg (°)                        | N.m/°                                 | N.m/bar                            |
| mm                                     | inch                                   |                                  |                                       |                                    |
| 3600                                   | 144"                                   | 1,0                              | 58 687,0                              | 5 430,0                            |
| 3600                                   | 144"                                   | 1,5                              | 19 562,0                              | 5 430,0                            |
| 3800                                   | 152"                                   | 1,0                              | 68 819,0                              | 6 038,0                            |
| 3800                                   | 152"                                   | 1,5                              | 22 940,0                              | 6 038,0                            |
| 4000                                   | 160"                                   | 1,0                              | 79 984,0                              | 7 628,0                            |
| 4000                                   | 160"                                   | 1,5                              | 26 661,0                              | 7 628,0                            |
| 4200                                   | 168"                                   | 1,0                              | 55 424,0                              | 8 397,0                            |
| 4200                                   | 168"                                   | 1,5                              | 30 791,0                              | 8 397,0                            |
| 4500                                   | 180"                                   | 1,0                              | 67 969,0                              | 10 823,0                           |
| 4500                                   | 180"                                   | 1,5                              | 37 761,0                              | 10 823,0                           |
| 5000                                   | 200"                                   | 1,0                              | 92 842,0                              | 13 324,0                           |
| 5000                                   | 200"                                   | 1,5                              | 51 579,0                              | 13 324,0                           |
| 5500                                   | 220"                                   | 1,0                              | 123 144,0                             | 17 872,0                           |
| 5500                                   | 220"                                   | 1,5                              | 68 413,0                              | 17 872,0                           |
| 6000                                   | 240"                                   | 1,0                              | 159 411,0                             | 21 228,0                           |
| 6000                                   | 240"                                   | 1,5                              | 88 562,0                              | 21 228,0                           |



## MWP

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 1 290                            | 4 010          | 2 915,0                           |
| 1 520                            | 4 010          | 3 170,0                           |
| 1 390                            | 4 210          | 3 295,0                           |
| 1 620                            | 4 210          | 3 565,0                           |
| 1 510                            | 4 410          | 4 320,0                           |
| 1 740                            | 4 410          | 4 595,0                           |
| 1 630                            | 4 670          | 4 940,0                           |
| 1 780                            | 4 670          | 5 150,0                           |
| 1 670                            | 4 970          | 5 425,0                           |
| 1 820                            | 4 970          | 5 650,0                           |
| 1 730                            | 5 470          | 6 890,0                           |
| 1 880                            | 5 470          | 7 155,0                           |
| 1 810                            | 5 970          | 7 795,0                           |
| 1 960                            | 5 970          | 8 085,0                           |
| 1 890                            | 6 470          | 9 130,0                           |
| 2 040                            | 6 470          | 9 440,0                           |



## MFP

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 1 370                            | 4 010          | 3 525,0                           |
| 1 600                            | 4 010          | 3 775,0                           |
| 1 470                            | 4 210          | 4 205,0                           |
| 1 700                            | 4 210          | 4 475,0                           |
| 1 610                            | 4 410          | 5 095,0                           |
| 1 840                            | 4 410          | 5 370,0                           |

PN 2,5

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Uhlový pohyb<br>Angular movement | Ohybová tuhosť<br>Angular spring rate | Treći moment<br>Frictional moments |
|---------------------------------------|---------------------------------------|----------------------------------|---------------------------------------|------------------------------------|
| DN                                    | DN                                    | ± deg (°)                        | N.m/°                                 | N.m/bar                            |
| mm                                    | inch                                  |                                  |                                       |                                    |
| 50                                    | 2"                                    | 6,0                              | 0,8                                   | 0,3                                |
| 50                                    | 2"                                    | 12,0                             | 0,4                                   | 0,3                                |
| 65                                    | 2 ½"                                  | 6,0                              | 0,8                                   | 0,5                                |
| 65                                    | 2 ½"                                  | 12,0                             | 0,4                                   | 0,5                                |
| 80                                    | 3"                                    | 3,0                              | 1,0                                   | 0,7                                |
| 80                                    | 3"                                    | 6,0                              | 0,6                                   | 0,7                                |
| 80                                    | 3"                                    | 12,0                             | 0,4                                   | 0,7                                |
| 100                                   | 4"                                    | 3,0                              | 4,9                                   | 1,1                                |
| 100                                   | 4"                                    | 6,0                              | 2,7                                   | 1,1                                |
| 100                                   | 4"                                    | 12,0                             | 1,9                                   | 1,1                                |
| 125                                   | 5"                                    | 3,0                              | 17,0                                  | 2,0                                |
| 125                                   | 5"                                    | 6,0                              | 9,6                                   | 2,0                                |
| 125                                   | 5"                                    | 2,0                              | 6,7                                   | 2,0                                |
| 150                                   | 6"                                    | 3,0                              | 33,0                                  | 2,8                                |
| 150                                   | 6"                                    | 6,0                              | 18,0                                  | 2,8                                |
| 150                                   | 6"                                    | 12,0                             | 13,0                                  | 2,8                                |
| 200                                   | 8"                                    | 3,0                              | 41,0                                  | 4,7                                |
| 200                                   | 8"                                    | 6,0                              | 23,0                                  | 4,7                                |
| 200                                   | 8"                                    | 12,0                             | 16,0                                  | 4,7                                |
| 250                                   | 10"                                   | 3,0                              | 66,0                                  | 7,2                                |
| 250                                   | 10"                                   | 6,0                              | 36,0                                  | 7,2                                |
| 250                                   | 10"                                   | 12,0                             | 25,0                                  | 7,2                                |
| 300                                   | 12"                                   | 2,0                              | 92,0                                  | 13,0                               |
| 300                                   | 12"                                   | 4,0                              | 51,0                                  | 13,0                               |
| 300                                   | 12"                                   | 6,0                              | 36,0                                  | 13,0                               |
| 350                                   | 14"                                   | 2,0                              | 92,0                                  | 16,0                               |
| 350                                   | 14"                                   | 4,0                              | 51,0                                  | 16,0                               |
| 350                                   | 14"                                   | 6,0                              | 35,0                                  | 16,0                               |
| 400                                   | 16"                                   | 2,0                              | 223,0                                 | 21,0                               |
| 400                                   | 16"                                   | 4,0                              | 160,0                                 | 21,0                               |
| 400                                   | 16"                                   | 6,0                              | 102,0                                 | 21,0                               |
| 500                                   | 20"                                   | 2,0                              | 540,0                                 | 33,0                               |
| 500                                   | 20"                                   | 4,0                              | 386,0                                 | 33,0                               |
| 500                                   | 20"                                   | 6,0                              | 246,0                                 | 33,0                               |
| 600                                   | 24"                                   | 2,0                              | 820,0                                 | 69,0                               |
| 600                                   | 24"                                   | 4,0                              | 585,0                                 | 69,0                               |
| 600                                   | 24"                                   | 6,0                              | 373,0                                 | 69,0                               |
| 700                                   | 28"                                   | 1,5                              | 1 440,0                               | 94,0                               |
| 700                                   | 28"                                   | 2,0                              | 960,0                                 | 94,0                               |
| 700                                   | 28"                                   | 4,0                              | 640,0                                 | 94,0                               |
| 800                                   | 32"                                   | 1,5                              | 1 918,0                               | 162,0                              |
| 800                                   | 32"                                   | 2,0                              | 1 278,0                               | 162,0                              |
| 800                                   | 32"                                   | 4,0                              | 852,0                                 | 162,0                              |
| 900                                   | 36"                                   | 1,5                              | 2 449,0                               | 255,0                              |
| 900                                   | 36"                                   | 2,0                              | 1 633,0                               | 255,0                              |
| 900                                   | 36"                                   | 4,0                              | 1 088,0                               | 255,0                              |



MWP

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 260                              | 220            | 8,0                               |
| 310                              | 220            | 8,0                               |
| 310                              | 230            | 10,0                              |
| 360                              | 230            | 10,0                              |
| 310                              | 250            | 12,0                              |
| 350                              | 250            | 13,0                              |
| 390                              | 250            | 13,0                              |
| 310                              | 310            | 17,0                              |
| 360                              | 310            | 18,0                              |
| 410                              | 310            | 19,0                              |
| 310                              | 340            | 20,0                              |
| 360                              | 340            | 21,0                              |
| 410                              | 340            | 23,0                              |
| 320                              | 380            | 27,0                              |
| 370                              | 380            | 29,0                              |
| 420                              | 380            | 31,0                              |
| 340                              | 450            | 40,0                              |
| 400                              | 450            | 43,0                              |
| 460                              | 450            | 45,0                              |
| 350                              | 520            | 51,0                              |
| 410                              | 520            | 55,0                              |
| 470                              | 520            | 58,0                              |
| 370                              | 570            | 75,0                              |
| 440                              | 570            | 80,0                              |
| 500                              | 570            | 85,0                              |
| 380                              | 630            | 85,0                              |
| 450                              | 630            | 90,0                              |
| 520                              | 630            | 95,0                              |
| 450                              | 730            | 125,0                             |
| 500                              | 730            | 130,0                             |
| 590                              | 730            | 135,0                             |
| 480                              | 830            | 165,0                             |
| 530                              | 830            | 175,0                             |
| 620                              | 830            | 185,0                             |
| 480                              | 950            | 210,0                             |
| 530                              | 950            | 220,0                             |
| 620                              | 950            | 235,0                             |
| 460                              | 1 100          | 260,0                             |
| 500                              | 1 100          | 270,0                             |
| 570                              | 1 100          | 285,0                             |
| 460                              | 1 260          | 310,0                             |
| 500                              | 1 260          | 320,0                             |
| 570                              | 1 260          | 335,0                             |
| 480                              | 1 370          | 415,0                             |
| 520                              | 1 370          | 425,0                             |
| 590                              | 1 370          | 440,0                             |



MFP

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 90                               | 210            | 6,0                               |
| 140                              | 210            | 6,0                               |
| 100                              | 230            | 7,0                               |
| 150                              | 230            | 8,0                               |
| 100                              | 260            | 10,0                              |
| 140                              | 260            | 10,0                              |
| 180                              | 260            | 11,0                              |
| 110                              | 320            | 13,0                              |
| 150                              | 320            | 14,0                              |
| 200                              | 320            | 15,0                              |
| 110                              | 350            | 17,0                              |
| 150                              | 350            | 18,0                              |
| 200                              | 350            | 19,0                              |
| 110                              | 375            | 21,0                              |
| 160                              | 375            | 23,0                              |
| 220                              | 375            | 25,0                              |
| 130                              | 430            | 30,0                              |
| 180                              | 430            | 31,0                              |
| 240                              | 430            | 34,0                              |
| 130                              | 515            | 38,0                              |
| 190                              | 515            | 41,0                              |
| 250                              | 515            | 44,0                              |
| 140                              | 580            | 54,0                              |
| 200                              | 580            | 59,0                              |
| 260                              | 580            | 65,0                              |
| 150                              | 630            | 70,0                              |
| 210                              | 630            | 75,0                              |
| 280                              | 630            | 80,0                              |
| 180                              | 680            | 95,0                              |
| 230                              | 680            | 100,0                             |
| 320                              | 680            | 110,0                             |
| 190                              | 785            | 120,0                             |
| 240                              | 785            | 125,0                             |
| 330                              | 785            | 140,0                             |
| 190                              | 895            | 150,0                             |
| 240                              | 895            | 160,0                             |
| 330                              | 895            | 175,0                             |
| 190                              | 1 000          | 180,0                             |
| 220                              | 1 000          | 185,0                             |
| 290                              | 1 000          | 200,0                             |
| 230                              | 1 115          | 225,0                             |
| 230                              | 1 115          | 225,0                             |
| 290                              | 1 115          | 235,0                             |
| 280                              | 1 215          | 275,0                             |
| 280                              | 1 215          | 270,0                             |
| 300                              | 1 215          | 275,0                             |

PN 2,5

| Menovitá svetlost'<br>Nominal diameter | Menovitá svetlost'<br>Nominal diameter | Uhlový pohyb<br>Angular movement | Ohybová tuhosť<br>Angular spring rate | Treći moment<br>Frictional moments |
|----------------------------------------|----------------------------------------|----------------------------------|---------------------------------------|------------------------------------|
| DN                                     | DN                                     | ± deg (°)                        | N.m/°                                 | N.m/bar                            |
| mm                                     | inch                                   |                                  |                                       |                                    |
| 1000                                   | 40"                                    | 1,5                              | 3 886,0                               | 315,0                              |
| 1000                                   | 40"                                    | 2,0                              | 2 590,0                               | 315,0                              |
| 1000                                   | 40"                                    | 3,0                              | 1 727,0                               | 315,0                              |
| 1100                                   | 44"                                    | 1,5                              | 4 722,0                               | 381,0                              |
| 1100                                   | 44"                                    | 2,0                              | 3 148,0                               | 381,0                              |
| 1100                                   | 44"                                    | 3,0                              | 2 099,0                               | 381,0                              |
| 1200                                   | 48"                                    | 1,5                              | 5 108,0                               | 543,0                              |
| 1200                                   | 48"                                    | 2,0                              | 3 405,0                               | 543,0                              |
| 1200                                   | 48"                                    | 3,0                              | 2 270,0                               | 543,0                              |
| 1300                                   | 52"                                    | 1,0                              | 4 126,0                               | 642,0                              |
| 1300                                   | 52"                                    | 1,5                              | 3 094,0                               | 642,0                              |
| 1300                                   | 52"                                    | 3,0                              | 2 063,0                               | 642,0                              |
| 1400                                   | 56"                                    | 1,0                              | 5 103,0                               | 740,0                              |
| 1400                                   | 56"                                    | 1,5                              | 3 828,0                               | 740,0                              |
| 1400                                   | 56"                                    | 3,0                              | 2 552,0                               | 740,0                              |
| 1500                                   | 60"                                    | 1,0                              | 6 225,0                               | 985,0                              |
| 1500                                   | 60"                                    | 1,5                              | 4 668,0                               | 985,0                              |
| 1500                                   | 60"                                    | 3,0                              | 3 112,0                               | 985,0                              |
| 1600                                   | 64"                                    | 1,0                              | 7 497,0                               | 1 116,0                            |
| 1600                                   | 64"                                    | 1,5                              | 4 498,0                               | 1 116,0                            |
| 1600                                   | 64"                                    | 3,0                              | 3 749,0                               | 1 116,0                            |
| 1800                                   | 72"                                    | 1,0                              | 10 545,0                              | 1 400,0                            |
| 1800                                   | 72"                                    | 1,5                              | 6 327,0                               | 1 400,0                            |
| 1800                                   | 72"                                    | 3,0                              | 5 272,0                               | 1 400,0                            |
| 2000                                   | 80"                                    | 1,0                              | 14 320,0                              | 1 963,0                            |
| 2000                                   | 80"                                    | 1,5                              | 8 592,0                               | 1 963,0                            |
| 2000                                   | 80"                                    | 3,0                              | 7 160,0                               | 1 963,0                            |
| 2200                                   | 88"                                    | 1,0                              | 18 907,0                              | 2 362,0                            |
| 2200                                   | 88"                                    | 1,5                              | 11 344,0                              | 2 362,0                            |
| 2200                                   | 88"                                    | 3,0                              | 9 453,0                               | 2 362,0                            |
| 2400                                   | 96"                                    | 1,0                              | 30 269,0                              | 3 158,0                            |
| 2400                                   | 96"                                    | 1,5                              | 18 162,0                              | 3 158,0                            |
| 2400                                   | 96"                                    | 3,0                              | 15 135,0                              | 3 158,0                            |
| 2600                                   | 104"                                   | 1,0                              | 38 252,0                              | 4 101,0                            |
| 2600                                   | 104"                                   | 1,5                              | 22 951,0                              | 4 101,0                            |
| 2600                                   | 104"                                   | 3,0                              | 19 126,0                              | 4 101,0                            |
| 2800                                   | 112"                                   | 1,0                              | 57 498,0                              | 4 730,0                            |
| 2800                                   | 112"                                   | 1,5                              | 34 499,0                              | 4 730,0                            |
| 2800                                   | 112"                                   | 3,0                              | 28 749,0                              | 4 730,0                            |
| 3000                                   | 120"                                   | 1,0                              | 34 912,0                              | 6 509,0                            |
| 3000                                   | 120"                                   | 1,5                              | 34 912,0                              | 6 509,0                            |
| 3000                                   | 120"                                   | 3,0                              | 29 093,0                              | 6 509,0                            |
| 3200                                   | 128"                                   | 1,0                              | 70 339,0                              | 7 386,0                            |
| 3200                                   | 128"                                   | 1,5                              | 42 203,0                              | 7 386,0                            |
| 3200                                   | 128"                                   | 3,0                              | 35 169,0                              | 7 386,0                            |



MWP



MFP

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                | mm                               | mm             | kg                                |
| 690                              | 1 260          | 365,0                             | 760                              | 1 260          | 615,0                             |
| 740                              | 1 260          | 380,0                             | 810                              | 1 260          | 630,0                             |
| 810                              | 1 260          | 405,0                             | 880                              | 1 260          | 650,0                             |
| 690                              | 1 370          | 505,0                             | 760                              | 1 370          | 695,0                             |
| 740                              | 1 370          | 520,0                             | 810                              | 1 370          | 710,0                             |
| 810                              | 1 370          | 540,0                             | 880                              | 1 370          | 735,0                             |
| 710                              | 1 475          | 635,0                             | 790                              | 1 475          | 775,0                             |
| 760                              | 1 475          | 655,0                             | 840                              | 1 475          | 795,0                             |
| 830                              | 1 475          | 680,0                             | 910                              | 1 475          | 820,0                             |
| 770                              | 1 635          | 740,0                             | 850                              | 1 635          | 940,0                             |
| 810                              | 1 635          | 755,0                             | 890                              | 1 635          | 955,0                             |
| 890                              | 1 635          | 785,0                             | 970                              | 1 635          | 990,0                             |
| 770                              | 1 735          | 780,0                             | 850                              | 1 735          | 995,0                             |
| 810                              | 1 735          | 800,0                             | 890                              | 1 735          | 1 015,0                           |
| 890                              | 1 735          | 830,0                             | 970                              | 1 735          | 1 050,0                           |
| 810                              | 1 835          | 855,0                             | 890                              | 1 835          | 1 165,0                           |
| 850                              | 1 835          | 875,0                             | 930                              | 1 835          | 1 185,0                           |
| 930                              | 1 835          | 910,0                             | 1 010                            | 1 835          | 1 220,0                           |
| 850                              | 1 995          | 995,0                             | 930                              | 1 995          | 1 325,0                           |
| 930                              | 1 995          | 1 035,0                           | 1 010                            | 1 995          | 1 370,0                           |
| 970                              | 1 995          | 1 055,0                           | 1 050                            | 1 995          | 1 390,0                           |
| 890                              | 2 195          | 1 150,0                           | 980                              | 2 195          | 1 600,0                           |
| 970                              | 2 195          | 1 195,0                           | 1 060                            | 2 195          | 1 645,0                           |
| 1 010                            | 2 195          | 1 220,0                           | 1 100                            | 2 195          | 1 670,0                           |
| 910                              | 2 395          | 1 305,0                           | 1 010                            | 2 395          | 1 850,0                           |
| 990                              | 2 395          | 1 355,0                           | 1 080                            | 2 395          | 1 895,0                           |
| 1 030                            | 2 395          | 1 380,0                           | 1 120                            | 2 395          | 1 925,0                           |
| 970                              | 2 595          | 1 465,0                           | 1 070                            | 2 595          | 2 245,0                           |
| 1 050                            | 2 595          | 1 520,0                           | 1 150                            | 2 595          | 2 300,0                           |
| 1 090                            | 2 595          | 1 545,0                           | 1 190                            | 2 595          | 2 330,0                           |
| 1 050                            | 2 805          | 1 685,0                           | 1 170                            | 2 805          | 2 650,0                           |
| 1 130                            | 2 805          | 1 755,0                           | 1 240                            | 2 805          | 2 715,0                           |
| 1 170                            | 2 805          | 1 795,0                           | 1 280                            | 2 805          | 2 750,0                           |
| 1 090                            | 3 065          | 2 015,0                           | 1 210                            | 3 065          | 3 125,0                           |
| 1 170                            | 3 065          | 2 100,0                           | 1 290                            | 3 065          | 3 210,0                           |
| 1 210                            | 3 065          | 2 145,0                           | 1 330                            | 3 065          | 3 255,0                           |
| 1 130                            | 3 255          | 2 175,0                           | 1 250                            | 3 255          | 3 655,0                           |
| 1 210                            | 3 255          | 2 260,0                           | 1 330                            | 3 255          | 3 745,0                           |
| 1 250                            | 3 255          | 2 305,0                           | 1 370                            | 3 255          | 3 790,0                           |
| 1 280                            | 3 465          | 2 670,0                           | 1 410                            | 3 465          | 4 240,0                           |
| 1 280                            | 3 465          | 2 670,0                           | 1 410                            | 3 465          | 4 240,0                           |
| 1 320                            | 3 465          | 2 720,0                           | 1 450                            | 3 465          | 4 285,0                           |
| 1 250                            | 3 725          | 2 980,0                           | 1 390                            | 3 725          | 4 820,0                           |
| 1 330                            | 3 725          | 3 085,0                           | 1 470                            | 3 725          | 4 925,0                           |
| 1 370                            | 3 725          | 3 140,0                           | 1 510                            | 3 725          | 4 980,0                           |

PN 6

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Uhlový pohyb<br>Angular movement | Ohybová tuhosť<br>Angular spring rate | Treći moment<br>Frictional moments |
|---------------------------------------|---------------------------------------|----------------------------------|---------------------------------------|------------------------------------|
| DN                                    | DN                                    | ± deg (°)                        | N.m/°                                 | N.m/bar                            |
| mm                                    | inch                                  |                                  |                                       |                                    |
| 50                                    | 2"                                    | 6,0                              | 1,6                                   | 0,3                                |
| 50                                    | 2"                                    | 12,0                             | 0,8                                   | 0,3                                |
| 65                                    | 2 ½"                                  | 6,0                              | 1,5                                   | 0,5                                |
| 65                                    | 2 ½"                                  | 12,0                             | 0,8                                   | 0,5                                |
| 80                                    | 3"                                    | 3,0                              | 2,1                                   | 0,7                                |
| 80                                    | 3"                                    | 6,0                              | 1,3                                   | 0,7                                |
| 80                                    | 3"                                    | 12,0                             | 0,9                                   | 0,7                                |
| 100                                   | 4"                                    | 3,0                              | 10,0                                  | 1,1                                |
| 100                                   | 4"                                    | 6,0                              | 5,5                                   | 1,1                                |
| 100                                   | 4"                                    | 12,0                             | 3,8                                   | 1,1                                |
| 125                                   | 5"                                    | 3,0                              | 35,0                                  | 2,0                                |
| 125                                   | 5"                                    | 6,0                              | 19,0                                  | 2,0                                |
| 125                                   | 5"                                    | 12,0                             | 13,0                                  | 2,0                                |
| 150                                   | 6"                                    | 3,0                              | 66,0                                  | 2,8                                |
| 150                                   | 6"                                    | 6,0                              | 37,0                                  | 2,8                                |
| 150                                   | 6"                                    | 12,0                             | 25,0                                  | 2,8                                |
| 200                                   | 8"                                    | 3,0                              | 83,0                                  | 6,3                                |
| 200                                   | 8"                                    | 6,0                              | 46,0                                  | 6,3                                |
| 200                                   | 8"                                    | 12,0                             | 32,0                                  | 6,3                                |
| 250                                   | 10"                                   | 3,0                              | 132,0                                 | 9,6                                |
| 250                                   | 10"                                   | 6,0                              | 73,0                                  | 9,6                                |
| 250                                   | 10"                                   | 12,0                             | 51,0                                  | 9,6                                |
| 300                                   | 12"                                   | 2,0                              | 186,0                                 | 13,0                               |
| 300                                   | 12"                                   | 4,0                              | 103,0                                 | 13,0                               |
| 300                                   | 12"                                   | 6,0                              | 71,0                                  | 13,0                               |
| 350                                   | 14"                                   | 2,0                              | 185,0                                 | 16,0                               |
| 350                                   | 14"                                   | 4,0                              | 103,0                                 | 16,0                               |
| 350                                   | 14"                                   | 6,0                              | 71,0                                  | 16,0                               |
| 400                                   | 16"                                   | 2,0                              | 449,0                                 | 32,0                               |
| 400                                   | 16"                                   | 4,0                              | 321,0                                 | 32,0                               |
| 400                                   | 16"                                   | 6,0                              | 204,0                                 | 32,0                               |
| 500                                   | 20"                                   | 2,0                              | 924,0                                 | 49,0                               |
| 500                                   | 20"                                   | 4,0                              | 660,0                                 | 49,0                               |
| 500                                   | 20"                                   | 6,0                              | 420,0                                 | 49,0                               |
| 600                                   | 24"                                   | 2,0                              | 1 401,0                               | 70,0                               |
| 600                                   | 24"                                   | 4,0                              | 1 001,0                               | 70,0                               |
| 600                                   | 24"                                   | 6,0                              | 637,0                                 | 70,0                               |
| 700                                   | 28"                                   | 1,5                              | 2 461,0                               | 125,0                              |
| 700                                   | 28"                                   | 2,0                              | 1 640,0                               | 125,0                              |
| 700                                   | 28"                                   | 4,0                              | 1 094,0                               | 125,0                              |
| 800                                   | 32"                                   | 1,5                              | 3 275,0                               | 163,0                              |
| 800                                   | 32"                                   | 2,0                              | 2 184,0                               | 163,0                              |
| 800                                   | 32"                                   | 4,0                              | 1 456,0                               | 163,0                              |
| 900                                   | 36"                                   | 1,5                              | 4 182,0                               | 256,0                              |
| 900                                   | 36"                                   | 2,0                              | 2 788,0                               | 256,0                              |
| 900                                   | 36"                                   | 4,0                              | 1 859,0                               | 256,0                              |



MWP

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 260                              | 220            | 8,0                               |
| 310                              | 220            | 8,0                               |
| 310                              | 230            | 10,0                              |
| 360                              | 230            | 10,0                              |
| 310                              | 250            | 12,0                              |
| 350                              | 250            | 13,0                              |
| 390                              | 250            | 13,0                              |
| 320                              | 310            | 18,0                              |
| 370                              | 310            | 19,0                              |
| 420                              | 310            | 20,0                              |
| 320                              | 340            | 21,0                              |
| 370                              | 340            | 22,0                              |
| 420                              | 340            | 24,0                              |
| 320                              | 380            | 32,0                              |
| 380                              | 380            | 34,0                              |
| 430                              | 380            | 36,0                              |
| 350                              | 450            | 42,0                              |
| 410                              | 450            | 45,0                              |
| 460                              | 450            | 48,0                              |
| 350                              | 520            | 53,0                              |
| 410                              | 520            | 57,0                              |
| 480                              | 520            | 60,0                              |
| 380                              | 570            | 85,0                              |
| 440                              | 570            | 90,0                              |
| 510                              | 570            | 95,0                              |
| 390                              | 630            | 95,0                              |
| 460                              | 630            | 105,0                             |
| 530                              | 630            | 110,0                             |
| 460                              | 730            | 140,0                             |
| 510                              | 730            | 150,0                             |
| 610                              | 730            | 160,0                             |
| 490                              | 830            | 175,0                             |
| 540                              | 830            | 180,0                             |
| 640                              | 830            | 200,0                             |
| 490                              | 950            | 235,0                             |
| 540                              | 950            | 245,0                             |
| 640                              | 950            | 265,0                             |
| 470                              | 1 100          | 315,0                             |
| 520                              | 1 100          | 330,0                             |
| 590                              | 1 100          | 345,0                             |
| 480                              | 1 260          | 400,0                             |
| 530                              | 1 260          | 415,0                             |
| 600                              | 1 260          | 435,0                             |
| 500                              | 1 370          | 550,0                             |
| 550                              | 1 370          | 570,0                             |
| 620                              | 1 370          | 595,0                             |



MFP

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 90                               | 210            | 6,0                               |
| 140                              | 210            | 7,0                               |
| 100                              | 230            | 7,0                               |
| 150                              | 230            | 8,0                               |
| 100                              | 260            | 10,0                              |
| 140                              | 260            | 11,0                              |
| 180                              | 260            | 11,0                              |
| 110                              | 320            | 14,0                              |
| 160                              | 320            | 15,0                              |
| 210                              | 320            | 16,0                              |
| 110                              | 350            | 17,0                              |
| 160                              | 350            | 19,0                              |
| 210                              | 350            | 20,0                              |
| 120                              | 375            | 22,0                              |
| 180                              | 375            | 25,0                              |
| 230                              | 375            | 27,0                              |
| 140                              | 430            | 31,0                              |
| 190                              | 430            | 34,0                              |
| 250                              | 430            | 37,0                              |
| 140                              | 515            | 41,0                              |
| 200                              | 515            | 44,0                              |
| 260                              | 515            | 48,0                              |
| 150                              | 580            | 57,0                              |
| 220                              | 580            | 65,0                              |
| 280                              | 580            | 70,0                              |
| 150                              | 630            | 70,0                              |
| 220                              | 630            | 80,0                              |
| 300                              | 630            | 85,0                              |
| 200                              | 680            | 100,0                             |
| 240                              | 680            | 105,0                             |
| 340                              | 680            | 120,0                             |
| 200                              | 785            | 125,0                             |
| 240                              | 785            | 135,0                             |
| 340                              | 785            | 150,0                             |
| 210                              | 895            | 160,0                             |
| 250                              | 895            | 170,0                             |
| 350                              | 895            | 190,0                             |
| 230                              | 1 000          | 210,0                             |
| 240                              | 1 000          | 215,0                             |
| 310                              | 1 000          | 235,0                             |
| 230                              | 1 115          | 250,0                             |
| 250                              | 1 115          | 255,0                             |
| 320                              | 1 115          | 275,0                             |
| 280                              | 1 285          | 320,0                             |
| 280                              | 1 285          | 320,0                             |
| 330                              | 1 285          | 340,0                             |

PN 6

| Menovitá svetlost'<br>Nominal diameter | Menovitá svetlost'<br>Nominal diameter | Uhlový pohyb<br>Angular movement | Ohybová tuhosť<br>Angular spring rate | Treći moment<br>Frictional moments |
|----------------------------------------|----------------------------------------|----------------------------------|---------------------------------------|------------------------------------|
| DN                                     | DN                                     | ± deg (°)                        | N.m/°                                 | N.m/bar                            |
| mm                                     | inch                                   |                                  |                                       |                                    |
| 1000                                   | 40"                                    | 1,5                              | 3 886,0                               | 315,0                              |
| 1000                                   | 40"                                    | 2,0                              | 3 895,0                               | 315,0                              |
| 1000                                   | 40"                                    | 3,0                              | 2 596,0                               | 315,0                              |
| 1100                                   | 44"                                    | 1,5                              | 7 098,0                               | 458,0                              |
| 1100                                   | 44"                                    | 2,0                              | 4 732,0                               | 458,0                              |
| 1100                                   | 44"                                    | 3,0                              | 3 155,0                               | 458,0                              |
| 1200                                   | 48"                                    | 1,5                              | 7 676,0                               | 543,0                              |
| 1200                                   | 48"                                    | 2,0                              | 5 118,0                               | 543,0                              |
| 1200                                   | 48"                                    | 3,0                              | 3 412,0                               | 543,0                              |
| 1300                                   | 52"                                    | 1,0                              | 6 200,0                               | 751,0                              |
| 1300                                   | 52"                                    | 1,5                              | 6 210,0                               | 751,0                              |
| 1300                                   | 52"                                    | 3,0                              | 4 140,0                               | 751,0                              |
| 1400                                   | 56"                                    | 1,0                              | 10 240,0                              | 865,0                              |
| 1400                                   | 56"                                    | 1,5                              | 7 680,0                               | 865,0                              |
| 1400                                   | 56"                                    | 3,0                              | 5 120,0                               | 865,0                              |
| 1500                                   | 60"                                    | 1,0                              | 12 485,0                              | 1 128,0                            |
| 1500                                   | 60"                                    | 1,5                              | 9 364,0                               | 1 128,0                            |
| 1500                                   | 60"                                    | 3,0                              | 6 243,0                               | 1 128,0                            |
| 1600                                   | 64"                                    | 1,0                              | 15 039,0                              | 1 277,0                            |
| 1600                                   | 64"                                    | 1,5                              | 9 024,0                               | 1 277,0                            |
| 1600                                   | 64"                                    | 3,0                              | 7 520,0                               | 1 277,0                            |
| 1800                                   | 72"                                    | 1,0                              | 21 108,0                              | 1 601,0                            |
| 1800                                   | 72"                                    | 1,5                              | 12 665,0                              | 1 601,0                            |
| 1800                                   | 72"                                    | 3,0                              | 10 554,0                              | 1 601,0                            |
| 2000                                   | 80"                                    | 1,0                              | 28 666,0                              | 2 455,0                            |
| 2000                                   | 80"                                    | 1,5                              | 17 190,0                              | 2 455,0                            |
| 2000                                   | 80"                                    | 3,0                              | 14 333,0                              | 2 455,0                            |
| 2200                                   | 88"                                    | 1,0                              | 37 841,0                              | 2 954,0                            |
| 2200                                   | 88"                                    | 1,5                              | 22 705,0                              | 2 954,0                            |
| 2200                                   | 88"                                    | 3,0                              | 18 921,0                              | 2 954,0                            |
| 2400                                   | 96"                                    | 1,0                              | 40 350,0                              | 3 508,0                            |
| 2400                                   | 96"                                    | 1,5                              | 24 210,0                              | 3 508,0                            |
| 2400                                   | 96"                                    | 3,0                              | 20 175,0                              | 3 508,0                            |
| 2600                                   | 104"                                   | 1,0                              | 63 798,0                              | 4 924,0                            |
| 2600                                   | 104"                                   | 1,5                              | 38 279,0                              | 4 924,0                            |
| 2600                                   | 104"                                   | 3,0                              | 31 899,0                              | 4 924,0                            |
| 2800                                   | 112"                                   | 1,0                              | 95 886,0                              | 5 678,0                            |
| 2800                                   | 112"                                   | 1,5                              | 57 532,0                              | 5 678,0                            |
| 2800                                   | 112"                                   | 3,0                              | 47 943,0                              | 5 678,0                            |



MWP



MFP

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                | mm                               | mm             | kg                                |
| 930                              | 1 290          | 670,0                             | 1 000                            | 1 290          | 805,0                             |
| 980                              | 1 290          | 695,0                             | 1 050                            | 1 290          | 830,0                             |
| 1 060                            | 1 290          | 730,0                             | 1 120                            | 1 290          | 860,0                             |
| 970                              | 1 370          | 740,0                             | 1 040                            | 1 370          | 940,0                             |
| 1 020                            | 1 370          | 760,0                             | 1 090                            | 1 370          | 960,0                             |
| 1 100                            | 1 370          | 795,0                             | 1 170                            | 1 370          | 995,0                             |
| 1 050                            | 1 505          | 1 035,0                           | 1 130                            | 1 505          | 1 180,0                           |
| 1 100                            | 1 505          | 1 060,0                           | 1 180                            | 1 505          | 1 205,0                           |
| 1 180                            | 1 505          | 1 095,0                           | 1 260                            | 1 505          | 1 245,0                           |
| 1 110                            | 1 695          | 1 275,0                           | 1 190                            | 1 695          | 1 545,0                           |
| 1 160                            | 1 695          | 1 315,0                           | 1 240                            | 1 695          | 1 585,0                           |
| 1 240                            | 1 695          | 1 370,0                           | 1 320                            | 1 695          | 1 640,0                           |
| 1 140                            | 1 795          | 1 440,0                           | 1 220                            | 1 795          | 1 765,0                           |
| 1 180                            | 1 795          | 1 470,0                           | 1 260                            | 1 795          | 1 795,0                           |
| 1 260                            | 1 795          | 1 530,0                           | 1 340                            | 1 795          | 1 855,0                           |
| 1 180                            | 1 895          | 1 595,0                           | 1 260                            | 1 895          | 1 980,0                           |
| 1 220                            | 1 895          | 1 630,0                           | 1 300                            | 1 895          | 2 015,0                           |
| 1 300                            | 1 895          | 1 690,0                           | 1 380                            | 1 895          | 2 075,0                           |
| 1 240                            | 2 055          | 1 860,0                           | 1 320                            | 2 055          | 2 270,0                           |
| 1 320                            | 2 055          | 1 930,0                           | 1 400                            | 2 055          | 2 340,0                           |
| 1 360                            | 2 055          | 1 965,0                           | 1 440                            | 2 055          | 2 380,0                           |
| 1 300                            | 2 255          | 2 280,0                           | 1 390                            | 2 255          | 2 915,0                           |
| 1 380                            | 2 255          | 2 365,0                           | 1 470                            | 2 255          | 3 000,0                           |
| 1 420                            | 2 255          | 2 405,0                           | 1 510                            | 2 255          | 3 040,0                           |
| 1 420                            | 2 455          | 2 705,0                           | 1 510                            | 2 455          | 3 570,0                           |
| 1 500                            | 2 455          | 2 795,0                           | 1 590                            | 2 455          | 3 660,0                           |
| 1 540                            | 2 455          | 2 840,0                           | 1 630                            | 2 455          | 3 705,0                           |
| 1 480                            | 2 715          | 3 025,0                           | 1 580                            | 2 715          | 4 185,0                           |
| 1 560                            | 2 715          | 3 130,0                           | 1 660                            | 2 715          | 4 290,0                           |
| 1 600                            | 2 715          | 3 185,0                           | 1 700                            | 2 715          | 4 340,0                           |
| 1 520                            | 2 925          | 3 915,0                           | 1 640                            | 2 925          | 5 085,0                           |
| 1 600                            | 2 925          | 4 035,0                           | 1 720                            | 2 925          | 5 200,0                           |
| 1 640                            | 2 925          | 4 095,0                           | 1 760                            | 2 925          | 5 260,0                           |
| 1 620                            | 3 125          | 4 600,0                           | 1 740                            | 3 125          | 6 110,0                           |
| 1 700                            | 3 125          | 4 745,0                           | 1 820                            | 3 125          | 6 255,0                           |
| 1 740                            | 3 125          | 4 820,0                           | 1 860                            | 3 125          | 6 325,0                           |
| 1 720                            | 3 315          | 5 145,0                           | 1 840                            | 3 315          | 6 950,0                           |
| 1 800                            | 3 315          | 5 300,0                           | 1 920                            | 3 315          | 7 100,0                           |
| 1 840                            | 3 315          | 5 380,0                           | 1 960                            | 3 315          | 7 180,0                           |

PN 10

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Uhlový pohyb<br>Angular movement | Ohybová tuhosť<br>Angular spring rate | Treći moment<br>Frictional moments |
|---------------------------------------|---------------------------------------|----------------------------------|---------------------------------------|------------------------------------|
| DN                                    | DN                                    | ± deg (°)                        | N.m/°                                 | N.m/bar                            |
| mm                                    | inch                                  |                                  |                                       |                                    |
| 50                                    | 2"                                    | 6,0                              | 1,6                                   | 0,4                                |
| 50                                    | 2"                                    | 12,0                             | 0,8                                   | 0,4                                |
| 65                                    | 2 ½"                                  | 6,0                              | 1,5                                   | 0,6                                |
| 65                                    | 2 ½"                                  | 12,0                             | 0,8                                   | 0,6                                |
| 80                                    | 3"                                    | 3,0                              | 2,1                                   | 0,8                                |
| 80                                    | 3"                                    | 6,0                              | 1,3                                   | 0,8                                |
| 80                                    | 3"                                    | 12,0                             | 0,9                                   | 0,8                                |
| 100                                   | 4"                                    | 3,0                              | 10,0                                  | 1,4                                |
| 100                                   | 4"                                    | 6,0                              | 5,5                                   | 1,4                                |
| 100                                   | 4"                                    | 12,0                             | 3,8                                   | 1,4                                |
| 125                                   | 5"                                    | 3,0                              | 35,0                                  | 2,7                                |
| 125                                   | 5"                                    | 6,0                              | 19,0                                  | 2,7                                |
| 125                                   | 5"                                    | 12,0                             | 13,0                                  | 2,7                                |
| 150                                   | 6"                                    | 3,0                              | 66,0                                  | 3,8                                |
| 150                                   | 6"                                    | 6,0                              | 37,0                                  | 3,8                                |
| 150                                   | 6"                                    | 12,0                             | 25,0                                  | 3,8                                |
| 200                                   | 8"                                    | 3,0                              | 83,0                                  | 6,3                                |
| 200                                   | 8"                                    | 6,0                              | 46,0                                  | 6,3                                |
| 200                                   | 8"                                    | 12,0                             | 32,0                                  | 6,3                                |
| 250                                   | 10"                                   | 3,0                              | 132,0                                 | 9,6                                |
| 250                                   | 10"                                   | 6,0                              | 73,0                                  | 9,6                                |
| 250                                   | 10"                                   | 12,0                             | 51,0                                  | 9,6                                |
| 300                                   | 12"                                   | 2,0                              | 280,0                                 | 20,0                               |
| 300                                   | 12"                                   | 4,0                              | 156,0                                 | 20,0                               |
| 300                                   | 12"                                   | 6,0                              | 108,0                                 | 20,0                               |
| 350                                   | 14"                                   | 2,0                              | 279,0                                 | 24,0                               |
| 350                                   | 14"                                   | 4,0                              | 155,0                                 | 24,0                               |
| 350                                   | 14"                                   | 6,0                              | 107,0                                 | 24,0                               |
| 400                                   | 16"                                   | 2,0                              | 449,0                                 | 32,0                               |
| 400                                   | 16"                                   | 4,0                              | 321,0                                 | 32,0                               |
| 400                                   | 16"                                   | 6,0                              | 204,0                                 | 32,0                               |
| 500                                   | 20"                                   | 2,0                              | 1 019,0                               | 49,0                               |
| 500                                   | 20"                                   | 4,0                              | 728,0                                 | 49,0                               |
| 500                                   | 20"                                   | 6,0                              | 463,0                                 | 49,0                               |
| 600                                   | 24"                                   | 2,0                              | 1 546,0                               | 93,0                               |
| 600                                   | 24"                                   | 4,0                              | 1 104,0                               | 93,0                               |
| 600                                   | 24"                                   | 6,0                              | 703,0                                 | 93,0                               |
| 700                                   | 28"                                   | 1,5                              | 3 742,0                               | 126,0                              |
| 700                                   | 28"                                   | 2,0                              | 2 495,0                               | 126,0                              |
| 700                                   | 28"                                   | 4,0                              | 1 663,0                               | 126,0                              |
| 800                                   | 32"                                   | 1,5                              | 4 979,0                               | 204,0                              |
| 800                                   | 32"                                   | 2,0                              | 3 320,0                               | 204,0                              |
| 800                                   | 32"                                   | 4,0                              | 2 213,0                               | 204,0                              |
| 900                                   | 36"                                   | 1,5                              | 6 356,0                               | 308,0                              |
| 900                                   | 36"                                   | 2,0                              | 4 237,0                               | 308,0                              |
| 900                                   | 36"                                   | 4,0                              | 2 825,0                               | 308,0                              |



MWP

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 260                              | 220            | 12,0                              |
| 310                              | 220            | 12,0                              |
| 310                              | 230            | 14,0                              |
| 360                              | 230            | 15,0                              |
| 310                              | 250            | 16,0                              |
| 350                              | 250            | 17,0                              |
| 390                              | 250            | 18,0                              |
| 330                              | 310            | 25,0                              |
| 380                              | 310            | 27,0                              |
| 430                              | 310            | 28,0                              |
| 330                              | 340            | 29,0                              |
| 380                              | 340            | 31,0                              |
| 430                              | 340            | 33,0                              |
| 330                              | 380            | 38,0                              |
| 390                              | 380            | 41,0                              |
| 440                              | 380            | 44,0                              |
| 360                              | 450            | 55,0                              |
| 420                              | 450            | 59,0                              |
| 470                              | 450            | 60,0                              |
| 360                              | 520            | 70,0                              |
| 420                              | 520            | 75,0                              |
| 490                              | 520            | 80,0                              |
| 410                              | 570            | 105,0                             |
| 470                              | 570            | 110,0                             |
| 540                              | 570            | 120,0                             |
| 400                              | 630            | 120,0                             |
| 470                              | 630            | 130,0                             |
| 540                              | 630            | 140,0                             |
| 480                              | 730            | 195,0                             |
| 530                              | 730            | 200,0                             |
| 630                              | 730            | 215,0                             |
| 500                              | 830            | 270,0                             |
| 550                              | 830            | 280,0                             |
| 650                              | 830            | 300,0                             |
| 520                              | 970            | 385,0                             |
| 570                              | 970            | 400,0                             |
| 670                              | 970            | 430,0                             |
| 510                              | 1 140          | 600,0                             |
| 560                              | 1 140          | 625,0                             |
| 640                              | 1 140          | 655,0                             |
| 530                              | 1 300          | 805,0                             |
| 580                              | 1 300          | 830,0                             |
| 660                              | 1 300          | 870,0                             |
| 910                              | 1 245          | 985,0                             |
| 960                              | 1 245          | 1 015,0                           |
| 1 040                            | 1 245          | 1 060,0                           |



MFP

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 110                              | 235            | 9,0                               |
| 150                              | 235            | 9,0                               |
| 110                              | 255            | 10,0                              |
| 160                              | 255            | 11,0                              |
| 110                              | 270            | 13,0                              |
| 150                              | 270            | 13,0                              |
| 190                              | 270            | 14,0                              |
| 120                              | 330            | 18,0                              |
| 170                              | 330            | 20,0                              |
| 220                              | 330            | 21,0                              |
| 140                              | 360            | 23,0                              |
| 170                              | 360            | 24,0                              |
| 220                              | 360            | 26,0                              |
| 140                              | 395            | 30,0                              |
| 180                              | 395            | 32,0                              |
| 230                              | 395            | 35,0                              |
| 140                              | 450            | 40,0                              |
| 200                              | 450            | 43,0                              |
| 260                              | 450            | 47,0                              |
| 150                              | 535            | 52,0                              |
| 210                              | 535            | 56,0                              |
| 270                              | 535            | 60,0                              |
| 190                              | 585            | 75,0                              |
| 230                              | 585            | 80,0                              |
| 290                              | 585            | 85,0                              |
| 190                              | 645            | 95,0                              |
| 230                              | 645            | 100,0                             |
| 310                              | 645            | 110,0                             |
| 220                              | 705            | 130,0                             |
| 260                              | 705            | 135,0                             |
| 360                              | 705            | 150,0                             |
| 230                              | 810            | 195,0                             |
| 270                              | 810            | 200,0                             |
| 370                              | 810            | 220,0                             |
| 250                              | 990            | 270,0                             |
| 280                              | 990            | 280,0                             |
| 380                              | 990            | 305,0                             |
| 250                              | 1 175          | 380,0                             |
| 280                              | 1 175          | 395,0                             |
| 360                              | 1 175          | 430,0                             |
| 300                              | 1 295          | 515,0                             |
| 300                              | 1 295          | 515,0                             |
| 380                              | 1 295          | 555,0                             |
| 1 010                            | 1 245          | 1 355,0                           |
| 1 060                            | 1 245          | 1 380,0                           |
| 1 130                            | 1 245          | 1 420,0                           |

PN 10

| Menovitá svetlost'<br>Nominal diameter | Menovitá svetlost'<br>Nominal diameter | Uhlový pohyb<br>Angular movement | Ohybová tuhosť<br>Angular spring rate | Treći moment<br>Frictional moments |
|----------------------------------------|----------------------------------------|----------------------------------|---------------------------------------|------------------------------------|
| DN                                     | DN                                     | ± deg (°)                        | N.m/°                                 | N.m/bar                            |
| mm                                     | inch                                   |                                  |                                       |                                    |
| 1000                                   | 40"                                    | 1,5                              | 7 807,0                               | 442,0                              |
| 1000                                   | 40"                                    | 2,0                              | 5 205,0                               | 442,0                              |
| 1000                                   | 40"                                    | 3,0                              | 3 470,0                               | 442,0                              |
| 1100                                   | 44"                                    | 1,5                              | 9 460,0                               | 611,0                              |
| 1100                                   | 44"                                    | 2,0                              | 6 306,0                               | 611,0                              |
| 1100                                   | 44"                                    | 3,0                              | 4 204,0                               | 611,0                              |
| 1200                                   | 48"                                    | 1,5                              | 10 231,0                              | 724,0                              |
| 1200                                   | 48"                                    | 2,0                              | 6 821,0                               | 724,0                              |
| 1200                                   | 48"                                    | 3,0                              | 4 547,0                               | 724,0                              |
| 1300                                   | 52"                                    | 1,0                              | 12 323,0                              | 858,0                              |
| 1300                                   | 52"                                    | 1,5                              | 9 243,0                               | 858,0                              |
| 1300                                   | 52"                                    | 3,0                              | 6 162,0                               | 858,0                              |
| 1400                                   | 56"                                    | 1,0                              | 25 041,0                              | 1 237,0                            |
| 1400                                   | 56"                                    | 1,5                              | 18 781,0                              | 1 237,0                            |
| 1400                                   | 56"                                    | 3,0                              | 12 521,0                              | 1 237,0                            |
| 1500                                   | 60"                                    | 1,0                              | 30 530,0                              | 1 412,0                            |
| 1500                                   | 60"                                    | 1,5                              | 22 898,0                              | 1 412,0                            |
| 1500                                   | 60"                                    | 3,0                              | 15 265,0                              | 1 412,0                            |
| 1600                                   | 64"                                    | 1,0                              | 36 770,0                              | 1 598,0                            |
| 1600                                   | 64"                                    | 1,5                              | 22 062,0                              | 1 598,0                            |
| 1600                                   | 64"                                    | 3,0                              | 18 385,0                              | 1 598,0                            |
| 1800                                   | 72"                                    | 1,0                              | 51 518,0                              | 2 402,0                            |
| 1800                                   | 72"                                    | 1,5                              | 30 911,0                              | 2 402,0                            |
| 1800                                   | 72"                                    | 3,0                              | 25 759,0                              | 2 402,0                            |
| 2000                                   | 80"                                    | 1,0                              | 69 966,0                              | 2 945,0                            |
| 2000                                   | 80"                                    | 1,5                              | 41 980,0                              | 2 945,0                            |
| 2000                                   | 80"                                    | 3,0                              | 34 983,0                              | 2 945,0                            |
| 2200                                   | 88"                                    | 1,0                              | 92 883,0                              | 4 137,0                            |
| 2200                                   | 88"                                    | 1,5                              | 55 730,0                              | 4 137,0                            |
| 2200                                   | 88"                                    | 3,0                              | 46 441,0                              | 4 137,0                            |
| 2400                                   | 96"                                    | 1,0                              | 99 037,0                              | 4 913,0                            |
| 2400                                   | 96"                                    | 1,5                              | 59 422,0                              | 4 913,0                            |
| 2400                                   | 96"                                    | 3,0                              | 49 519,0                              | 4 913,0                            |



MWP



MFP

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                | mm                               | mm             | kg                                |
| 980                              | 1 350          | 1 040,0                           | 1 080                            | 1 350          | 1 480,0                           |
| 1 030                            | 1 350          | 1 075,0                           | 1 130                            | 1 350          | 1 510,0                           |
| 1 100                            | 1 350          | 1 120,0                           | 1 200                            | 1 350          | 1 555,0                           |
| 1 020                            | 1 520          | 1 345,0                           | 1 120                            | 1 520          | 1 900,0                           |
| 1 070                            | 1 520          | 1 385,0                           | 1 170                            | 1 520          | 1 940,0                           |
| 1 140                            | 1 520          | 1 440,0                           | 1 250                            | 1 520          | 2 005,0                           |
| 1 060                            | 1 625          | 1 410,0                           | 1 160                            | 1 625          | 2 085,0                           |
| 1 110                            | 1 625          | 1 450,0                           | 1 210                            | 1 625          | 2 125,0                           |
| 1 180                            | 1 625          | 1 510,0                           | 1 290                            | 1 625          | 2 185,0                           |
| 1 200                            | 1 755          | 1 745,0                           | 1 310                            | 1 755          | 2 540,0                           |
| 1 240                            | 1 755          | 1 785,0                           | 1 350                            | 1 755          | 2 580,0                           |
| 1 320                            | 1 755          | 1 860,0                           | 1 430                            | 1 755          | 2 655,0                           |
| 1 320                            | 1 855          | 2 125,0                           | 1 440                            | 1 855          | 3 015,0                           |
| 1 360                            | 1 855          | 2 170,0                           | 1 480                            | 1 855          | 3 060,0                           |
| 1 450                            | 1 855          | 2 260,0                           | 1 570                            | 1 855          | 3 155,0                           |
| 1 380                            | 1 955          | 2 475,0                           | 1 500                            | 1 955          | 3 555,0                           |
| 1 420                            | 1 955          | 2 520,0                           | 1 550                            | 1 955          | 3 615,0                           |
| 1 510                            | 1 955          | 2 625,0                           | 1 630                            | 1 955          | 3 710,0                           |
| 1 440                            | 2 055          | 2 885,0                           | 1 570                            | 2 055          | 4 105,0                           |
| 1 520                            | 2 055          | 2 995,0                           | 1 650                            | 2 055          | 4 215,0                           |
| 1 570                            | 2 055          | 3 055,0                           | 1 690                            | 2 055          | 4 265,0                           |
| 1 560                            | 2 315          | 4 330,0                           | 1 700                            | 2 315          | 5 635,0                           |
| 1 640                            | 2 315          | 4 455,0                           | 1 780                            | 2 315          | 5 765,0                           |
| 1 690                            | 2 315          | 4 530,0                           | 1 830                            | 2 315          | 5 840,0                           |
| 1 620                            | 2 515          | 4 675,0                           | 1 770                            | 2 515          | 6 450,0                           |
| 1 700                            | 2 515          | 4 815,0                           | 1 860                            | 2 515          | 6 605,0                           |
| 1 750                            | 2 515          | 4 890,0                           | 1 900                            | 2 515          | 6 670,0                           |
| 1 760                            | 2 715          | 5 405,0                           | 1 920                            | 2 715          | 7 850,0                           |
| 1 840                            | 2 715          | 5 565,0                           | 2 010                            | 2 715          | 8 020,0                           |
| 1 890                            | 2 715          | 5 655,0                           | 2 050                            | 2 715          | 8 100,0                           |
| 1 900                            | 2 985          | 6 920,0                           | 2 080                            | 2 985          | 9 645,0                           |
| 1 980                            | 2 985          | 7 105,0                           | 2 160                            | 2 985          | 9 825,0                           |
| 2 030                            | 2 985          | 7 210,0                           | 2 200                            | 2 985          | 9 920,0                           |

# PN 16

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Uhlový pohyb<br>Angular movement | Ohybová tuhosť<br>Angular spring rate | Treći moment<br>Frictional moments |
|---------------------------------------|---------------------------------------|----------------------------------|---------------------------------------|------------------------------------|
| DN                                    | DN                                    | ± deg (°)                        | N.m/°                                 | N.m/bar                            |
| mm                                    | inch                                  |                                  |                                       |                                    |
| 50                                    | 2"                                    | 6,0                              | 1,6                                   | 0,4                                |
| 50                                    | 2"                                    | 12,0                             | 0,8                                   | 0,4                                |
| 65                                    | 2 ½"                                  | 6,0                              | 1,5                                   | 0,6                                |
| 65                                    | 2 ½"                                  | 12,0                             | 0,8                                   | 0,6                                |
| 80                                    | 3"                                    | 3,0                              | 3,2                                   | 0,8                                |
| 80                                    | 3"                                    | 6,0                              | 1,9                                   | 0,8                                |
| 80                                    | 3"                                    | 12,0                             | 1,4                                   | 0,8                                |
| 100                                   | 4"                                    | 3,0                              | 15,0                                  | 1,4                                |
| 100                                   | 4"                                    | 6,0                              | 8,4                                   | 1,4                                |
| 100                                   | 4"                                    | 12,0                             | 5,8                                   | 1,4                                |
| 125                                   | 5"                                    | 3,0                              | 53,0                                  | 2,7                                |
| 125                                   | 5"                                    | 6,0                              | 29,0                                  | 2,7                                |
| 125                                   | 5"                                    | 12,0                             | 20,0                                  | 2,7                                |
| 150                                   | 6"                                    | 3,0                              | 100,0                                 | 3,8                                |
| 150                                   | 6"                                    | 6,0                              | 56,0                                  | 3,8                                |
| 150                                   | 6"                                    | 12,0                             | 39,0                                  | 3,8                                |
| 200                                   | 8"                                    | 3,0                              | 126,0                                 | 6,4                                |
| 200                                   | 8"                                    | 6,0                              | 70,0                                  | 6,4                                |
| 200                                   | 8"                                    | 12,0                             | 48,0                                  | 6,4                                |
| 250                                   | 10"                                   | 3,0                              | 199,0                                 | 14,0                               |
| 250                                   | 10"                                   | 6,0                              | 111,0                                 | 14,0                               |
| 250                                   | 10"                                   | 12,0                             | 77,0                                  | 14,0                               |
| 300                                   | 12"                                   | 2,0                              | 280,0                                 | 20,0                               |
| 300                                   | 12"                                   | 4,0                              | 156,0                                 | 20,0                               |
| 300                                   | 12"                                   | 6,0                              | 108,0                                 | 20,0                               |
| 350                                   | 14"                                   | 2,0                              | 279,0                                 | 24,0                               |
| 350                                   | 14"                                   | 4,0                              | 155,0                                 | 24,0                               |
| 350                                   | 14"                                   | 6,0                              | 107,0                                 | 24,0                               |
| 400                                   | 16"                                   | 2,0                              | 678,0                                 | 43,0                               |
| 400                                   | 16"                                   | 4,0                              | 484,0                                 | 43,0                               |
| 400                                   | 16"                                   | 6,0                              | 308,0                                 | 43,0                               |
| 500                                   | 20"                                   | 2,0                              | 1 407,0                               | 65,0                               |
| 500                                   | 20"                                   | 4,0                              | 1 005,0                               | 65,0                               |
| 500                                   | 20"                                   | 6,0                              | 640,0                                 | 65,0                               |
| 600                                   | 24"                                   | 2,0                              | 2 133,0                               | 116,0                              |
| 600                                   | 24"                                   | 4,0                              | 1 523,0                               | 116,0                              |
| 600                                   | 24"                                   | 6,0                              | 969,0                                 | 116,0                              |
| 700                                   | 28"                                   | 1,5                              | 4 778,0                               | 157,0                              |
| 700                                   | 28"                                   | 2,0                              | 3 185,0                               | 157,0                              |
| 700                                   | 28"                                   | 4,0                              | 2 123,0                               | 157,0                              |
| 800                                   | 32"                                   | 1,5                              | 6 354,0                               | 245,0                              |
| 800                                   | 32"                                   | 2,0                              | 4 236,0                               | 245,0                              |
| 800                                   | 32"                                   | 4,0                              | 2 824,0                               | 245,0                              |
| 900                                   | 36"                                   | 1,5                              | 8 108,0                               | 411,0                              |
| 900                                   | 36"                                   | 2,0                              | 5 405,0                               | 411,0                              |
| 900                                   | 36"                                   | 4,0                              | 3 604,0                               | 411,0                              |



**MWP**

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 260                              | 220            | 12,0                              |
| 310                              | 220            | 12,0                              |
| 310                              | 230            | 14,0                              |
| 360                              | 230            | 15,0                              |
| 310                              | 250            | 17,0                              |
| 350                              | 250            | 17,0                              |
| 390                              | 250            | 18,0                              |
| 340                              | 310            | 29,0                              |
| 390                              | 310            | 31,0                              |
| 440                              | 310            | 32,0                              |
| 340                              | 340            | 34,0                              |
| 390                              | 340            | 36,0                              |
| 440                              | 340            | 38,0                              |
| 350                              | 380            | 45,0                              |
| 400                              | 380            | 48,0                              |
| 460                              | 380            | 51,0                              |
| 370                              | 450            | 65,0                              |
| 430                              | 450            | 65,0                              |
| 490                              | 450            | 70,0                              |
| 380                              | 520            | 90,0                              |
| 440                              | 520            | 95,0                              |
| 510                              | 520            | 100,0                             |
| 420                              | 570            | 125,0                             |
| 490                              | 570            | 135,0                             |
| 560                              | 570            | 145,0                             |
| 430                              | 630            | 160,0                             |
| 500                              | 630            | 170,0                             |
| 570                              | 630            | 180,0                             |
| 520                              | 750            | 255,0                             |
| 570                              | 750            | 265,0                             |
| 670                              | 750            | 285,0                             |
| 540                              | 860            | 395,0                             |
| 590                              | 860            | 405,0                             |
| 690                              | 860            | 430,0                             |
| 560                              | 990            | 585,0                             |
| 610                              | 990            | 600,0                             |
| 710                              | 990            | 635,0                             |
| 560                              | 1 150          | 755,0                             |
| 610                              | 1 150          | 780,0                             |
| 680                              | 1 150          | 815,0                             |
| 580                              | 1 320          | 70,0                              |
| 630                              | 1 320          | 100,0                             |
| 700                              | 1 320          | 145,0                             |
| 1 040                            | 1 305          | 100,0                             |
| 1 090                            | 1 305          | 135,0                             |
| 1 160                            | 1 305          | 185,0                             |



**MFP**

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 110                              | 235            | 9,0                               |
| 150                              | 235            | 9,0                               |
| 110                              | 255            | 10,0                              |
| 160                              | 255            | 11,0                              |
| 120                              | 270            | 13,0                              |
| 160                              | 270            | 14,0                              |
| 200                              | 270            | 14,0                              |
| 130                              | 330            | 19,0                              |
| 180                              | 330            | 20,0                              |
| 230                              | 330            | 22,0                              |
| 140                              | 360            | 24,0                              |
| 180                              | 360            | 25,0                              |
| 240                              | 360            | 28,0                              |
| 140                              | 395            | 31,0                              |
| 190                              | 395            | 34,0                              |
| 250                              | 395            | 37,0                              |
| 150                              | 450            | 41,0                              |
| 210                              | 450            | 45,0                              |
| 270                              | 450            | 49,0                              |
| 190                              | 545            | 65,0                              |
| 220                              | 545            | 65,0                              |
| 290                              | 545            | 75,0                              |
| 190                              | 600            | 85,0                              |
| 240                              | 600            | 90,0                              |
| 310                              | 600            | 100,0                             |
| 190                              | 660            | 105,0                             |
| 260                              | 660            | 115,0                             |
| 330                              | 660            | 120,0                             |
| 240                              | 750            | 155,0                             |
| 290                              | 750            | 165,0                             |
| 390                              | 750            | 180,0                             |
| 260                              | 885            | 240,0                             |
| 310                              | 885            | 255,0                             |
| 410                              | 885            | 280,0                             |
| 300                              | 1 050          | 355,0                             |
| 330                              | 1 050          | 365,0                             |
| 430                              | 1 050          | 400,0                             |
| 300                              | 1 190          | 435,0                             |
| 330                              | 1 190          | 450,0                             |
| 410                              | 1 190          | 490,0                             |
| 350                              | 1 375          | 645,0                             |
| 350                              | 1 375          | 650,0                             |
| 430                              | 1 375          | 695,0                             |
| 1 140                            | 1 305          | 1 535,0                           |
| 1 190                            | 1 305          | 1 570,0                           |
| 1 270                            | 1 305          | 1 625,0                           |

## PN 16

| Menovitá svetlost'<br>Nominal diameter | Menovitá svetlost'<br>Nominal diameter | Uhlový pohyb<br>Angular movement | Ohybová tuhosť<br>Angular spring rate | Treći moment<br>Frictional moments |
|----------------------------------------|----------------------------------------|----------------------------------|---------------------------------------|------------------------------------|
| DN                                     | DN                                     | ± deg (°)                        | N.m/°                                 | N.m/bar                            |
| mm                                     | inch                                   |                                  |                                       |                                    |
| 1000                                   | 40"                                    | 1,5                              | 9 753,0                               | 568,0                              |
| 1000                                   | 40"                                    | 2,0                              | 6 502,0                               | 568,0                              |
| 1000                                   | 40"                                    | 3,0                              | 4 335,0                               | 568,0                              |
| 1100                                   | 44"                                    | 1,5                              | 11 849,0                              | 765,0                              |
| 1100                                   | 44"                                    | 2,0                              | 7 899,0                               | 765,0                              |
| 1100                                   | 44"                                    | 3,0                              | 5 266,0                               | 765,0                              |
| 1200                                   | 48"                                    | 1,5                              | 12 767,0                              | 904,0                              |
| 1200                                   | 48"                                    | 2,0                              | 8 511,0                               | 904,0                              |
| 1200                                   | 48"                                    | 3,0                              | 5 674,0                               | 904,0                              |
| 1300                                   | 52"                                    | 1,0                              | 12 396,0                              | 1 071,0                            |
| 1300                                   | 52"                                    | 1,5                              | 9 297,0                               | 1 071,0                            |
| 1300                                   | 52"                                    | 3,0                              | 6 198,0                               | 1 071,0                            |
| 1400                                   | 56"                                    | 1,0                              | 24 939,0                              | 1 481,0                            |
| 1400                                   | 56"                                    | 1,5                              | 18 704,0                              | 1 481,0                            |
| 1400                                   | 56"                                    | 3,0                              | 12 469,0                              | 1 481,0                            |
| 1500                                   | 60"                                    | 1,0                              | 30 413,0                              | 1 690,0                            |
| 1500                                   | 60"                                    | 1,5                              | 22 810,0                              | 1 690,0                            |
| 1500                                   | 60"                                    | 3,0                              | 15 207,0                              | 1 690,0                            |
| 1600                                   | 64"                                    | 1,0                              | 36 638,0                              | 1 913,0                            |
| 1600                                   | 64"                                    | 1,5                              | 21 983,0                              | 1 913,0                            |
| 1600                                   | 64"                                    | 3,0                              | 18 319,0                              | 1 913,0                            |
| 1800                                   | 72"                                    | 1,0                              | 51 354,0                              | 2 996,0                            |
| 1800                                   | 72"                                    | 1,5                              | 30 813,0                              | 2 996,0                            |
| 1800                                   | 72"                                    | 3,0                              | 25 677,0                              | 2 996,0                            |
| 2000                                   | 80"                                    | 1,0                              | 120 729,0                             | 3 678,0                            |
| 2000                                   | 80"                                    | 1,5                              | 72 437,0                              | 3 678,0                            |
| 2000                                   | 80"                                    | 3,0                              | 60 364,0                              | 3 678,0                            |



MWP



MFP

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                | mm                               | mm             | kg                                |
| 1 140                            | 1 410          | 415,0                             | 1 260                            | 1 410          | 2 075,0                           |
| 1 190                            | 1 410          | 1 455,0                           | 1 310                            | 1 410          | 2 115,0                           |
| 1 270                            | 1 410          | 1 515,0                           | 1 390                            | 1 410          | 2 175,0                           |
| 1 200                            | 1 580          | 1 765,0                           | 1 330                            | 1 580          | 2 610,0                           |
| 1 250                            | 1 580          | 1 815,0                           | 1 380                            | 1 580          | 2 655,0                           |
| 1 330                            | 1 580          | 1 885,0                           | 1 460                            | 1 580          | 2 730,0                           |
| 1 240                            | 1 685          | 2 040,0                           | 1 380                            | 1 685          | 3 105,0                           |
| 1 290                            | 1 685          | 2 090,0                           | 1 430                            | 1 685          | 3 155,0                           |
| 1 370                            | 1 685          | 2 170,0                           | 1 510                            | 1 685          | 3 235,0                           |
| 1 360                            | 1 815          | 2 525,0                           | 1 500                            | 1 815          | 3 605,0                           |
| 1 400                            | 1 815          | 2 570,0                           | 1 540                            | 1 815          | 3 650,0                           |
| 1 490                            | 1 815          | 2 670,0                           | 1 630                            | 1 815          | 3 750,0                           |
| 1 400                            | 1 915          | 2 865,0                           | 1 550                            | 1 915          | 4 125,0                           |
| 1 440                            | 1 915          | 2 915,0                           | 1 590                            | 1 915          | 4 175,0                           |
| 1 530                            | 1 915          | 3 025,0                           | 1 670                            | 1 915          | 4 280,0                           |
| 1 460                            | 2 015          | 3 400,0                           | 1 610                            | 2 015          | 4 830,0                           |
| 1 500                            | 2 015          | 3 455,0                           | 1 650                            | 2 015          | 4 885,0                           |
| 1 590                            | 2 015          | 3 575,0                           | 1 740                            | 2 015          | 5 005,0                           |
| 1 540                            | 2 115          | 3 775,0                           | 1 700                            | 2 115          | 5 615,0                           |
| 1 620                            | 2 115          | 3 895,0                           | 1 790                            | 2 115          | 5 745,0                           |
| 1 670                            | 2 115          | 3 965,0                           | 1 830                            | 2 115          | 5 805,0                           |
| 1 740                            | 2 375          | 5 825,0                           | 1 920                            | 2 375          | 7 650,0                           |
| 1 820                            | 2 375          | 5 970,0                           | 2 000                            | 2 375          | 7 790,0                           |
| 1 870                            | 2 375          | 6 050,0                           | 2 040                            | 2 375          | 7 860,0                           |
| 1 940                            | 2 635          | 7 295,0                           | 2 130                            | 2 635          | 9 710,0                           |
| 2 030                            | 2 635          | 7 490,0                           | 2 220                            | 2 635          | 9 910,0                           |
| 2 070                            | 2 635          | 7 580,0                           | 2 260                            | 2 635          | 9 995,0                           |

PN 25

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Uhlový pohyb<br>Angular movement | Ohybová tuhosť<br>Angular spring rate | Treći moment<br>Frictional moments |
|---------------------------------------|---------------------------------------|----------------------------------|---------------------------------------|------------------------------------|
| DN                                    | DN                                    | ± deg (°)                        | N.m/°                                 | N.m/bar                            |
| mm                                    | inch                                  |                                  |                                       |                                    |
| 50                                    | 2"                                    | 6,0                              | 2,4                                   | 0,5                                |
| 50                                    | 2"                                    | 12,0                             | 1,2                                   | 0,5                                |
| 65                                    | 2 ½"                                  | 6,0                              | 2,3                                   | 0,8                                |
| 65                                    | 2 ½"                                  | 12,0                             | 1,2                                   | 0,8                                |
| 80                                    | 3"                                    | 3,0                              | 3,2                                   | 1,1                                |
| 80                                    | 3"                                    | 6,0                              | 1,9                                   | 1,1                                |
| 80                                    | 3"                                    | 12,0                             | 1,4                                   | 1,1                                |
| 100                                   | 4"                                    | 3,0                              | 20,0                                  | 1,8                                |
| 100                                   | 4"                                    | 6,0                              | 11,0                                  | 1,8                                |
| 100                                   | 4"                                    | 12,0                             | 7,8                                   | 1,8                                |
| 125                                   | 5"                                    | 3,0                              | 71,0                                  | 3,4                                |
| 125                                   | 5"                                    | 6,0                              | 40,0                                  | 3,4                                |
| 125                                   | 5"                                    | 12,0                             | 27,0                                  | 3,4                                |
| 150                                   | 6"                                    | 3,0                              | 135,0                                 | 5,8                                |
| 150                                   | 6"                                    | 6,0                              | 75,0                                  | 5,8                                |
| 150                                   | 6"                                    | 12,0                             | 52,0                                  | 5,8                                |
| 200                                   | 8"                                    | 3,0                              | 169,0                                 | 9,6                                |
| 200                                   | 8"                                    | 6,0                              | 94,0                                  | 9,6                                |
| 200                                   | 8"                                    | 12,0                             | 65,0                                  | 9,6                                |
| 250                                   | 10"                                   | 3,0                              | 268,0                                 | 17,0                               |
| 250                                   | 10"                                   | 6,0                              | 149,0                                 | 17,0                               |
| 250                                   | 10"                                   | 12,0                             | 103,0                                 | 17,0                               |
| 300                                   | 12"                                   | 2,0                              | 375,0                                 | 24,0                               |
| 300                                   | 12"                                   | 4,0                              | 209,0                                 | 24,0                               |
| 300                                   | 12"                                   | 6,0                              | 144,0                                 | 24,0                               |
| 350                                   | 14"                                   | 2,0                              | 374,0                                 | 33,0                               |
| 350                                   | 14"                                   | 4,0                              | 208,0                                 | 33,0                               |
| 350                                   | 14"                                   | 6,0                              | 144,0                                 | 33,0                               |
| 400                                   | 16"                                   | 2,0                              | 908,0                                 | 43,0                               |
| 400                                   | 16"                                   | 4,0                              | 649,0                                 | 43,0                               |
| 400                                   | 16"                                   | 6,0                              | 413,0                                 | 43,0                               |
| 500                                   | 20"                                   | 2,0                              | 1 787,0                               | 82,0                               |
| 500                                   | 20"                                   | 4,0                              | 1 276,0                               | 82,0                               |
| 500                                   | 20"                                   | 6,0                              | 812,0                                 | 82,0                               |
| 600                                   | 24"                                   | 2,0                              | 2 708,0                               | 139,0                              |
| 600                                   | 24"                                   | 4,0                              | 1 934,0                               | 139,0                              |
| 600                                   | 24"                                   | 6,0                              | 1 231,0                               | 139,0                              |
| 700                                   | 28"                                   | 1,5                              | 6 840,0                               | 221,0                              |
| 700                                   | 28"                                   | 2,0                              | 4 560,0                               | 221,0                              |
| 700                                   | 28"                                   | 4,0                              | 3 040,0                               | 221,0                              |
| 800                                   | 32"                                   | 1,5                              | 9 095,0                               | 327,0                              |
| 800                                   | 32"                                   | 2,0                              | 6 063,0                               | 327,0                              |
| 800                                   | 32"                                   | 4,0                              | 4 042,0                               | 327,0                              |
| 900                                   | 36"                                   | 1,5                              | 11 547,0                              | 461,0                              |
| 900                                   | 36"                                   | 2,0                              | 7 698,0                               | 461,0                              |
| 900                                   | 36"                                   | 4,0                              | 5 132,0                               | 461,0                              |



MWP



MFP

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                | mm                               | mm             | kg                                |
| 260                              | 240            | 17,0                              | 130                              | 235            | 12,0                              |
| 310                              | 240            | 18,0                              | 160                              | 235            | 13,0                              |
| 310                              | 250            | 20,0                              | 140                              | 255            | 15,0                              |
| 360                              | 250            | 21,0                              | 180                              | 255            | 16,0                              |
| 310                              | 270            | 22,0                              | 140                              | 270            | 18,0                              |
| 350                              | 270            | 23,0                              | 170                              | 270            | 18,0                              |
| 390                              | 270            | 24,0                              | 210                              | 270            | 19,0                              |
| 340                              | 330            | 43,0                              | 140                              | 375            | 28,0                              |
| 390                              | 330            | 45,0                              | 200                              | 375            | 31,0                              |
| 450                              | 330            | 48,0                              | 250                              | 375            | 34,0                              |
| 340                              | 360            | 54,0                              | 170                              | 410            | 40,0                              |
| 400                              | 360            | 58,0                              | 200                              | 410            | 42,0                              |
| 450                              | 360            | 60,0                              | 250                              | 410            | 45,0                              |
| 370                              | 400            | 70,0                              | 190                              | 440            | 50,0                              |
| 430                              | 400            | 75,0                              | 220                              | 440            | 52,0                              |
| 490                              | 400            | 80,0                              | 280                              | 440            | 57,0                              |
| 390                              | 480            | 105,0                             | 190                              | 515            | 70,0                              |
| 460                              | 480            | 115,0                             | 240                              | 515            | 75,0                              |
| 520                              | 480            | 120,0                             | 300                              | 515            | 85,0                              |
| 400                              | 550            | 160,0                             | 220                              | 635            | 110,0                             |
| 470                              | 550            | 170,0                             | 260                              | 635            | 115,0                             |
| 530                              | 550            | 180,0                             | 320                              | 635            | 125,0                             |
| 440                              | 600            | 195,0                             | 220                              | 695            | 125,0                             |
| 510                              | 600            | 210,0                             | 280                              | 695            | 135,0                             |
| 590                              | 600            | 220,0                             | 350                              | 695            | 145,0                             |
| 470                              | 660            | 285,0                             | 250                              | 765            | 180,0                             |
| 540                              | 660            | 300,0                             | 310                              | 765            | 190,0                             |
| 620                              | 660            | 315,0                             | 380                              | 765            | 205,0                             |
| 560                              | 780            | 415,0                             | 280                              | 830            | 240,0                             |
| 610                              | 780            | 425,0                             | 330                              | 830            | 250,0                             |
| 710                              | 780            | 450,0                             | 440                              | 830            | 275,0                             |
| 580                              | 900            | 600,0                             | 300                              | 940            | 345,0                             |
| 630                              | 900            | 620,0                             | 350                              | 940            | 365,0                             |
| 730                              | 900            | 650,0                             | 460                              | 940            | 400,0                             |
| 600                              | 1 050          | 885,0                             | 350                              | 1 125          | 510,0                             |
| 650                              | 1 050          | 910,0                             | 370                              | 1 125          | 520,0                             |
| 750                              | 1 050          | 955,0                             | 480                              | 1 125          | 575,0                             |
| 600                              | 1 180          | 1 150,0                           | 390                              | 1 240          | 660,0                             |
| 660                              | 1 180          | 1 185,0                           | 390                              | 1 240          | 665,0                             |
| 740                              | 1 180          | 1 235,0                           | 460                              | 1 240          | 710,0                             |
| 620                              | 1 370          | 1 615,0                           | 440                              | 1 435          | 940,0                             |
| 680                              | 1 370          | 1 660,0                           | 440                              | 1 435          | 950,0                             |
| 760                              | 1 370          | 1 720,0                           | 480                              | 1 435          | 985,0                             |
| 1 280                            | 1 305          | 1 675,0                           | 1 400                            | 1 305          | 2 330,0                           |
| 1 340                            | 1 305          | 1 725,0                           | 1 450                            | 1 305          | 2 370,0                           |
| 1 420                            | 1 305          | 1 790,0                           | 1 530                            | 1 305          | 2 440,0                           |

PN 25

| Menovitá svetlost'<br>Nominal diameter | Menovitá svetlost'<br>Nominal diameter | Uhlivý pohyb<br>Angular movement | Ohybová tuhosť<br>Angular spring rate | Treći moment<br>Frictional moments |
|----------------------------------------|----------------------------------------|----------------------------------|---------------------------------------|------------------------------------|
| DN                                     | DN                                     | ± deg (°)                        | N.m/°                                 | N.m/bar                            |
| mm                                     | inch                                   |                                  |                                       |                                    |
| 1000                                   | 40"                                    | 1,5                              | 13 658,0                              | 632,0                              |
| 1000                                   | 40"                                    | 2,0                              | 9 105,0                               | 632,0                              |
| 1000                                   | 40"                                    | 3,0                              | 6 070,0                               | 632,0                              |
| 1100                                   | 44"                                    | 1,5                              | 16 593,0                              | 918,0                              |
| 1100                                   | 44"                                    | 2,0                              | 11 062,0                              | 918,0                              |
| 1100                                   | 44"                                    | 3,0                              | 7 375,0                               | 918,0                              |
| 1200                                   | 48"                                    | 1,5                              | 17 835,0                              | 1 083,0                            |
| 1200                                   | 48"                                    | 2,0                              | 11 890,0                              | 1 083,0                            |
| 1200                                   | 48"                                    | 3,0                              | 7 927,0                               | 1 083,0                            |
| 1300                                   | 52"                                    | 1,0                              | 31 961,0                              | 1 284,0                            |
| 1300                                   | 52"                                    | 1,5                              | 23 971,0                              | 1 284,0                            |
| 1300                                   | 52"                                    | 3,0                              | 15 981,0                              | 1 284,0                            |
| 1400                                   | 56"                                    | 1,0                              | 51 468,0                              | 1 722,0                            |
| 1400                                   | 56"                                    | 1,5                              | 38 601,0                              | 1 722,0                            |
| 1400                                   | 56"                                    | 3,0                              | 25 734,0                              | 1 722,0                            |
| 1500                                   | 60"                                    | 1,0                              | 62 788,0                              | 1 966,0                            |
| 1500                                   | 60"                                    | 1,5                              | 47 091,0                              | 1 966,0                            |
| 1500                                   | 60"                                    | 3,0                              | 31 394,0                              | 1 966,0                            |
| 1600                                   | 64"                                    | 1,0                              | 75 655,0                              | 2 385,0                            |
| 1600                                   | 64"                                    | 1,5                              | 45 393,0                              | 2 385,0                            |
| 1600                                   | 64"                                    | 3,0                              | 37 828,0                              | 2 385,0                            |



**MWP**



**MFP**

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                | mm                               | mm             | kg                                |
| 1 390                            | 1 410          | 2 030,0                           | 1 510                            | 1 410          | 2 915,0                           |
| 1 440                            | 1 410          | 2 085,0                           | 1 570                            | 1 410          | 2 970,0                           |
| 1 520                            | 1 410          | 2 160,0                           | 1 650                            | 1 410          | 3 050,0                           |
| 1 470                            | 1 580          | 2 575,0                           | 1 590                            | 1 580          | 3 615,0                           |
| 1 520                            | 1 580          | 2 635,0                           | 1 650                            | 1 580          | 3 685,0                           |
| 1 600                            | 1 580          | 2 730,0                           | 1 730                            | 1 580          | 3 780,0                           |
| 1 530                            | 1 685          | 3 135,0                           | 1 670                            | 1 685          | 4 405,0                           |
| 1 580                            | 1 685          | 3 205,0                           | 1 720                            | 1 685          | 4 470,0                           |
| 1 660                            | 1 685          | 3 315,0                           | 1 800                            | 1 685          | 4 575,0                           |
| 1 660                            | 1 815          | 3 870,0                           | 1 810                            | 1 815          | 5 315,0                           |
| 1 700                            | 1 815          | 3 930,0                           | 1 850                            | 1 815          | 5 370,0                           |
| 1 790                            | 1 815          | 4 060,0                           | 1 940                            | 1 815          | 5 505,0                           |
| 1 730                            | 1 915          | 4 755,0                           | 1 880                            | 1 915          | 6 405,0                           |
| 1 770                            | 1 915          | 4 825,0                           | 1 920                            | 1 915          | 6 475,0                           |
| 1 860                            | 1 915          | 4 975,0                           | 2 010                            | 1 915          | 6 625,0                           |
| 1 790                            | 2 015          | 5 300,0                           | 1 940                            | 2 015          | 7 070,0                           |
| 1 830                            | 2 015          | 5 380,0                           | 1 990                            | 2 015          | 7 160,0                           |
| 1 920                            | 2 015          | 5 540,0                           | 2 070                            | 2 015          | 7 305,0                           |
| 1 850                            | 2 175          | 6 225,0                           | 2 010                            | 2 175          | 8 345,0                           |
| 1 930                            | 2 175          | 6 400,0                           | 2 100                            | 2 175          | 8 530,0                           |
| 1 980                            | 2 175          | 6 495,0                           | 2 140                            | 2 175          | 8 615,0                           |

PN 40

| Menovitá svetlost'<br>Nominal diameter | Menovitá svetlost'<br>Nominal diameter | Uhlový pohyb<br>Angular movement | Ohybová tuhosť<br>Angular spring rate | Treći moment<br>Frictional moments |
|----------------------------------------|----------------------------------------|----------------------------------|---------------------------------------|------------------------------------|
| DN                                     | DN                                     | ± deg (°)                        | N.m/°                                 | N.m/bar                            |
| mm                                     | inch                                   |                                  |                                       |                                    |
| 50                                     | 2"                                     | 6,0                              | 2,4                                   | 0,5                                |
| 50                                     | 2"                                     | 12,0                             | 1,2                                   | 0,5                                |
| 65                                     | 2 ½"                                   | 6,0                              | 3,1                                   | 0,8                                |
| 65                                     | 2 ½"                                   | 12,0                             | 1,6                                   | 0,8                                |
| 80                                     | 3"                                     | 3,0                              | 4,3                                   | 1,1                                |
| 80                                     | 3"                                     | 6,0                              | 2,6                                   | 1,1                                |
| 80                                     | 3"                                     | 12,0                             | 1,8                                   | 1,1                                |
| 100                                    | 4"                                     | 3,0                              | 26,0                                  | 2,3                                |
| 100                                    | 4"                                     | 6,0                              | 14,0                                  | 2,3                                |
| 100                                    | 4"                                     | 12,0                             | 9,9                                   | 2,3                                |
| 125                                    | 5"                                     | 3,0                              | 90,0                                  | 4,1                                |
| 125                                    | 5"                                     | 6,0                              | 50,0                                  | 4,1                                |
| 125                                    | 5"                                     | 12,0                             | 35,0                                  | 4,1                                |
| 150                                    | 6"                                     | 3,0                              | 170,0                                 | 6,7                                |
| 150                                    | 6"                                     | 6,0                              | 95,0                                  | 6,7                                |
| 150                                    | 6"                                     | 12,0                             | 66,0                                  | 6,7                                |
| 200                                    | 8"                                     | 3,0                              | 212,0                                 | 11,0                               |
| 200                                    | 8"                                     | 6,0                              | 118,0                                 | 11,0                               |
| 200                                    | 8"                                     | 12,0                             | 82,0                                  | 11,0                               |
| 250                                    | 10"                                    | 3,0                              | 337,0                                 | 19,0                               |
| 250                                    | 10"                                    | 6,0                              | 187,0                                 | 19,0                               |
| 250                                    | 10"                                    | 12,0                             | 129,0                                 | 19,0                               |
| 300                                    | 12"                                    | 2,0                              | 544,0                                 | 27,0                               |
| 300                                    | 12"                                    | 4,0                              | 302,0                                 | 27,0                               |
| 300                                    | 12"                                    | 6,0                              | 209,0                                 | 27,0                               |
| 350                                    | 14"                                    | 2,0                              | 539,0                                 | 33,0                               |
| 350                                    | 14"                                    | 4,0                              | 300,0                                 | 33,0                               |
| 350                                    | 14"                                    | 6,0                              | 207,0                                 | 33,0                               |
| 400                                    | 16"                                    | 2,0                              | 1 129,0                               | 53,0                               |
| 400                                    | 16"                                    | 4,0                              | 807,0                                 | 53,0                               |
| 400                                    | 16"                                    | 6,0                              | 513,0                                 | 53,0                               |
| 500                                    | 20"                                    | 2,0                              | 2 288,0                               | 98,0                               |
| 500                                    | 20"                                    | 4,0                              | 1 634,0                               | 98,0                               |
| 500                                    | 20"                                    | 6,0                              | 1 040,0                               | 98,0                               |
| 600                                    | 24"                                    | 2,0                              | 3 445,0                               | 185,0                              |
| 600                                    | 24"                                    | 4,0                              | 2 460,0                               | 185,0                              |
| 600                                    | 24"                                    | 6,0                              | 1 566,0                               | 185,0                              |
| 700                                    | 28"                                    | 1,5                              | 6 061,0                               | 281,0                              |
| 700                                    | 28"                                    | 2,0                              | 4 041,0                               | 281,0                              |
| 700                                    | 28"                                    | 4,0                              | 2 694,0                               | 281,0                              |
| 800                                    | 32"                                    | 1,5                              | 8 074,0                               | 405,0                              |
| 800                                    | 32"                                    | 2,0                              | 5 383,0                               | 405,0                              |
| 800                                    | 32"                                    | 4,0                              | 3 589,0                               | 405,0                              |
| 900                                    | 36"                                    | 1,5                              | 10 282,0                              | 509,0                              |
| 900                                    | 36"                                    | 2,0                              | 6 855,0                               | 509,0                              |
| 900                                    | 36"                                    | 4,0                              | 4 570,0                               | 509,0                              |



MWP

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 280                              | 270            | 17,0                              |
| 330                              | 270            | 18,0                              |
| 330                              | 280            | 20,0                              |
| 390                              | 280            | 22,0                              |
| 340                              | 300            | 23,0                              |
| 380                              | 300            | 24,0                              |
| 420                              | 300            | 25,0                              |
| 360                              | 370            | 44,0                              |
| 420                              | 370            | 47,0                              |
| 470                              | 370            | 50,0                              |
| 340                              | 390            | 59,0                              |
| 400                              | 390            | 65,0                              |
| 460                              | 390            | 70,0                              |
| 370                              | 440            | 75,0                              |
| 430                              | 440            | 80,0                              |
| 490                              | 440            | 85,0                              |
| 420                              | 520            | 120,0                             |
| 480                              | 520            | 125,0                             |
| 550                              | 520            | 130,0                             |
| 420                              | 570            | 180,0                             |
| 490                              | 570            | 190,0                             |
| 560                              | 570            | 200,0                             |
| 470                              | 640            | 245,0                             |
| 540                              | 640            | 260,0                             |
| 620                              | 640            | 275,0                             |
| 510                              | 720            | 350,0                             |
| 590                              | 720            | 370,0                             |
| 670                              | 720            | 390,0                             |
| 590                              | 840            | 510,0                             |
| 640                              | 840            | 525,0                             |
| 740                              | 840            | 550,0                             |
| 610                              | 960            | 705,0                             |
| 660                              | 960            | 725,0                             |
| 770                              | 960            | 765,0                             |
| 630                              | 1 120          | 1 080,0                           |
| 680                              | 1 120          | 1 105,0                           |
| 790                              | 1 120          | 1 160,0                           |
| 620                              | 1 220          | 1 320,0                           |
| 680                              | 1 220          | 1 355,0                           |
| 760                              | 1 220          | 1 400,0                           |
| 1 420                            | 1 260          | 2 250,0                           |
| 1 480                            | 1 260          | 2 300,0                           |
| 1 560                            | 1 260          | 2 370,0                           |
| 1 560                            | 1 365          | 2 730,0                           |
| 1 620                            | 1 365          | 2 785,0                           |
| 1 700                            | 1 365          | 2 865,0                           |



MFP

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 130                              | 235            | 12,0                              |
| 160                              | 235            | 13,0                              |
| 140                              | 255            | 15,0                              |
| 180                              | 255            | 16,0                              |
| 140                              | 270            | 18,0                              |
| 170                              | 270            | 18,0                              |
| 210                              | 270            | 19,0                              |
| 160                              | 375            | 30,0                              |
| 200                              | 375            | 32,0                              |
| 250                              | 375            | 35,0                              |
| 190                              | 410            | 42,0                              |
| 210                              | 410            | 44,0                              |
| 270                              | 410            | 48,0                              |
| 210                              | 440            | 52,0                              |
| 240                              | 440            | 55,0                              |
| 300                              | 440            | 60,0                              |
| 220                              | 515            | 80,0                              |
| 250                              | 515            | 85,0                              |
| 320                              | 515            | 95,0                              |
| 250                              | 660            | 130,0                             |
| 270                              | 660            | 135,0                             |
| 340                              | 660            | 145,0                             |
| 260                              | 725            | 165,0                             |
| 310                              | 725            | 175,0                             |
| 380                              | 725            | 190,0                             |
| 270                              | 790            | 225,0                             |
| 330                              | 790            | 240,0                             |
| 410                              | 790            | 255,0                             |
| 310                              | 870            | 315,0                             |
| 360                              | 870            | 330,0                             |
| 460                              | 870            | 355,0                             |
| 370                              | 965            | 450,0                             |
| 390                              | 965            | 460,0                             |
| 490                              | 965            | 495,0                             |
| 460                              | 1 170          | 730,0                             |
| 460                              | 1 170          | 730,0                             |
| 510                              | 1 170          | 755,0                             |
| 500                              | 1 275          | 885,0                             |
| 500                              | 1 275          | 885,0                             |
| 500                              | 1 275          | 885,0                             |
| 1 560                            | 1 260          | 3 055,0                           |
| 1 620                            | 1 260          | 3 110,0                           |
| 1 700                            | 1 260          | 3 180,0                           |
| 1 710                            | 1 365          | 3 760,0                           |
| 1 770                            | 1 365          | 3 820,0                           |
| 1 850                            | 1 365          | 3 900,0                           |

PN 40

| Menovitá svetlost'<br>Nominal diameter | Menovitá svetlost'<br>Nominal diameter | Uhlový pohyb<br>Angular movement | Ohybová tuhosť<br>Angular spring rate | Treći moment<br>Frictional moments |
|----------------------------------------|----------------------------------------|----------------------------------|---------------------------------------|------------------------------------|
| DN                                     | DN                                     | ± deg (°)                        | N.m/°                                 | N.m/bar                            |
| mm                                     | inch                                   |                                  |                                       |                                    |
| 1000                                   | 40"                                    | 1,5                              | 13 561,0                              | 754,0                              |
| 1000                                   | 40"                                    | 2,0                              | 9 040,0                               | 754,0                              |
| 1000                                   | 40"                                    | 3,0                              | 6 027,0                               | 754,0                              |
| 1100                                   | 44"                                    | 1,5                              | 16 378,0                              | 1 062,0                            |
| 1100                                   | 44"                                    | 2,0                              | 10 918,0                              | 1 062,0                            |
| 1100                                   | 44"                                    | 3,0                              | 7 279,0                               | 1 062,0                            |
| 1200                                   | 48"                                    | 1,5                              | 17 728,0                              | 1 259,0                            |
| 1200                                   | 48"                                    | 2,0                              | 11 819,0                              | 1 259,0                            |
| 1200                                   | 48"                                    | 3,0                              | 7 879,0                               | 1 259,0                            |



**MWP**



**MFP**

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                | mm                               | mm             | kg                                |
| 1 670                            | 1 470          | 3 435,0                           | 1 830                            | 1 470          | 4 780,0                           |
| 1 720                            | 1 470          | 3 500,0                           | 1 890                            | 1 470          | 4 855,0                           |
| 1 800                            | 1 470          | 3 600,0                           | 1 970                            | 1 470          | 4 950,0                           |
| 1 770                            | 1 580          | 4 380,0                           | 1 850                            | 1 580          | 3 800,0                           |
| 1 820                            | 1 580          | 4 455,0                           | 1 900                            | 1 580          | 3 870,0                           |
| 1 900                            | 1 580          | 4 570,0                           | 1 980                            | 1 580          | 3 980,0                           |
| 1 870                            | 1 685          | 5 050,0                           | 2 050                            | 1 685          | 6 890,0                           |
| 1 920                            | 1 685          | 5 130,0                           | 2 110                            | 1 685          | 6 985,0                           |
| 2 000                            | 1 685          | 5 265,0                           | 2 190                            | 1 685          | 7 115,0                           |



ZÁKLADNÉ TECHNICKÉ ÚDAJE  
KARDANOVÝCH KOMPENZÁTOROV

**MWC - MFC**

DATA SHEETS FOR  
**G I M B A L**  
EXPANSION JOINTS



## PN 1

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Uhlový pohyb<br>Angular movement | Ohybová tuhosť<br>Angular spring rate | Trecí moment<br>Frictional moments | MWC                              |                |                                   | MFC                              |                |                                   |
|---------------------------------------|---------------------------------------|----------------------------------|---------------------------------------|------------------------------------|----------------------------------|----------------|-----------------------------------|----------------------------------|----------------|-----------------------------------|
|                                       |                                       |                                  |                                       |                                    | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|                                       |                                       |                                  |                                       |                                    |                                  |                |                                   |                                  |                |                                   |
| DN                                    | DN                                    | ± deg (°)                        | N.m/°                                 | N.m/bar                            | mm                               | mm             | kg                                | mm                               | mm             | kg                                |
| 50                                    | 2"                                    | 6,0                              | 0,8                                   | 0,3                                | 290                              | 245            | 10,0                              | 130                              | 250            | 9,0                               |
| 50                                    | 2"                                    | 12,0                             | 0,4                                   | 0,3                                | 320                              | 245            | 10,0                              | 210                              | 250            | 10,0                              |
| 65                                    | 2 ½"                                  | 6,0                              | 0,8                                   | 0,5                                | 340                              | 270            | 13,0                              | 140                              | 275            | 11,0                              |
| 65                                    | 2 ½"                                  | 12,0                             | 0,4                                   | 0,5                                | 370                              | 270            | 13,0                              | 230                              | 275            | 12,0                              |
| 80                                    | 3"                                    | 3,0                              | 1,0                                   | 0,7                                | 330                              | 270            | 16,0                              | 120                              | 275            | 12,0                              |
| 80                                    | 3"                                    | 6,0                              | 0,6                                   | 0,7                                | 340                              | 270            | 16,0                              | 180                              | 275            | 13,0                              |
| 80                                    | 3"                                    | 12,0                             | 0,4                                   | 0,7                                | 370                              | 270            | 16,0                              | 260                              | 275            | 15,0                              |
| 100                                   | 4"                                    | 3,0                              | 4,9                                   | 1,1                                | 350                              | 340            | 23,0                              | 140                              | 345            | 18,0                              |
| 100                                   | 4"                                    | 6,0                              | 2,7                                   | 1,1                                | 370                              | 340            | 23,0                              | 200                              | 345            | 20,0                              |
| 100                                   | 4"                                    | 12,0                             | 1,9                                   | 1,1                                | 410                              | 340            | 24,0                              | 300                              | 345            | 22,0                              |
| 125                                   | 5"                                    | 3,0                              | 17,0                                  | 2,0                                | 350                              | 365            | 27,0                              | 140                              | 370            | 21,0                              |
| 125                                   | 5"                                    | 6,0                              | 9,6                                   | 2,0                                | 370                              | 365            | 27,0                              | 210                              | 370            | 23,0                              |
| 125                                   | 5"                                    | 12,0                             | 6,7                                   | 2,0                                | 410                              | 365            | 28,0                              | 310                              | 370            | 26,0                              |
| 150                                   | 6"                                    | 3,0                              | 33,0                                  | 2,8                                | 360                              | 410            | 39,0                              | 150                              | 415            | 31,0                              |
| 150                                   | 6"                                    | 6,0                              | 18,0                                  | 2,8                                | 380                              | 410            | 39,0                              | 220                              | 415            | 33,0                              |
| 150                                   | 6"                                    | 12,0                             | 13,0                                  | 2,8                                | 420                              | 410            | 41,0                              | 330                              | 415            | 38,0                              |
| 200                                   | 8"                                    | 3,0                              | 41,0                                  | 4,7                                | 380                              | 445            | 50,0                              | 150                              | 455            | 37,0                              |
| 200                                   | 8"                                    | 6,0                              | 23,0                                  | 4,7                                | 400                              | 445            | 50,0                              | 240                              | 455            | 41,0                              |
| 200                                   | 8"                                    | 12,0                             | 16,0                                  | 4,7                                | 450                              | 445            | 51,0                              | 360                              | 455            | 47,0                              |
| 250                                   | 10"                                   | 3,0                              | 66,0                                  | 7,2                                | 410                              | 560            | 70,0                              | 180                              | 570            | 52,0                              |
| 250                                   | 10"                                   | 6,0                              | 36,0                                  | 7,2                                | 440                              | 560            | 70,0                              | 260                              | 570            | 57,0                              |
| 250                                   | 10"                                   | 12,0                             | 25,0                                  | 7,2                                | 500                              | 560            | 75,0                              | 400                              | 570            | 65,0                              |
| 300                                   | 12"                                   | 2,0                              | 92,0                                  | 13,0                               | 420                              | 610            | 100,0                             | 180                              | 620            | 75,0                              |
| 300                                   | 12"                                   | 4,0                              | 51,0                                  | 13,0                               | 440                              | 610            | 100,0                             | 260                              | 620            | 80,0                              |
| 300                                   | 12"                                   | 6,0                              | 36,0                                  | 13,0                               | 460                              | 610            | 95,0                              | 360                              | 620            | 90,0                              |
| 350                                   | 14"                                   | 2,0                              | 92,0                                  | 16,0                               | 420                              | 660            | 110,0                             | 180                              | 670            | 85,0                              |
| 350                                   | 14"                                   | 4,0                              | 51,0                                  | 16,0                               | 440                              | 660            | 110,0                             | 270                              | 670            | 95,0                              |
| 350                                   | 14"                                   | 6,0                              | 35,0                                  | 16,0                               | 470                              | 660            | 110,0                             | 380                              | 670            | 105,0                             |
| 400                                   | 16"                                   | 2,0                              | 223,0                                 | 21,0                               | 510                              | 740            | 165,0                             | 240                              | 750            | 135,0                             |
| 400                                   | 16"                                   | 4,0                              | 160,0                                 | 21,0                               | 540                              | 740            | 170,0                             | 290                              | 750            | 140,0                             |
| 400                                   | 16"                                   | 6,0                              | 102,0                                 | 21,0                               | 570                              | 740            | 170,0                             | 420                              | 750            | 155,0                             |
| 500                                   | 20"                                   | 2,0                              | 379,0                                 | 32,0                               | 580                              | 840            | 215,0                             | 280                              | 850            | 175,0                             |
| 500                                   | 20"                                   | 4,0                              | 270,0                                 | 32,0                               | 610                              | 840            | 220,0                             | 330                              | 850            | 180,0                             |
| 500                                   | 20"                                   | 6,0                              | 172,0                                 | 32,0                               | 640                              | 840            | 220,0                             | 440                              | 850            | 195,0                             |
| 600                                   | 24"                                   | 2,0                              | 575,0                                 | 46,0                               | 600                              | 940            | 275,0                             | 300                              | 950            | 220,0                             |
| 600                                   | 24"                                   | 4,0                              | 411,0                                 | 46,0                               | 640                              | 940            | 280,0                             | 360                              | 950            | 230,0                             |
| 600                                   | 24"                                   | 6,0                              | 261,0                                 | 46,0                               | 680                              | 940            | 280,0                             | 460                              | 950            | 245,0                             |
| 700                                   | 28"                                   | 1,5                              | 1 010,0                               | 62,0                               | 640                              | 1 050          | 400,0                             | 330                              | 1 060          | 310,0                             |
| 700                                   | 28"                                   | 2,0                              | 674,0                                 | 620,0                              | 650                              | 1 050          | 395,0                             | 350                              | 1 060          | 315,0                             |
| 700                                   | 28"                                   | 4,0                              | 449,0                                 | 62,0                               | 690                              | 1 050          | 400,0                             | 420                              | 1 060          | 325,0                             |
| 800                                   | 32"                                   | 1,5                              | 1 346,0                               | 121,0                              | 660                              | 1 150          | 475,0                             | 360                              | 1 160          | 380,0                             |
| 800                                   | 32"                                   | 2,0                              | 897,0                                 | 121,0                              | 670                              | 1 150          | 470,0                             | 380                              | 1 160          | 380,0                             |
| 800                                   | 32"                                   | 4,0                              | 598,0                                 | 121,0                              | 720                              | 1 150          | 480,0                             | 450                              | 1 160          | 390,0                             |
| 900                                   | 36"                                   | 1,5                              | 1 719,0                               | 153,0                              | 700                              | 1 350          | 630,0                             | 390                              | 1 360          | 495,0                             |
| 900                                   | 36"                                   | 2,0                              | 1 146,0                               | 153,0                              | 720                              | 1 350          | 630,0                             | 410                              | 1 360          | 500,0                             |
| 900                                   | 36"                                   | 4,0                              | 764,0                                 | 153,0                              | 770                              | 1 350          | 640,0                             | 500                              | 1 360          | 520,0                             |
| 1000                                  | 40"                                   | 1,5                              | 1 938,0                               | 189,0                              | 900                              | 1 445          | 920,0                             | 840                              | 1 445          | 915,0                             |
| 1000                                  | 40"                                   | 2,0                              | 1 292,0                               | 189,0                              | 910                              | 1 445          | 920,0                             | 860                              | 1 445          | 915,0                             |
| 1000                                  | 40"                                   | 3,0                              | 862,0                                 | 189,0                              | 940                              | 1 445          | 920,0                             | 890                              | 1 445          | 920,0                             |

## PN 1

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Uhlový pohyb<br>Angular movement | Ohybová tuhosť<br>Angular spring rate | Treći moment<br>Frictional moments |
|---------------------------------------|---------------------------------------|----------------------------------|---------------------------------------|------------------------------------|
| DN                                    | DN                                    | ± deg (°)                        | N.m/°                                 | N.m/bar                            |
| mm                                    | inch                                  |                                  |                                       |                                    |
| 1100                                  | 44"                                   | 1,5                              | 2 356,0                               | 229,0                              |
| 1100                                  | 44"                                   | 2,0                              | 1 571,0                               | 229,0                              |
| 1100                                  | 44"                                   | 3,0                              | 1 047,0                               | 229,0                              |
| 1200                                  | 48"                                   | 1,5                              | 2 549,0                               | 271,0                              |
| 1200                                  | 48"                                   | 2,0                              | 1 699,0                               | 271,0                              |
| 1200                                  | 48"                                   | 3,0                              | 1 133,0                               | 271,0                              |
| 1300                                  | 52"                                   | 1,0                              | 1 708,0                               | 429,0                              |
| 1300                                  | 52"                                   | 1,5                              | 1 281,0                               | 429,0                              |
| 1300                                  | 52"                                   | 3,0                              | 569,0                                 | 429,0                              |
| 1400                                  | 56"                                   | 1,0                              | 2 111,0                               | 495,0                              |
| 1400                                  | 56"                                   | 1,5                              | 1 584,0                               | 495,0                              |
| 1400                                  | 56"                                   | 3,0                              | 704,0                                 | 495,0                              |
| 1500                                  | 60"                                   | 1,0                              | 2 575,0                               | 565,0                              |
| 1500                                  | 60"                                   | 1,5                              | 2 331,0                               | 563,0                              |
| 1500                                  | 60"                                   | 3,0                              | 1 036,0                               | 563,0                              |
| 1600                                  | 64"                                   | 1,0                              | 3 743,0                               | 637,0                              |
| 1600                                  | 64"                                   | 1,5                              | 2 246,0                               | 637,0                              |
| 1600                                  | 64"                                   | 3,0                              | 1 248,0                               | 637,0                              |
| 1800                                  | 72"                                   | 1,0                              | 4 360,0                               | 802,0                              |
| 1800                                  | 72"                                   | 1,5                              | 2 616,0                               | 802,0                              |
| 1800                                  | 72"                                   | 3,0                              | 1 453,0                               | 802,0                              |
| 2000                                  | 80"                                   | 1,0                              | 5 919,0                               | 983,0                              |
| 2000                                  | 80"                                   | 1,5                              | 3 552,0                               | 983,0                              |
| 2000                                  | 80"                                   | 3,0                              | 1 973,0                               | 983,0                              |
| 2200                                  | 88"                                   | 1,0                              | 13 056,0                              | 1 480,0                            |
| 2200                                  | 88"                                   | 1,5                              | 7 833,0                               | 1 480,0                            |
| 2200                                  | 88"                                   | 3,0                              | 4 352,0                               | 1 480,0                            |
| 2400                                  | 96"                                   | 1,0                              | 16 833,0                              | 1 753,0                            |
| 2400                                  | 96"                                   | 1,5                              | 10 100,0                              | 1 753,0                            |
| 2400                                  | 96"                                   | 3,0                              | 5 611,0                               | 1 753,0                            |
| 2600                                  | 104"                                  | 1,0                              | 21 271,0                              | 2 049,0                            |
| 2600                                  | 104"                                  | 1,5                              | 12 763,0                              | 2 049,0                            |
| 2600                                  | 104"                                  | 3,0                              | 7 090,0                               | 2 049,0                            |
| 2800                                  | 112"                                  | 1,0                              | 26 428,0                              | 2 368,0                            |
| 2800                                  | 112"                                  | 1,5                              | 15 857,0                              | 2 368,0                            |
| 2800                                  | 112"                                  | 3,0                              | 8 809,0                               | 2 368,0                            |
| 3000                                  | 120"                                  | 1,0                              | 32 358,0                              | 3 253,0                            |
| 3000                                  | 120"                                  | 1,5                              | 10 786,0                              | 3 253,0                            |
| 3000                                  | 120"                                  | 3,0                              | 10 786,0                              | 3 253,0                            |
| 3200                                  | 128"                                  | 1,0                              | 39 122,0                              | 3 691,0                            |
| 3200                                  | 128"                                  | 1,5                              | 13 041,0                              | 3 691,0                            |
| 3400                                  | 136"                                  | 1,0                              | 49 593,0                              | 4 160,0                            |
| 3400                                  | 136"                                  | 1,5                              | 16 531,0                              | 4 160,0                            |
| 3600                                  | 144"                                  | 1,0                              | 58 687,0                              | 5 430,0                            |
| 3600                                  | 144"                                  | 1,5                              | 19 562,0                              | 5 430,0                            |
| 3800                                  | 152"                                  | 1,0                              | 68 819,0                              | 6 038,0                            |
| 3800                                  | 152"                                  | 1,5                              | 22 940,0                              | 6 038,0                            |
| 4000                                  | 160"                                  | 1,0                              | 79 984,0                              | 7 628,0                            |
| 4000                                  | 160"                                  | 1,5                              | 26 661,0                              | 7 628,0                            |



## MWC

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 920                              | 1 540          | 1 015,0                           |
| 940                              | 1 540          | 1 020,0                           |
| 970                              | 1 540          | 1 020,0                           |
| 990                              | 1 650          | 1 380,0                           |
| 1 000                            | 1 650          | 1 375,0                           |
| 1 040                            | 1 650          | 1 385,0                           |
| 990                              | 1 815          | 1 560,0                           |
| 1 010                            | 1 815          | 1 565,0                           |
| 1 070                            | 1 815          | 1 570,0                           |
| 990                              | 1 915          | 1 650,0                           |
| 1 010                            | 1 915          | 1 655,0                           |
| 1 070                            | 1 915          | 1 660,0                           |
| 1 100                            | 2 015          | 1 885,0                           |
| 1 120                            | 2 015          | 1 890,0                           |
| 1 180                            | 2 015          | 1 890,0                           |
| 1 120                            | 2 115          | 2 045,0                           |
| 1 140                            | 2 115          | 2 045,0                           |
| 1 210                            | 2 115          | 2 060,0                           |
| 1 160                            | 2 335          | 2 390,0                           |
| 1 190                            | 2 335          | 2 395,0                           |
| 1 260                            | 2 335          | 2 415,0                           |
| 1 270                            | 2 495          | 2 775,0                           |
| 1 290                            | 2 495          | 2 775,0                           |
| 1 370                            | 2 495          | 2 795,0                           |
| 1 310                            | 2 695          | 3 165,0                           |
| 1 340                            | 2 695          | 3 180,0                           |
| 1 420                            | 2 695          | 3 225,0                           |
| 1 450                            | 2 895          | 4 380,0                           |
| 1 480                            | 2 895          | 4 395,0                           |
| 1 570                            | 2 895          | 4 455,0                           |
| 1 560                            | 3 095          | 4 955,0                           |
| 1 590                            | 3 095          | 4 975,0                           |
| 1 690                            | 3 095          | 5 045,0                           |
| 1 660                            | 3 315          | 5 600,0                           |
| 1 700                            | 3 315          | 5 625,0                           |
| 1 800                            | 3 315          | 5 705,0                           |
| 1 770                            | 3 515          | 6 310,0                           |
| 1 800                            | 3 515          | 6 325,0                           |
| 1 910                            | 3 515          | 6 425,0                           |
| 1 890                            | 3 715          | 7 075,0                           |
| 1 930                            | 3 715          | 7 100,0                           |
| 1 960                            | 3 920          | 8 005,0                           |
| 2 000                            | 3 920          | 8 010,0                           |
| 2 040                            | 4 120          | 9 665,0                           |
| 2 080                            | 4 120          | 9 665,0                           |
| 2 140                            | 4 320          | 10 375,0                          |
| 2 190                            | 4 320          | 10 390,0                          |
| 2 270                            | 4 520          | 11 980,0                          |
| 2 320                            | 4 520          | 11 935,0                          |



## MFC

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 870                              | 1 540          | 1 010,0                           |
| 880                              | 1 540          | 1 010,0                           |
| 920                              | 1 540          | 1 015,0                           |
| 910                              | 1 650          | 1 360,0                           |
| 930                              | 1 650          | 1 365,0                           |
| 960                              | 1 650          | 1 370,0                           |
| 960                              | 1 815          | 1 570,0                           |
| 980                              | 1 815          | 1 575,0                           |
| 1 030                            | 1 815          | 1 575,0                           |
| 960                              | 1 915          | 1 660,0                           |
| 980                              | 1 915          | 1 665,0                           |
| 1 040                            | 1 915          | 1 670,0                           |
| 1 040                            | 2 015          | 1 905,0                           |
| 1 060                            | 2 015          | 1 910,0                           |
| 1 130                            | 2 015          | 1 915,0                           |
| 1 100                            | 2 115          | 2 090,0                           |
| 1 130                            | 2 115          | 2 095,0                           |
| 1 190                            | 2 115          | 2 105,0                           |
| 1 200                            | 2 335          | 2 565,0                           |
| 1 220                            | 2 335          | 2 565,0                           |
| 1 300                            | 2 335          | 2 590,0                           |
| 1 260                            | 2 495          | 2 935,0                           |
| 1 290                            | 2 495          | 2 940,0                           |
| 1 370                            | 2 495          | 2 965,0                           |
| 1 370                            | 2 695          | 3 440,0                           |
| 1 390                            | 2 695          | 3 450,0                           |
| 1 480                            | 2 695          | 3 505,0                           |
| 1 490                            | 2 895          | 4 520,0                           |
| 1 520                            | 2 895          | 4 540,0                           |
| 1 610                            | 2 895          | 4 600,0                           |
| 1 570                            | 3 095          | 5 090,0                           |
| 1 610                            | 3 095          | 5 120,0                           |
| 1 700                            | 3 095          | 5 180,0                           |
| 1 670                            | 3 315          | 6 015,0                           |
| 1 700                            | 3 315          | 6 035,0                           |
| 1 810                            | 3 315          | 6 130,0                           |
| 1 800                            | 3 515          | 6 780,0                           |
| 1 840                            | 3 515          | 6 800,0                           |
| 1 950                            | 3 515          | 6 905,0                           |
| 1 920                            | 3 715          | 7 570,0                           |
| 1 960                            | 3 715          | 7 595,0                           |
| 2 000                            | 3 920          | 8 565,0                           |
| 2 040                            | 3 920          | 8 570,0                           |
| 2 050                            | 4 120          | 10 275,0                          |
| 2 090                            | 4 120          | 10 275,0                          |
| 2 100                            | 4 320          | 11 220,0                          |
| 2 150                            | 4 320          | 11 235,0                          |
| 2 140                            | 4 520          | 12 450,0                          |
| 2 190                            | 4 520          | 12 410,0                          |

PN 2,5

| Menovitá svetlost'<br>Nominal diameter | Menovitá svetlost'<br>Nominal diameter | Uhlový pohyb<br>Angular movement | Ohybová tuhosť<br>Angular spring rate | Treći moment<br>Frictional moments |
|----------------------------------------|----------------------------------------|----------------------------------|---------------------------------------|------------------------------------|
| DN                                     | DN                                     | ± deg (°)                        | N.m/°                                 | N.m/bar                            |
| mm                                     | inch                                   |                                  |                                       |                                    |
| 50                                     | 2"                                     | 6,0                              | 0,8                                   | 0,3                                |
| 50                                     | 2"                                     | 12,0                             | 0,4                                   | 0,3                                |
| 65                                     | 2 ½"                                   | 6,0                              | 0,8                                   | 0,5                                |
| 65                                     | 2 ½"                                   | 12,0                             | 0,4                                   | 0,5                                |
| 80                                     | 3"                                     | 3,0                              | 1,0                                   | 0,7                                |
| 80                                     | 3"                                     | 6,0                              | 0,6                                   | 0,7                                |
| 80                                     | 3"                                     | 12,0                             | 0,4                                   | 0,7                                |
| 100                                    | 4"                                     | 3,0                              | 4,9                                   | 1,1                                |
| 100                                    | 4"                                     | 6,0                              | 2,7                                   | 1,1                                |
| 100                                    | 4"                                     | 12,0                             | 1,9                                   | 1,1                                |
| 125                                    | 5"                                     | 3,0                              | 17,0                                  | 2,0                                |
| 125                                    | 5"                                     | 6,0                              | 9,6                                   | 2,0                                |
| 125                                    | 5"                                     | 12,0                             | 6,7                                   | 2,0                                |
| 150                                    | 6"                                     | 3,0                              | 33,0                                  | 2,8                                |
| 150                                    | 6"                                     | 6,0                              | 18,0                                  | 2,8                                |
| 150                                    | 6"                                     | 12,0                             | 13,0                                  | 2,8                                |
| 200                                    | 8"                                     | 3,0                              | 41,0                                  | 4,7                                |
| 200                                    | 8"                                     | 6,0                              | 23,0                                  | 4,7                                |
| 200                                    | 8"                                     | 12,0                             | 16,0                                  | 4,7                                |
| 250                                    | 10"                                    | 3,0                              | 66,0                                  | 7,2                                |
| 250                                    | 10"                                    | 6,0                              | 36,0                                  | 7,2                                |
| 250                                    | 10"                                    | 12,0                             | 25,0                                  | 7,2                                |
| 300                                    | 12"                                    | 2,0                              | 92,0                                  | 13,0                               |
| 300                                    | 12"                                    | 4,0                              | 51,0                                  | 13,0                               |
| 300                                    | 12"                                    | 6,0                              | 36,0                                  | 13,0                               |
| 350                                    | 14"                                    | 2,0                              | 92,0                                  | 16,0                               |
| 350                                    | 14"                                    | 4,0                              | 51,0                                  | 16,0                               |
| 350                                    | 14"                                    | 6,0                              | 35,0                                  | 16,0                               |
| 400                                    | 16"                                    | 2,0                              | 223,0                                 | 21,0                               |
| 400                                    | 16"                                    | 4,0                              | 160,0                                 | 21,0                               |
| 400                                    | 16"                                    | 6,0                              | 102,0                                 | 21,0                               |
| 500                                    | 20"                                    | 2,0                              | 540,0                                 | 33,0                               |
| 500                                    | 20"                                    | 4,0                              | 386,0                                 | 33,0                               |
| 500                                    | 20"                                    | 6,0                              | 246,0                                 | 33,0                               |
| 600                                    | 24"                                    | 2,0                              | 820,0                                 | 69,0                               |
| 600                                    | 24"                                    | 4,0                              | 585,0                                 | 69,0                               |
| 600                                    | 24"                                    | 6,0                              | 373,0                                 | 69,0                               |
| 700                                    | 28"                                    | 1,5                              | 1 440,0                               | 94,0                               |
| 700                                    | 28"                                    | 2,0                              | 960,0                                 | 94,0                               |
| 800                                    | 32"                                    | 1,5                              | 1 918,0                               | 162,0                              |
| 800                                    | 32"                                    | 2,0                              | 1 278,0                               | 162,0                              |
| 800                                    | 32"                                    | 4,0                              | 852,0                                 | 162,0                              |
| 900                                    | 36"                                    | 1,5                              | 2 449,0                               | 255,0                              |
| 900                                    | 36"                                    | 2,0                              | 1 633,0                               | 255,0                              |
| 900                                    | 36"                                    | 4,0                              | 1 088,0                               | 255,0                              |
| 1000                                   | 40"                                    | 1,5                              | 3 886,0                               | 315,0                              |
| 1000                                   | 40"                                    | 2,0                              | 2 590,0                               | 315,0                              |
| 1000                                   | 40"                                    | 3,0                              | 1 727,0                               | 315,0                              |



MWC



MFC

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                | mm                               | mm             | kg                                |
| 290                              | 245            | 10,0                              | 130                              | 250            | 9,0                               |
| 320                              | 245            | 10,0                              | 210                              | 250            | 10,0                              |
| 340                              | 270            | 13,0                              | 140                              | 275            | 11,0                              |
| 370                              | 270            | 13,0                              | 230                              | 275            | 12,0                              |
| 330                              | 270            | 16,0                              | 130                              | 275            | 14,0                              |
| 340                              | 270            | 16,0                              | 180                              | 275            | 15,0                              |
| 370                              | 270            | 16,0                              | 260                              | 275            | 16,0                              |
| 350                              | 340            | 23,0                              | 150                              | 345            | 20,0                              |
| 370                              | 340            | 23,0                              | 210                              | 345            | 22,0                              |
| 410                              | 340            | 24,0                              | 300                              | 345            | 24,0                              |
| 350                              | 365            | 27,0                              | 150                              | 370            | 25,0                              |
| 370                              | 365            | 27,0                              | 220                              | 370            | 26,0                              |
| 410                              | 365            | 28,0                              | 320                              | 370            | 29,0                              |
| 360                              | 410            | 39,0                              | 160                              | 415            | 35,0                              |
| 380                              | 410            | 39,0                              | 230                              | 415            | 38,0                              |
| 420                              | 410            | 41,0                              | 340                              | 415            | 42,0                              |
| 380                              | 445            | 54,0                              | 170                              | 455            | 45,0                              |
| 400                              | 445            | 54,0                              | 250                              | 455            | 48,0                              |
| 450                              | 445            | 56,0                              | 370                              | 455            | 55,0                              |
| 410                              | 560            | 75,0                              | 200                              | 570            | 65,0                              |
| 440                              | 560            | 75,0                              | 280                              | 570            | 70,0                              |
| 500                              | 560            | 80,0                              | 420                              | 570            | 80,0                              |
| 420                              | 610            | 100,0                             | 190                              | 620            | 80,0                              |
| 440                              | 610            | 100,0                             | 270                              | 620            | 90,0                              |
| 460                              | 610            | 95,0                              | 360                              | 620            | 95,0                              |
| 420                              | 660            | 110,0                             | 190                              | 670            | 100,0                             |
| 440                              | 660            | 110,0                             | 290                              | 670            | 105,0                             |
| 470                              | 660            | 110,0                             | 390                              | 670            | 115,0                             |
| 510                              | 740            | 180,0                             | 250                              | 750            | 155,0                             |
| 540                              | 740            | 180,0                             | 310                              | 750            | 160,0                             |
| 570                              | 740            | 180,0                             | 440                              | 750            | 175,0                             |
| 580                              | 840            | 250,0                             | 300                              | 850            | 210,0                             |
| 610                              | 840            | 250,0                             | 350                              | 850            | 215,0                             |
| 640                              | 840            | 255,0                             | 460                              | 850            | 230,0                             |
| 600                              | 940            | 315,0                             | 320                              | 950            | 265,0                             |
| 640                              | 940            | 320,0                             | 380                              | 950            | 275,0                             |
| 680                              | 940            | 325,0                             | 480                              | 950            | 295,0                             |
| 640                              | 1 050          | 445,0                             | 350                              | 1 060          | 365,0                             |
| 650                              | 1 050          | 445,0                             | 370                              | 1 060          | 365,0                             |
| 660                              | 1 150          | 530,0                             | 380                              | 1 160          | 440,0                             |
| 670                              | 1 150          | 530,0                             | 400                              | 1 160          | 445,0                             |
| 720                              | 1 150          | 540,0                             | 470                              | 1 160          | 460,0                             |
| 700                              | 1 350          | 740,0                             | 410                              | 1 360          | 580,0                             |
| 720                              | 1 350          | 745,0                             | 430                              | 1 360          | 585,0                             |
| 770                              | 1 350          | 755,0                             | 520                              | 1 360          | 605,0                             |
| 940                              | 1 445          | 850,0                             | 870                              | 1 445          | 1 065,0                           |
| 950                              | 1 445          | 850,0                             | 890                              | 1 445          | 1 070,0                           |
| 980                              | 1 445          | 855,0                             | 920                              | 1 445          | 1 075,0                           |

PN 2,5

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Uholový pohyb<br>Angular movement | Ohybová tuhosť<br>Angular spring rate | Treći moment<br>Frictional moments |
|---------------------------------------|---------------------------------------|-----------------------------------|---------------------------------------|------------------------------------|
| DN                                    | DN                                    | ± deg (°)                         | N.m/°                                 | N.m/bar                            |
| mm                                    | inch                                  |                                   |                                       |                                    |
| 1100                                  | 44"                                   | 1,5                               | 4 722,0                               | 381,0                              |
| 1100                                  | 44"                                   | 2,0                               | 3 148,0                               | 381,0                              |
| 1100                                  | 44"                                   | 3,0                               | 2 099,0                               | 381,0                              |
| 1200                                  | 48"                                   | 1,5                               | 5 108,0                               | 543,0                              |
| 1200                                  | 48"                                   | 2,0                               | 3 405,0                               | 543,0                              |
| 1200                                  | 48"                                   | 3,0                               | 2 270,0                               | 543,0                              |
| 1300                                  | 52"                                   | 1,0                               | 4 126,0                               | 642,0                              |
| 1300                                  | 52"                                   | 1,5                               | 3 094,0                               | 642,0                              |
| 1300                                  | 52"                                   | 3,0                               | 2 063,0                               | 642,0                              |
| 1400                                  | 56"                                   | 1,0                               | 5 103,0                               | 740,0                              |
| 1400                                  | 56"                                   | 1,5                               | 3 828,0                               | 740,0                              |
| 1400                                  | 56"                                   | 3,0                               | 2 552,0                               | 740,0                              |
| 1500                                  | 60"                                   | 1,0                               | 6 225,0                               | 985,0                              |
| 1500                                  | 60"                                   | 1,5                               | 4 668,0                               | 985,0                              |
| 1500                                  | 60"                                   | 3,0                               | 3 112,0                               | 985,0                              |
| 1600                                  | 64"                                   | 1,0                               | 7 497,0                               | 1 116,0                            |
| 1600                                  | 64"                                   | 1,5                               | 4 498,0                               | 1 116,0                            |
| 1600                                  | 64"                                   | 3,0                               | 3 749,0                               | 1 116,0                            |
| 1800                                  | 72"                                   | 1,0                               | 10 545,0                              | 1 400,0                            |
| 1800                                  | 72"                                   | 1,5                               | 6 327,0                               | 1 400,0                            |
| 1800                                  | 72"                                   | 3,0                               | 5 272,0                               | 1 400,0                            |
| 2000                                  | 80"                                   | 1,0                               | 14 320,0                              | 1 963,0                            |
| 2000                                  | 80"                                   | 1,5                               | 8 592,0                               | 1 963,0                            |
| 2000                                  | 80"                                   | 3,0                               | 7 160,0                               | 1 963,0                            |
| 2200                                  | 88"                                   | 1,0                               | 18 907,0                              | 2 362,0                            |
| 2200                                  | 88"                                   | 1,5                               | 11 344,0                              | 2 362,0                            |
| 2200                                  | 88"                                   | 3,0                               | 9 453,0                               | 2 362,0                            |
| 2400                                  | 96"                                   | 1,0                               | 30 269,0                              | 3 158,0                            |
| 2400                                  | 96"                                   | 1,5                               | 18 162,0                              | 3 158,0                            |
| 2400                                  | 96"                                   | 3,0                               | 15 135,0                              | 3 158,0                            |
| 2600                                  | 104"                                  | 1,0                               | 38 252,0                              | 4 101,0                            |
| 2600                                  | 104"                                  | 1,5                               | 22 951,0                              | 4 101,0                            |
| 2600                                  | 104"                                  | 3,0                               | 19 126,0                              | 4 101,0                            |
| 2800                                  | 112"                                  | 1,0                               | 57 498,0                              | 4 730,0                            |
| 2800                                  | 112"                                  | 1,5                               | 34 499,0                              | 4 730,0                            |
| 2800                                  | 112"                                  | 3,0                               | 28 749,0                              | 4 730,0                            |
| 3000                                  | 120"                                  | 1,5                               | 34 912,0                              | 6 509,0                            |
| 3000                                  | 120"                                  | 1,5                               | 34 912,0                              | 6 509,0                            |
| 3000                                  | 120"                                  | 3,0                               | 29 093,0                              | 6 509,0                            |
| 3200                                  | 128"                                  | 1,0                               | 70 339,0                              | 7 386,0                            |
| 3200                                  | 128"                                  | 1,5                               | 42 203,0                              | 7 386,0                            |
| 3200                                  | 128"                                  | 3,0                               | 35 169,0                              | 7 386,0                            |



## MWC

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 960                              | 1 540          | 1 050,0                           |
| 980                              | 1 540          | 1 055,0                           |
| 1 010                            | 1 540          | 1 060,0                           |
| 1 010                            | 1 650          | 1 475,0                           |
| 1 020                            | 1 650          | 1 475,0                           |
| 1 060                            | 1 650          | 1 490,0                           |
| 1 050                            | 1 815          | 1 690,0                           |
| 1 070                            | 1 815          | 1 695,0                           |
| 1 130                            | 1 815          | 1 720,0                           |
| 1 050                            | 1 915          | 1 785,0                           |
| 1 070                            | 1 915          | 1 795,0                           |
| 1 130                            | 1 915          | 1 820,0                           |
| 1 140                            | 2 015          | 2 015,0                           |
| 1 160                            | 2 015          | 2 025,0                           |
| 1 220                            | 2 015          | 2 050,0                           |
| 1 200                            | 2 120          | 2 270,0                           |
| 1 220                            | 2 120          | 2 275,0                           |
| 1 290                            | 2 120          | 2 315,0                           |
| 1 280                            | 2 340          | 3 090,0                           |
| 1 310                            | 2 340          | 3 105,0                           |
| 1 380                            | 2 340          | 3 140,0                           |
| 1 350                            | 2 540          | 3 575,0                           |
| 1 370                            | 2 540          | 3 585,0                           |
| 1 450                            | 2 540          | 3 635,0                           |
| 1 450                            | 2 760          | 4 100,0                           |
| 1 480                            | 2 760          | 4 115,0                           |
| 1 570                            | 2 760          | 4 175,0                           |
| 1 580                            | 2 960          | 4 695,0                           |
| 1 610                            | 2 960          | 4 725,0                           |
| 1 700                            | 2 960          | 4 800,0                           |
| 1 660                            | 3 175          | 6 175,0                           |
| 1 690                            | 3 175          | 6 215,0                           |
| 1 790                            | 3 175          | 6 310,0                           |
| 1 740                            | 3 385          | 6 850,0                           |
| 1 780                            | 3 385          | 6 900,0                           |
| 1 880                            | 3 385          | 6 995,0                           |
| 1 920                            | 3 595          | 8 945,0                           |
| 1 920                            | 3 595          | 8 945,0                           |
| 2 030                            | 3 595          | 9 060,0                           |
| 1 990                            | 3 850          | 10 215,0                          |
| 2 030                            | 3 850          | 10 270,0                          |
| 2 150                            | 3 850          | 10 410,0                          |



## MFC

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 900                              | 1 540          | 1 205,0                           |
| 920                              | 1 540          | 1 210,0                           |
| 950                              | 1 540          | 1 220,0                           |
| 940                              | 1 650          | 1 575,0                           |
| 960                              | 1 650          | 1 580,0                           |
| 990                              | 1 650          | 1 590,0                           |
| 1 000                            | 1 815          | 1 855,0                           |
| 1 020                            | 1 815          | 1 860,0                           |
| 1 070                            | 1 815          | 1 880,0                           |
| 1 000                            | 1 915          | 1 960,0                           |
| 1 020                            | 1 915          | 1 970,0                           |
| 1 080                            | 1 915          | 1 995,0                           |
| 1 090                            | 2 015          | 2 290,0                           |
| 1 110                            | 2 015          | 2 295,0                           |
| 1 170                            | 2 015          | 2 325,0                           |
| 1 150                            | 2 120          | 2 570,0                           |
| 1 170                            | 2 120          | 2 575,0                           |
| 1 240                            | 2 120          | 2 615,0                           |
| 1 240                            | 2 340          | 3 500,0                           |
| 1 260                            | 2 340          | 3 510,0                           |
| 1 340                            | 2 340          | 3 555,0                           |
| 1 310                            | 2 540          | 4 080,0                           |
| 1 340                            | 2 540          | 4 095,0                           |
| 1 410                            | 2 540          | 4 145,0                           |
| 1 420                            | 2 760          | 4 840,0                           |
| 1 450                            | 2 760          | 4 860,0                           |
| 1 540                            | 2 760          | 4 920,0                           |
| 1 550                            | 2 960          | 5 600,0                           |
| 1 580                            | 2 960          | 5 635,0                           |
| 1 680                            | 2 960          | 5 720,0                           |
| 1 640                            | 3 175          | 7 260,0                           |
| 1 670                            | 3 175          | 7 300,0                           |
| 1 770                            | 3 175          | 7 400,0                           |
| 1 730                            | 3 385          | 8 320,0                           |
| 1 770                            | 3 385          | 8 370,0                           |
| 1 870                            | 3 385          | 8 475,0                           |
| 1 910                            | 3 595          | 10 490,0                          |
| 1 910                            | 3 595          | 10 490,0                          |
| 2 020                            | 3 595          | 10 615,0                          |
| 2 000                            | 3 850          | 12 065,0                          |
| 2 040                            | 3 850          | 12 120,0                          |
| 2 160                            | 3 850          | 12 270,0                          |

## PN 6

| Menovitá svetlost'<br>Nominal diameter | Menovitá svetlost'<br>Nominal diameter | Uhlový pohyb<br>Angular movement | Ohybová tuhosť<br>Angular spring rate | Trecí moment<br>Frictional moments | MWC                              |                |                                   | MFC                              |                |                                   |
|----------------------------------------|----------------------------------------|----------------------------------|---------------------------------------|------------------------------------|----------------------------------|----------------|-----------------------------------|----------------------------------|----------------|-----------------------------------|
|                                        |                                        |                                  |                                       |                                    | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|                                        |                                        |                                  |                                       |                                    | mm                               | mm             | kg                                | mm                               | mm             | kg                                |
| DN                                     | DN                                     | ± deg (°)                        | N.m/°                                 | N.m/bar                            |                                  |                |                                   |                                  |                |                                   |
| mm                                     | inch                                   |                                  |                                       |                                    |                                  |                |                                   |                                  |                |                                   |
| 50                                     | 2"                                     | 6,0                              | 1,6                                   | 0,3                                | 290                              | 245            | 10,0                              | 130                              | 250            | 9,0                               |
| 50                                     | 2"                                     | 12,0                             | 0,8                                   | 0,3                                | 320                              | 245            | 11,0                              | 210                              | 250            | 10,0                              |
| 65                                     | 2 ½"                                   | 6,0                              | 1,5                                   | 0,5                                | 340                              | 270            | 13,0                              | 140                              | 275            | 11,0                              |
| 65                                     | 2 ½"                                   | 12,0                             | 0,8                                   | 0,5                                | 370                              | 270            | 14,0                              | 230                              | 275            | 12,0                              |
| 80                                     | 3"                                     | 3,0                              | 2,1                                   | 0,7                                | 330                              | 270            | 16,0                              | 130                              | 275            | 14,0                              |
| 80                                     | 3"                                     | 6,0                              | 1,3                                   | 0,7                                | 340                              | 270            | 16,0                              | 190                              | 275            | 15,0                              |
| 80                                     | 3"                                     | 12,0                             | 0,9                                   | 0,7                                | 370                              | 270            | 16,0                              | 270                              | 275            | 16,0                              |
| 100                                    | 4"                                     | 3,0                              | 10,0                                  | 1,1                                | 350                              | 340            | 24,0                              | 150                              | 345            | 21,0                              |
| 100                                    | 4"                                     | 6,0                              | 5,5                                   | 1,1                                | 370                              | 340            | 24,0                              | 210                              | 345            | 22,0                              |
| 100                                    | 4"                                     | 12,0                             | 3,8                                   | 1,1                                | 410                              | 340            | 25,0                              | 310                              | 345            | 25,0                              |
| 125                                    | 5"                                     | 3,0                              | 35,0                                  | 2,0                                | 350                              | 365            | 28,0                              | 150                              | 370            | 25,0                              |
| 125                                    | 5"                                     | 6,0                              | 19,0                                  | 2,0                                | 370                              | 365            | 28,0                              | 220                              | 370            | 27,0                              |
| 125                                    | 5"                                     | 12,0                             | 13,0                                  | 2,0                                | 410                              | 365            | 29,0                              | 320                              | 370            | 30,0                              |
| 150                                    | 6"                                     | 3,0                              | 66,0                                  | 2,8                                | 360                              | 410            | 44,0                              | 160                              | 415            | 36,0                              |
| 150                                    | 6"                                     | 6,0                              | 37,0                                  | 2,8                                | 380                              | 410            | 44,0                              | 240                              | 415            | 39,0                              |
| 150                                    | 6"                                     | 12,0                             | 25,0                                  | 2,8                                | 420                              | 410            | 46,0                              | 350                              | 415            | 44,0                              |
| 200                                    | 8"                                     | 3,0                              | 83,0                                  | 6,3                                | 380                              | 445            | 55,0                              | 170                              | 455            | 46,0                              |
| 200                                    | 8"                                     | 6,0                              | 46,0                                  | 6,3                                | 400                              | 445            | 56,0                              | 260                              | 455            | 51,0                              |
| 200                                    | 8"                                     | 12,0                             | 32,0                                  | 6,3                                | 450                              | 445            | 58,0                              | 380                              | 455            | 58,0                              |
| 250                                    | 10"                                    | 3,0                              | 132,0                                 | 9,6                                | 410                              | 560            | 75,0                              | 200                              | 570            | 65,0                              |
| 250                                    | 10"                                    | 6,0                              | 73,0                                  | 9,6                                | 440                              | 560            | 80,0                              | 290                              | 570            | 70,0                              |
| 250                                    | 10"                                    | 12,0                             | 51,0                                  | 9,6                                | 500                              | 560            | 80,0                              | 430                              | 570            | 80,0                              |
| 300                                    | 12"                                    | 2,0                              | 186,0                                 | 13,0                               | 420                              | 610            | 110,0                             | 190                              | 620            | 85,0                              |
| 300                                    | 12"                                    | 4,0                              | 103,0                                 | 13,0                               | 440                              | 610            | 110,0                             | 270                              | 620            | 90,0                              |
| 300                                    | 12"                                    | 6,0                              | 71,0                                  | 13,0                               | 460                              | 610            | 110,0                             | 370                              | 620            | 100,0                             |
| 350                                    | 14"                                    | 2,0                              | 185,0                                 | 16,0                               | 430                              | 660            | 125,0                             | 190                              | 670            | 100,0                             |
| 350                                    | 14"                                    | 4,0                              | 103,0                                 | 16,0                               | 450                              | 660            | 125,0                             | 290                              | 670            | 110,0                             |
| 350                                    | 14"                                    | 6,0                              | 71,0                                  | 16,0                               | 480                              | 660            | 125,0                             | 400                              | 670            | 120,0                             |
| 400                                    | 16"                                    | 2,0                              | 449,0                                 | 32,0                               | 520                              | 740            | 195,0                             | 250                              | 750            | 160,0                             |
| 400                                    | 16"                                    | 4,0                              | 321,0                                 | 32,0                               | 550                              | 740            | 200,0                             | 310                              | 750            | 165,0                             |
| 400                                    | 16"                                    | 6,0                              | 204,0                                 | 32,0                               | 580                              | 740            | 200,0                             | 450                              | 750            | 185,0                             |
| 500                                    | 20"                                    | 2,0                              | 924,0                                 | 49,0                               | 590                              | 840            | 255,0                             | 300                              | 850            | 215,0                             |
| 500                                    | 20"                                    | 4,0                              | 660,0                                 | 49,0                               | 620                              | 840            | 260,0                             | 350                              | 850            | 220,0                             |
| 500                                    | 20"                                    | 6,0                              | 420,0                                 | 49,0                               | 650                              | 840            | 265,0                             | 470                              | 850            | 240,0                             |
| 600                                    | 24"                                    | 2,0                              | 1 401,0                               | 70,0                               | 610                              | 940            | 340,0                             | 320                              | 950            | 270,0                             |
| 600                                    | 24"                                    | 4,0                              | 1 001,0                               | 70,0                               | 650                              | 940            | 345,0                             | 380                              | 950            | 285,0                             |
| 600                                    | 24"                                    | 6,0                              | 637,0                                 | 70,0                               | 690                              | 940            | 355,0                             | 480                              | 950            | 305,0                             |
| 700                                    | 28"                                    | 1,5                              | 2 461,0                               | 125,0                              | 650                              | 1 050          | 500,0                             | 350                              | 1 060          | 390,0                             |
| 700                                    | 28"                                    | 2,0                              | 1 640,0                               | 125,0                              | 660                              | 1 050          | 505,0                             | 370                              | 1 060          | 395,0                             |
| 700                                    | 28"                                    | 4,0                              | 1 094,0                               | 125,0                              | 700                              | 1 050          | 510,0                             | 440                              | 1 060          | 415,0                             |
| 800                                    | 32"                                    | 1,5                              | 3 275,0                               | 163,0                              | 680                              | 1 150          | 625,0                             | 380                              | 1 160          | 470,0                             |
| 800                                    | 32"                                    | 2,0                              | 2 184,0                               | 163,0                              | 690                              | 1 150          | 625,0                             | 400                              | 1 160          | 475,0                             |
| 800                                    | 32"                                    | 4,0                              | 1 456,0                               | 163,0                              | 740                              | 1 150          | 640,0                             | 470                              | 1 160          | 495,0                             |
| 900                                    | 36"                                    | 1,5                              | 4 182,0                               | 256,0                              | 720                              | 1 295          | 860,0                             | 410                              | 1 310          | 615,0                             |
| 900                                    | 36"                                    | 2,0                              | 2 788,0                               | 256,0                              | 740                              | 1 295          | 870,0                             | 430                              | 1 310          | 625,0                             |
| 900                                    | 36"                                    | 4,0                              | 1 859,0                               | 256,0                              | 790                              | 1 295          | 885,0                             | 510                              | 1 310          | 650,0                             |
| 1000                                   | 40"                                    | 1,5                              | 3 886,0                               | 315,0                              | 1 180                            | 1 465          | 1 150,0                           | 870                              | 1 465          | 1 170,0                           |
| 1000                                   | 40"                                    | 2,0                              | 3 895,0                               | 315,0                              | 1 190                            | 1 465          | 1 165,0                           | 890                              | 1 465          | 1 190,0                           |
| 1000                                   | 40"                                    | 3,0                              | 2 596,0                               | 315,0                              | 1 220                            | 1 465          | 1 175,0                           | 920                              | 1 465          | 1 200,0                           |

# PN 6

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Uhlový pohyb<br>Angular movement | Ohybová tuhosť<br>Angular spring rate | Treći moment<br>Frictional moments |
|---------------------------------------|---------------------------------------|----------------------------------|---------------------------------------|------------------------------------|
| DN                                    | DN                                    | ± deg (°)                        | N.m/°                                 | N.m/bar                            |
| mm                                    | inch                                  |                                  |                                       |                                    |
| 1100                                  | 44"                                   | 1,5                              | 7 098,0                               | 458,0                              |
| 1100                                  | 44"                                   | 2,0                              | 4 732,0                               | 458,0                              |
| 1100                                  | 44"                                   | 3,0                              | 3 155,0                               | 458,0                              |
| 1200                                  | 48"                                   | 1,5                              | 7 676,0                               | 543,0                              |
| 1200                                  | 48"                                   | 2,0                              | 5 118,0                               | 543,0                              |
| 1200                                  | 48"                                   | 3,0                              | 3 412,0                               | 543,0                              |
| 1300                                  | 52"                                   | 1,0                              | 6 200,0                               | 751,0                              |
| 1300                                  | 52"                                   | 1,5                              | 6 210,0                               | 751,0                              |
| 1300                                  | 52"                                   | 3,0                              | 4 140,0                               | 751,0                              |
| 1400                                  | 56"                                   | 1,0                              | 10 240,0                              | 865,0                              |
| 1400                                  | 56"                                   | 1,5                              | 7 680,0                               | 865,0                              |
| 1400                                  | 56"                                   | 3,0                              | 5 120,0                               | 865,0                              |
| 1500                                  | 60"                                   | 1,0                              | 12 485,0                              | 1 128,0                            |
| 1500                                  | 60"                                   | 1,5                              | 9 364,0                               | 1 128,0                            |
| 1500                                  | 60"                                   | 3,0                              | 6 243,0                               | 1 128,0                            |
| 1600                                  | 64"                                   | 1,0                              | 15 039,0                              | 1 277,0                            |
| 1600                                  | 64"                                   | 1,5                              | 9 024,0                               | 1 277,0                            |
| 1600                                  | 64"                                   | 3,0                              | 7 520,0                               | 1 277,0                            |
| 1800                                  | 72"                                   | 1,0                              | 21 108,0                              | 1 601,0                            |
| 1800                                  | 72"                                   | 1,5                              | 12 665,0                              | 1 601,0                            |
| 1800                                  | 72"                                   | 3,0                              | 10 554,0                              | 1 601,0                            |
| 2000                                  | 80"                                   | 1,0                              | 28 666,0                              | 2 455,0                            |
| 2000                                  | 80"                                   | 1,5                              | 17 199,0                              | 2 455,0                            |
| 2000                                  | 80"                                   | 3,0                              | 14 333,0                              | 2 455,0                            |
| 2200                                  | 88"                                   | 1,0                              | 37 841,0                              | 2 954,0                            |
| 2200                                  | 88"                                   | 1,5                              | 22 705,0                              | 2 954,0                            |
| 2200                                  | 88"                                   | 3,0                              | 18 921,0                              | 2 954,0                            |
| 2400                                  | 96"                                   | 1,0                              | 40 350,0                              | 3 508,0                            |
| 2400                                  | 96"                                   | 1,5                              | 24 210,0                              | 3 508,0                            |
| 2400                                  | 96"                                   | 3,0                              | 20 175,0                              | 3 508,0                            |
| 2600                                  | 104"                                  | 1,0                              | 63 798,0                              | 4 924,0                            |
| 2600                                  | 104"                                  | 1,5                              | 38 279,0                              | 4 924,0                            |
| 2600                                  | 104"                                  | 3,0                              | 31 899,0                              | 4 924,0                            |
| 2800                                  | 112"                                  | 1,0                              | 95 886,0                              | 5 678,0                            |
| 2800                                  | 112"                                  | 1,5                              | 57 532,0                              | 5 678,0                            |
| 2800                                  | 112"                                  | 3,0                              | 47 943,0                              | 5 678,0                            |



## MWC

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 1 240                            | 1 565          | 1 285,0                           |
| 1 260                            | 1 565          | 1 295,0                           |
| 1 290                            | 1 565          | 1 310,0                           |
| 1 350                            | 1 695          | 1 885,0                           |
| 1 360                            | 1 695          | 1 890,0                           |
| 1 400                            | 1 695          | 1 915,0                           |
| 1 380                            | 1 820          | 2 190,0                           |
| 1 400                            | 1 820          | 2 215,0                           |
| 1 460                            | 1 820          | 2 255,0                           |
| 1 420                            | 1 980          | 2 460,0                           |
| 1 440                            | 1 980          | 2 475,0                           |
| 1 500                            | 1 980          | 2 520,0                           |
| 1 500                            | 2 060          | 2 765,0                           |
| 1 520                            | 2 060          | 2 780,0                           |
| 1 580                            | 2 060          | 2 830,0                           |
| 1 660                            | 2 165          | 4 185,0                           |
| 1 680                            | 2 165          | 4 210,0                           |
| 1 750                            | 2 165          | 4 260,0                           |
| 1 690                            | 2 505          | 4 840,0                           |
| 1 710                            | 2 505          | 4 865,0                           |
| 1 790                            | 2 505          | 4 940,0                           |
| 2 010                            | 2 705          | 6 450,0                           |
| 2 040                            | 2 705          | 6 485,0                           |
| 2 120                            | 2 705          | 6 560,0                           |
| 2 110                            | 2 830          | 7 175,0                           |
| 2 140                            | 2 830          | 7 215,0                           |
| 2 230                            | 2 830          | 7 320,0                           |
| 2 230                            | 3 030          | 8 780,0                           |
| 2 260                            | 3 030          | 8 825,0                           |
| 2 350                            | 3 030          | 8 940,0                           |
| 2 420                            | 3 230          | 10 340,0                          |
| 2 450                            | 3 230          | 10 405,0                          |
| 2 550                            | 3 230          | 10 555,0                          |
| 2 620                            | 3 430          | 11 855,0                          |
| 2 650                            | 3 430          | 11 920,0                          |
| 2 760                            | 3 430          | 12 095,0                          |



## MFC

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 900                              | 1 565          | 1 350,0                           |
| 920                              | 1 565          | 1 360,0                           |
| 950                              | 1 565          | 1 380,0                           |
| 940                              | 1 695          | 1 850,0                           |
| 960                              | 1 695          | 1 865,0                           |
| 1 000                            | 1 695          | 1 885,0                           |
| 990                              | 1 820          | 2 265,0                           |
| 1 010                            | 1 820          | 2 290,0                           |
| 1 060                            | 1 820          | 2 330,0                           |
| 1 000                            | 1 980          | 2 560,0                           |
| 1 020                            | 1 980          | 2 580,0                           |
| 1 080                            | 1 980          | 2 625,0                           |
| 1 090                            | 2 060          | 2 915,0                           |
| 1 110                            | 2 060          | 2 935,0                           |
| 1 170                            | 2 060          | 2 985,0                           |
| 1 230                            | 2 165          | 4 340,0                           |
| 1 250                            | 2 165          | 4 365,0                           |
| 1 320                            | 2 165          | 4 420,0                           |
| 1 240                            | 2 505          | 5 110,0                           |
| 1 270                            | 2 505          | 5 145,0                           |
| 1 350                            | 2 505          | 5 225,0                           |
| 1 470                            | 2 705          | 6 850,0                           |
| 1 500                            | 2 705          | 6 885,0                           |
| 1 580                            | 2 705          | 6 970,0                           |
| 1 580                            | 2 830          | 7 820,0                           |
| 1 610                            | 2 830          | 7 865,0                           |
| 1 700                            | 2 830          | 7 975,0                           |
| 1 740                            | 3 030          | 9 430,0                           |
| 1 780                            | 3 030          | 9 495,0                           |
| 1 870                            | 3 030          | 9 620,0                           |
| 1 880                            | 3 230          | 11 245,0                          |
| 1 920                            | 3 230          | 11 330,0                          |
| 2 020                            | 3 230          | 11 490,0                          |
| 2 020                            | 3 430          | 12 935,0                          |
| 2 060                            | 3 430          | 13 020,0                          |
| 2 160                            | 3 430          | 13 195,0                          |

PN 10

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Uhlový pohyb<br>Angular movement | Ohybová tuhosť<br>Angular spring rate | Treći moment<br>Frictional moments |
|---------------------------------------|---------------------------------------|----------------------------------|---------------------------------------|------------------------------------|
| DN                                    | DN                                    | ± deg (°)                        | N.m/°                                 | N.m/bar                            |
| mm                                    | inch                                  |                                  |                                       |                                    |
| 50                                    | 2"                                    | 6,0                              | 1,6                                   | 0,4                                |
| 50                                    | 2"                                    | 12,0                             | 0,8                                   | 0,4                                |
| 65                                    | 2 ½"                                  | 6,0                              | 1,5                                   | 0,6                                |
| 65                                    | 2 ½"                                  | 12,0                             | 0,8                                   | 0,6                                |
| 80                                    | 3"                                    | 3,0                              | 2,1                                   | 0,8                                |
| 80                                    | 3"                                    | 6,0                              | 1,3                                   | 0,8                                |
| 80                                    | 3"                                    | 12,0                             | 0,9                                   | 0,8                                |
| 100                                   | 4"                                    | 3,0                              | 10,0                                  | 1,4                                |
| 100                                   | 4"                                    | 6,0                              | 5,5                                   | 1,4                                |
| 100                                   | 4"                                    | 12,0                             | 3,8                                   | 1,4                                |
| 125                                   | 5"                                    | 3,0                              | 35,0                                  | 2,7                                |
| 125                                   | 5"                                    | 6,0                              | 19,0                                  | 2,7                                |
| 125                                   | 5"                                    | 12,0                             | 13,0                                  | 2,7                                |
| 150                                   | 6"                                    | 3,0                              | 66,0                                  | 3,8                                |
| 150                                   | 6"                                    | 6,0                              | 37,0                                  | 3,8                                |
| 150                                   | 6"                                    | 12,0                             | 25,0                                  | 3,8                                |
| 200                                   | 8"                                    | 3,0                              | 83,0                                  | 8,3                                |
| 200                                   | 8"                                    | 6,0                              | 46,0                                  | 6,3                                |
| 200                                   | 8"                                    | 12,0                             | 32,0                                  | 6,3                                |
| 250                                   | 10"                                   | 3,0                              | 132,0                                 | 9,6                                |
| 250                                   | 10"                                   | 6,0                              | 73,0                                  | 9,6                                |
| 250                                   | 10"                                   | 12,0                             | 51,0                                  | 9,6                                |
| 300                                   | 12"                                   | 2,0                              | 280,0                                 | 20,0                               |
| 300                                   | 12"                                   | 4,0                              | 156,0                                 | 20,0                               |
| 300                                   | 12"                                   | 6,0                              | 108,0                                 | 20,0                               |
| 350                                   | 14"                                   | 2,0                              | 279,0                                 | 24,0                               |
| 350                                   | 14"                                   | 4,0                              | 155,0                                 | 24,0                               |
| 350                                   | 14"                                   | 6,0                              | 107,0                                 | 24,0                               |
| 400                                   | 16"                                   | 2,0                              | 449,0                                 | 32,0                               |
| 400                                   | 16"                                   | 4,0                              | 321,0                                 | 32,0                               |
| 400                                   | 16"                                   | 6,0                              | 204,0                                 | 32,0                               |
| 500                                   | 20"                                   | 2,0                              | 1 019,0                               | 49,0                               |
| 500                                   | 20"                                   | 4,0                              | 728,0                                 | 49,0                               |
| 500                                   | 20"                                   | 6,0                              | 463,0                                 | 49,0                               |
| 600                                   | 24"                                   | 2,0                              | 1 546,0                               | 93,0                               |
| 600                                   | 24"                                   | 4,0                              | 1 104,0                               | 93,0                               |
| 600                                   | 24"                                   | 6,0                              | 703,0                                 | 93,0                               |
| 700                                   | 28"                                   | 1,5                              | 3 742,0                               | 126,0                              |
| 700                                   | 28"                                   | 2,0                              | 2 495,0                               | 126,0                              |
| 700                                   | 28"                                   | 4,0                              | 1 663,0                               | 126,0                              |
| 800                                   | 32"                                   | 1,5                              | 4 979,0                               | 204,0                              |
| 800                                   | 32"                                   | 2,0                              | 3 320,0                               | 204,0                              |
| 800                                   | 32"                                   | 4,0                              | 2 213,0                               | 204,0                              |
| 900                                   | 36"                                   | 1,5                              | 6 356,0                               | 308,0                              |
| 900                                   | 36"                                   | 2,0                              | 4 237,0                               | 308,0                              |
| 900                                   | 36"                                   | 4,0                              | 2 825,0                               | 308,0                              |
| 1000                                  | 40"                                   | 1,5                              | 7 807,0                               | 442,0                              |
| 1000                                  | 40"                                   | 2,0                              | 5 205,0                               | 442,0                              |
| 1000                                  | 40"                                   | 3,0                              | 3 470,0                               | 442,0                              |



MWC



MFC

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                | mm                               | mm             | kg                                |
| 300                              | 245            | 15,0                              | 140                              | 250            | 13,0                              |
| 330                              | 245            | 15,0                              | 220                              | 250            | 14,0                              |
| 360                              | 270            | 20,0                              | 170                              | 275            | 16,0                              |
| 390                              | 270            | 20,0                              | 240                              | 275            | 17,0                              |
| 350                              | 270            | 21,0                              | 150                              | 275            | 18,0                              |
| 360                              | 270            | 21,0                              | 190                              | 275            | 19,0                              |
| 390                              | 270            | 22,0                              | 270                              | 275            | 20,0                              |
| 380                              | 340            | 33,0                              | 170                              | 345            | 27,0                              |
| 400                              | 340            | 33,0                              | 220                              | 345            | 29,0                              |
| 440                              | 340            | 34,0                              | 310                              | 345            | 32,0                              |
| 380                              | 365            | 38,0                              | 180                              | 370            | 33,0                              |
| 400                              | 365            | 38,0                              | 220                              | 370            | 34,0                              |
| 440                              | 365            | 40,0                              | 330                              | 370            | 38,0                              |
| 390                              | 410            | 54,0                              | 180                              | 415            | 47,0                              |
| 410                              | 410            | 54,0                              | 240                              | 415            | 50,0                              |
| 450                              | 410            | 56,0                              | 350                              | 415            | 55,0                              |
| 420                              | 445            | 75,0                              | 200                              | 455            | 60,0                              |
| 440                              | 445            | 75,0                              | 260                              | 455            | 65,0                              |
| 490                              | 445            | 80,0                              | 804                              | 557            | 70,0                              |
| 440                              | 560            | 105,0                             | 230                              | 570            | 90,0                              |
| 470                              | 560            | 105,0                             | 290                              | 570            | 95,0                              |
| 530                              | 560            | 110,0                             | 430                              | 570            | 105,0                             |
| 480                              | 610            | 145,0                             | 230                              | 620            | 115,0                             |
| 500                              | 610            | 145,0                             | 280                              | 620            | 120,0                             |
| 520                              | 610            | 150,0                             | 380                              | 620            | 135,0                             |
| 480                              | 660            | 170,0                             | 240                              | 670            | 145,0                             |
| 500                              | 660            | 170,0                             | 300                              | 670            | 150,0                             |
| 530                              | 660            | 175,0                             | 400                              | 670            | 165,0                             |
| 590                              | 740            | 270,0                             | 310                              | 750            | 210,0                             |
| 620                              | 740            | 275,0                             | 360                              | 750            | 220,0                             |
| 650                              | 740            | 275,0                             | 450                              | 750            | 230,0                             |
| 660                              | 840            | 405,0                             | 370                              | 850            | 335,0                             |
| 690                              | 840            | 410,0                             | 430                              | 850            | 350,0                             |
| 720                              | 840            | 420,0                             | 480                              | 850            | 360,0                             |
| 700                              | 985            | 590,0                             | 400                              | 1 000          | 485,0                             |
| 740                              | 985            | 600,0                             | 470                              | 1 000          | 505,0                             |
| 780                              | 985            | 610,0                             | 530                              | 1 000          | 520,0                             |
| 750                              | 1 120          | 885,0                             | 430                              | 1 140          | 675,0                             |
| 760                              | 1 120          | 890,0                             | 450                              | 1 140          | 685,0                             |
| 800                              | 1 120          | 905,0                             | 520                              | 1 140          | 715,0                             |
| 790                              | 1 230          | 1 230,0                           | 470                              | 1 250          | 940,0                             |
| 800                              | 1 230          | 1 235,0                           | 490                              | 1 250          | 950,0                             |
| 850                              | 1 230          | 1 260,0                           | 570                              | 1 250          | 990,0                             |
| 1 200                            | 1 430          | 1 695,0                           | 1 400                            | 1 430          | 2 180,0                           |
| 1 210                            | 1 430          | 1 700,0                           | 1 420                            | 1 430          | 2 190,0                           |
| 1 270                            | 1 430          | 1 730,0                           | 1 470                            | 1 430          | 2 220,0                           |
| 1 280                            | 1 530          | 2 060,0                           | 1 530                            | 1 530          | 2 655,0                           |
| 1 300                            | 1 530          | 2 070,0                           | 1 540                            | 1 530          | 2 665,0                           |
| 1 330                            | 1 530          | 2 095,0                           | 1 570                            | 1 530          | 2 690,0                           |

PN 10

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Uhlový pohyb<br>Angular movement | Ohybová tuhosť<br>Angular spring rate | Treći moment<br>Frictional moments |
|---------------------------------------|---------------------------------------|----------------------------------|---------------------------------------|------------------------------------|
| DN                                    | DN                                    | ± deg (°)                        | N.m/°                                 | N.m/bar                            |
| mm                                    | inch                                  |                                  |                                       |                                    |
| 1100                                  | 44"                                   | 1,5                              | 9 460,0                               | 611,0                              |
| 1100                                  | 44"                                   | 2,0                              | 6 306,0                               | 611,0                              |
| 1100                                  | 44"                                   | 3,0                              | 4 204,0                               | 611,0                              |
| 1200                                  | 48"                                   | 1,5                              | 10 231,0                              | 724,0                              |
| 1200                                  | 48"                                   | 2,0                              | 6 821,0                               | 724,0                              |
| 1200                                  | 48"                                   | 3,0                              | 4 547,0                               | 724,0                              |
| 1300                                  | 52"                                   | 1,0                              | 12 323,0                              | 858,0                              |
| 1300                                  | 52"                                   | 1,5                              | 9 243,0                               | 858,0                              |
| 1300                                  | 52"                                   | 3,0                              | 6 162,0                               | 858,0                              |
| 1400                                  | 56"                                   | 1,0                              | 25 041,0                              | 1 237,0                            |
| 1400                                  | 56"                                   | 1,5                              | 18 781,0                              | 1 237,0                            |
| 1400                                  | 56"                                   | 3,0                              | 12 521,0                              | 1 237,0                            |
| 1500                                  | 60"                                   | 1,0                              | 30 530,0                              | 1 412,0                            |
| 1500                                  | 60"                                   | 1,5                              | 22 898,0                              | 1 412,0                            |
| 1500                                  | 60"                                   | 3,0                              | 15 265,0                              | 1 412,0                            |
| 1600                                  | 64"                                   | 1,0                              | 36 770,0                              | 1 598,0                            |
| 1600                                  | 64"                                   | 1,5                              | 22 062,0                              | 1 598,0                            |
| 1600                                  | 64"                                   | 3,0                              | 18 385,0                              | 1 598,0                            |
| 1800                                  | 72"                                   | 1,0                              | 51 518,0                              | 2 402,0                            |
| 1800                                  | 72"                                   | 1,5                              | 30 911,0                              | 2 402,0                            |
| 1800                                  | 72"                                   | 3,0                              | 25 759,0                              | 2 402,0                            |
| 2000                                  | 80"                                   | 1,0                              | 69 966,0                              | 2 945,0                            |
| 2000                                  | 80"                                   | 1,5                              | 41 980,0                              | 2 945,0                            |
| 2000                                  | 80"                                   | 3,0                              | 34 983,0                              | 2 945,0                            |
| 2200                                  | 88"                                   | 1,0                              | 92 883,0                              | 4 137,0                            |
| 2200                                  | 88"                                   | 1,5                              | 55 730,0                              | 4 137,0                            |
| 2200                                  | 88"                                   | 3,0                              | 46 441,0                              | 4 137,0                            |
| 2400                                  | 96"                                   | 1,0                              | 99 037,0                              | 4 913,0                            |
| 2400                                  | 96"                                   | 1,5                              | 59 422,0                              | 4 913,0                            |
| 2400                                  | 96"                                   | 3,0                              | 49 519,0                              | 4 913,0                            |



MWC

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 1 360                            | 1 635          | 2 550,0                           |
| 1 380                            | 1 635          | 2 565,0                           |
| 1 410                            | 1 635          | 2 590,0                           |
| 1 460                            | 1 735          | 2 835,0                           |
| 1 480                            | 1 735          | 2 855,0                           |
| 1 510                            | 1 735          | 2 880,0                           |
| 1 590                            | 1 895          | 3 720,0                           |
| 1 610                            | 1 895          | 3 740,0                           |
| 1 670                            | 1 895          | 3 795,0                           |
| 1 760                            | 1 995          | 4 345,0                           |
| 1 780                            | 1 995          | 4 370,0                           |
| 1 840                            | 1 995          | 4 435,0                           |
| 1 880                            | 2 095          | 5 040,0                           |
| 1 900                            | 2 095          | 5 070,0                           |
| 1 960                            | 2 095          | 5 140,0                           |
| 1 980                            | 2 195          | 5 745,0                           |
| 2 000                            | 2 195          | 5 790,0                           |
| 2 070                            | 2 195          | 5 865,0                           |
| 2 180                            | 2 420          | 8 585,0                           |
| 2 210                            | 2 420          | 8 630,0                           |
| 2 280                            | 2 420          | 8 730,0                           |
| 2 300                            | 2 690          | 10 480,0                          |
| 2 330                            | 2 690          | 10 535,0                          |
| 2 410                            | 2 690          | 10 650,0                          |
| 2 520                            | 2 910          | 12 255,0                          |
| 2 550                            | 2 910          | 12 320,0                          |
| 2 640                            | 2 910          | 12 475,0                          |
| 2 740                            | 3 135          | 15 915,0                          |
| 2 770                            | 3 135          | 15 995,0                          |
| 2 870                            | 3 135          | 16 185,0                          |



MFC

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 1 630                            | 1 635          | 3 345,0                           |
| 1 650                            | 1 635          | 3 360,0                           |
| 1 680                            | 1 635          | 3 390,0                           |
| 1 730                            | 1 735          | 3 740,0                           |
| 1 750                            | 1 735          | 3 760,0                           |
| 1 790                            | 1 735          | 3 795,0                           |
| 1 850                            | 1 895          | 4 770,0                           |
| 1 870                            | 1 895          | 4 790,0                           |
| 1 930                            | 1 895          | 4 855,0                           |
| 1 940                            | 1 995          | 5 455,0                           |
| 1 960                            | 1 995          | 5 480,0                           |
| 2 020                            | 1 995          | 5 550,0                           |
| 2 070                            | 2 095          | 6 385,0                           |
| 2 090                            | 2 095          | 6 415,0                           |
| 2 150                            | 2 095          | 6 490,0                           |
| 2 190                            | 2 195          | 7 295,0                           |
| 2 220                            | 2 195          | 7 350,0                           |
| 2 280                            | 2 195          | 7 420,0                           |
| 2 490                            | 2 420          | 10 495,0                          |
| 2 520                            | 2 420          | 10 545,0                          |
| 2 590                            | 2 420          | 10 655,0                          |
| 2 760                            | 2 690          | 13 135,0                          |
| 2 790                            | 2 690          | 13 195,0                          |
| 2 870                            | 2 690          | 13 325,0                          |
| 1 260                            | 2 910          | 12 750,0                          |
| 1 290                            | 2 910          | 12 820,0                          |
| 1 380                            | 2 910          | 12 985,0                          |
| 1 350                            | 3 135          | 16 190,0                          |
| 1 380                            | 3 135          | 16 275,0                          |
| 1 480                            | 3 135          | 16 485,0                          |

PN 16

| Menovitá svetlost'<br>Nominal diameter | Menovitá svetlost'<br>Nominal diameter | Uhlový pohyb<br>Angular movement | Ohybová tuhosť<br>Angular spring rate | Treť moment<br>Frictional moments | MWC                              |                |                                   | MFC                              |                |                                   |
|----------------------------------------|----------------------------------------|----------------------------------|---------------------------------------|-----------------------------------|----------------------------------|----------------|-----------------------------------|----------------------------------|----------------|-----------------------------------|
| DN                                     | DN                                     |                                  |                                       |                                   | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
| mm                                     | inch                                   | ± deg (°)                        | N.m/°                                 | N.m/bar                           | mm                               | mm             | kg                                | mm                               | mm             | kg                                |
| 50                                     | 2"                                     | 6,0                              | 1,6                                   | 0,4                               | 300                              | 245            | 15,0                              | 140                              | 250            | 13,0                              |
| 50                                     | 2"                                     | 12,0                             | 0,8                                   | 0,4                               | 330                              | 245            | 15,0                              | 220                              | 250            | 14,0                              |
| 65                                     | 2 ½"                                   | 6,0                              | 1,5                                   | 0,6                               | 360                              | 270            | 20,0                              | 170                              | 275            | 16,0                              |
| 65                                     | 2 ½"                                   | 12,0                             | 0,8                                   | 0,6                               | 390                              | 270            | 20,0                              | 240                              | 275            | 17,0                              |
| 80                                     | 3"                                     | 3,0                              | 3,2                                   | 0,8                               | 350                              | 270            | 22,0                              | 150                              | 275            | 18,0                              |
| 80                                     | 3"                                     | 6,0                              | 1,9                                   | 0,8                               | 360                              | 270            | 22,0                              | 190                              | 275            | 19,0                              |
| 80                                     | 3"                                     | 12,0                             | 1,4                                   | 0,8                               | 390                              | 270            | 22,0                              | 270                              | 275            | 21,0                              |
| 100                                    | 4"                                     | 3,0                              | 15,0                                  | 1,4                               | 390                              | 340            | 37,0                              | 170                              | 345            | 27,0                              |
| 100                                    | 4"                                     | 6,0                              | 8,4                                   | 1,4                               | 410                              | 340            | 37,0                              | 220                              | 345            | 29,0                              |
| 100                                    | 4"                                     | 12,0                             | 5,8                                   | 1,4                               | 450                              | 340            | 38,0                              | 320                              | 345            | 33,0                              |
| 125                                    | 5"                                     | 3,0                              | 53,0                                  | 2,7                               | 390                              | 365            | 42,0                              | 180                              | 370            | 33,0                              |
| 125                                    | 5"                                     | 6,0                              | 29,0                                  | 2,7                               | 410                              | 365            | 43,0                              | 230                              | 370            | 35,0                              |
| 125                                    | 5"                                     | 12,0                             | 20,0                                  | 2,7                               | 450                              | 365            | 44,0                              | 330                              | 370            | 39,0                              |
| 150                                    | 6"                                     | 3,0                              | 100,0                                 | 3,8                               | 400                              | 410            | 60,0                              | 180                              | 415            | 47,0                              |
| 150                                    | 6"                                     | 6,0                              | 56,0                                  | 3,8                               | 420                              | 410            | 60,0                              | 250                              | 415            | 51,0                              |
| 150                                    | 6"                                     | 12,0                             | 39,0                                  | 3,8                               | 460                              | 410            | 65,0                              | 360                              | 415            | 57,0                              |
| 200                                    | 8"                                     | 3,0                              | 126,0                                 | 6,4                               | 440                              | 445            | 85,0                              | 210                              | 455            | 65,0                              |
| 200                                    | 8"                                     | 6,0                              | 70,0                                  | 6,4                               | 460                              | 445            | 85,0                              | 270                              | 455            | 70,0                              |
| 200                                    | 8"                                     | 12,0                             | 48,0                                  | 6,4                               | 510                              | 445            | 90,0                              | 390                              | 455            | 75,0                              |
| 250                                    | 10"                                    | 3,0                              | 199,0                                 | 14,0                              | 470                              | 560            | 130,0                             | 250                              | 570            | 105,0                             |
| 250                                    | 10"                                    | 6,0                              | 111,0                                 | 14,0                              | 500                              | 560            | 130,0                             | 300                              | 570            | 110,0                             |
| 250                                    | 10"                                    | 12,0                             | 77,0                                  | 14,0                              | 560                              | 560            | 135,0                             | 440                              | 570            | 120,0                             |
| 300                                    | 12"                                    | 2,0                              | 280,0                                 | 20,0                              | 520                              | 610            | 175,0                             | 260                              | 620            | 135,0                             |
| 300                                    | 12"                                    | 4,0                              | 156,0                                 | 20,0                              | 540                              | 610            | 180,0                             | 290                              | 620            | 140,0                             |
| 300                                    | 12"                                    | 6,0                              | 108,0                                 | 20,0                              | 560                              | 610            | 180,0                             | 390                              | 620            | 150,0                             |
| 350                                    | 14"                                    | 2,0                              | 279,0                                 | 24,0                              | 540                              | 660            | 225,0                             | 280                              | 670            | 170,0                             |
| 350                                    | 14"                                    | 4,0                              | 155,0                                 | 24,0                              | 560                              | 660            | 225,0                             | 320                              | 670            | 175,0                             |
| 350                                    | 14"                                    | 6,0                              | 107,0                                 | 24,0                              | 590                              | 660            | 230,0                             | 410                              | 670            | 185,0                             |
| 400                                    | 16"                                    | 2,0                              | 678,0                                 | 43,0                              | 640                              | 760            | 360,0                             | 330                              | 770            | 265,0                             |
| 400                                    | 16"                                    | 4,0                              | 484,0                                 | 43,0                              | 670                              | 760            | 365,0                             | 380                              | 770            | 270,0                             |
| 400                                    | 16"                                    | 6,0                              | 308,0                                 | 43,0                              | 700                              | 760            | 370,0                             | 470                              | 770            | 290,0                             |
| 500                                    | 20"                                    | 2,0                              | 1 407,0                               | 65,0                              | 720                              | 860            | 575,0                             | 400                              | 870            | 425,0                             |
| 500                                    | 20"                                    | 4,0                              | 1 005,0                               | 65,0                              | 750                              | 860            | 580,0                             | 460                              | 870            | 440,0                             |
| 500                                    | 20"                                    | 6,0                              | 640,0                                 | 65,0                              | 780                              | 860            | 590,0                             | 510                              | 870            | 455,0                             |
| 600                                    | 24"                                    | 2,0                              | 2 133,0                               | 116,0                             | 790                              | 995            | 875,0                             | 470                              | 1 010          | 655,0                             |
| 600                                    | 24"                                    | 4,0                              | 1 523,0                               | 116,0                             | 830                              | 995            | 890,0                             | 530                              | 1 010          | 675,0                             |
| 600                                    | 24"                                    | 6,0                              | 969,0                                 | 116,0                             | 870                              | 995            | 905,0                             | 600                              | 1 010          | 775,0                             |
| 700                                    | 28"                                    | 1,5                              | 4 778,0                               | 157,0                             | 850                              | 1 140          | 1 190,0                           | 500                              | 1 160          | 875,0                             |
| 700                                    | 28"                                    | 2,0                              | 3 185,0                               | 157,0                             | 860                              | 1 140          | 1 200,0                           | 520                              | 1 160          | 885,0                             |
| 700                                    | 28"                                    | 4,0                              | 2 123,0                               | 157,0                             | 900                              | 1 140          | 1 220,0                           | 590                              | 1 160          | 920,0                             |
| 800                                    | 32"                                    | 1,5                              | 6 354,0                               | 245,0                             | 910                              | 1 275          | 1 670,0                           | 560                              | 1 300          | 1 250,0                           |
| 800                                    | 32"                                    | 2,0                              | 4 236,0                               | 245,0                             | 920                              | 1 275          | 1 680,0                           | 580                              | 1 300          | 1 265,0                           |
| 800                                    | 32"                                    | 4,0                              | 2 824,0                               | 245,0                             | 970                              | 1 275          | 1 710,0                           | 560                              | 1 300          | 1 310,0                           |
| 900                                    | 36"                                    | 1,5                              | 8 108,0                               | 411,0                             | 1 400                            | 1 465          | 2 190,0                           | 1 490                            | 1 465          | 2 730,0                           |
| 900                                    | 36"                                    | 2,0                              | 5 405,0                               | 411,0                             | 1 410                            | 1 465          | 2 205,0                           | 1 510                            | 1 465          | 2 745,0                           |
| 900                                    | 36"                                    | 4,0                              | 3 604,0                               | 411,0                             | 1 470                            | 1 465          | 2 240,0                           | 1 570                            | 1 465          | 2 790,0                           |
| 1000                                   | 40"                                    | 1,5                              | 9 753,0                               | 568,0                             | 1 530                            | 1 565          | 2 955,0                           | 1 640                            | 1 565          | 3 730,0                           |
| 1000                                   | 40"                                    | 2,0                              | 6 502,0                               | 568,0                             | 1 550                            | 1 565          | 2 970,0                           | 1 650                            | 1 565          | 3 740,0                           |
| 1000                                   | 40"                                    | 3,0                              | 4 335,0                               | 568,0                             | 1 580                            | 1 565          | 3 000,0                           | 1 690                            | 1 565          | 3 775,0                           |

**PN 16**

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Uhlový pohyb<br>Angular movement | Ohybová tuhosť<br>Angular spring rate | Treći moment<br>Frictional moments |
|---------------------------------------|---------------------------------------|----------------------------------|---------------------------------------|------------------------------------|
| DN                                    | DN                                    |                                  |                                       |                                    |
| mm                                    | inch                                  | ± deg (°)                        | N.m/°                                 | N.m/bar                            |
| 1100                                  | 44"                                   | 1,5                              | 11 849,0                              | 765,0                              |
| 1100                                  | 44"                                   | 2,0                              | 7 899,0                               | 765,0                              |
| 1100                                  | 44"                                   | 3,0                              | 5 266,0                               | 765,0                              |
| 1200                                  | 48"                                   | 1,5                              | 12 767,0                              | 904,0                              |
| 1200                                  | 48"                                   | 2,0                              | 8 511,0                               | 904,0                              |
| 1200                                  | 48"                                   | 3,0                              | 5 674,0                               | 904,0                              |
| 1300                                  | 52"                                   | 1,0                              | 12 396,0                              | 1 071,0                            |
| 1300                                  | 52"                                   | 1,5                              | 9 297,0                               | 1 071,0                            |
| 1300                                  | 52"                                   | 3,0                              | 6 198,0                               | 1 071,0                            |
| 1400                                  | 56"                                   | 1,0                              | 24 939,0                              | 1 481,0                            |
| 1400                                  | 56"                                   | 1,5                              | 18 704,0                              | 1 481,0                            |
| 1400                                  | 56"                                   | 3,0                              | 12 469,0                              | 1 481,0                            |
| 1500                                  | 60"                                   | 1,0                              | 30 413,0                              | 1 690,0                            |
| 1500                                  | 60"                                   | 1,5                              | 22 810,0                              | 1 690,0                            |
| 1500                                  | 60"                                   | 3,0                              | 15 207,0                              | 1 690,0                            |
| 1600                                  | 64"                                   | 1,0                              | 36 638,0                              | 1 913,0                            |
| 1600                                  | 64"                                   | 1,5                              | 21 983,0                              | 1 913,0                            |
| 1600                                  | 64"                                   | 3,0                              | 18 319,0                              | 1 913,0                            |
| 1800                                  | 72"                                   | 1,0                              | 51 354,0                              | 2 996,0                            |
| 1800                                  | 72"                                   | 1,5                              | 30 813,0                              | 2 996,0                            |
| 1800                                  | 72"                                   | 3,0                              | 25 677,0                              | 2 996,0                            |
| 2000                                  | 80"                                   | 1,0                              | 120 729,0                             | 3 678,0                            |
| 2000                                  | 80"                                   | 1,5                              | 72 437,0                              | 3 678,0                            |
| 2000                                  | 80"                                   | 3,0                              | 60 364,0                              | 3 678,0                            |


**MWC**

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 1 630                            | 1 700          | 3 540,0                           |
| 1 640                            | 1 700          | 3 550,0                           |
| 1 680                            | 1 700          | 3 590,0                           |
| 1 710                            | 1 800          | 4 095,0                           |
| 1 730                            | 1 800          | 4 120,0                           |
| 1 770                            | 1 800          | 4 155,0                           |
| 1 840                            | 1 910          | 4 850,0                           |
| 1 860                            | 1 910          | 4 875,0                           |
| 1 920                            | 1 910          | 4 940,0                           |
| 1 920                            | 2 020          | 5 940,0                           |
| 1 940                            | 2 020          | 5 965,0                           |
| 2 000                            | 2 020          | 6 035,0                           |
| 2 030                            | 2 120          | 6 870,0                           |
| 2 050                            | 2 120          | 6 895,0                           |
| 2 120                            | 2 120          | 6 985,0                           |
| 2 180                            | 2 220          | 7 760,0                           |
| 2 200                            | 2 220          | 7 795,0                           |
| 2 270                            | 2 220          | 7 885,0                           |
| 2 470                            | 2 575          | 11 775,0                          |
| 2 490                            | 2 575          | 11 805,0                          |
| 2 570                            | 2 575          | 11 930,0                          |
| 2 770                            | 2 780          | 15 365,0                          |
| 2 800                            | 2 780          | 15 425,0                          |
| 2 890                            | 2 780          | 15 600,0                          |


**MFC**

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 1 740                            | 1 700          | 4 535,0                           |
| 1 760                            | 1 700          | 4 555,0                           |
| 1 790                            | 1 700          | 4 590,0                           |
| 1 830                            | 1 800          | 5 330,0                           |
| 1 850                            | 1 800          | 5 350,0                           |
| 1 890                            | 1 800          | 5 395,0                           |
| 1 970                            | 1 910          | 6 150,0                           |
| 1 990                            | 1 910          | 6 170,0                           |
| 2 050                            | 1 910          | 6 245,0                           |
| 2 050                            | 2 020          | 7 445,0                           |
| 2 070                            | 2 020          | 7 470,0                           |
| 2 130                            | 2 020          | 7 550,0                           |
| 2 170                            | 2 120          | 8 595,0                           |
| 2 190                            | 2 120          | 8 620,0                           |
| 2 250                            | 2 120          | 8 705,0                           |
| 2 330                            | 2 220          | 9 940,0                           |
| 2 350                            | 2 220          | 9 980,0                           |
| 2 420                            | 2 220          | 10 080,0                          |
| 2 630                            | 2 575          | 14 080,0                          |
| 2 660                            | 2 575          | 14 130,0                          |
| 2 740                            | 2 575          | 14 275,0                          |
| 2 950                            | 2 780          | 18 465,0                          |
| 2 970                            | 2 780          | 18 515,0                          |
| 3 060                            | 2 780          | 18 710,0                          |

PN 25

|                                        |                                        |                                  |                                       |                                   | <br>MWC |                |                                   | <br>MFC |                |                                   |
|----------------------------------------|----------------------------------------|----------------------------------|---------------------------------------|-----------------------------------|-------------------------------------------------------------------------------------------|----------------|-----------------------------------|--------------------------------------------------------------------------------------------|----------------|-----------------------------------|
| Menovitá svetlost'<br>Nominal diameter | Menovitá svetlost'<br>Nominal diameter | Uhlový pohyb<br>Angular movement | Ohybová tuhosť<br>Angular spring rate | Treť moment<br>Frictional moments | Stavebná dĺžka<br>Overall length                                                          | Šírka<br>Width | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length                                                           | Šírka<br>Width | Približná hmotnosť<br>App. weight |
| DN                                     | DN                                     | ± deg (°)                        | N.m/°                                 | N.m/bar                           | mm                                                                                        | mm             | kg                                | mm                                                                                         | mm             | kg                                |
| 50                                     | 2"                                     | 6,0                              | 2,4                                   | 0,5                               | 300                                                                                       | 245            | 20,0                              | 150                                                                                        | 250            | 16,0                              |
| 50                                     | 2"                                     | 12,0                             | 1,2                                   | 0,5                               | 330                                                                                       | 245            | 20,0                              | 220                                                                                        | 250            | 17,0                              |
| 65                                     | 2 ½"                                   | 6,0                              | 2,3                                   | 0,8                               | 360                                                                                       | 270            | 27,0                              | 170                                                                                        | 275            | 23,0                              |
| 65                                     | 2 ½"                                   | 12,0                             | 1,2                                   | 0,8                               | 390                                                                                       | 270            | 27,0                              | 250                                                                                        | 275            | 24,0                              |
| 80                                     | 3"                                     | 3,0                              | 3,2                                   | 1,1                               | 350                                                                                       | 270            | 29,0                              | 150                                                                                        | 275            | 25,0                              |
| 80                                     | 3"                                     | 6,0                              | 1,9                                   | 1,1                               | 360                                                                                       | 270            | 29,0                              | 200                                                                                        | 275            | 26,0                              |
| 80                                     | 3"                                     | 12,0                             | 1,4                                   | 1,1                               | 390                                                                                       | 270            | 30,0                              | 280                                                                                        | 275            | 28,0                              |
| 100                                    | 4"                                     | 3,0                              | 20,0                                  | 1,8                               | 390                                                                                       | 350            | 53,0                              | 180                                                                                        | 360            | 41,0                              |
| 100                                    | 4"                                     | 6,0                              | 11,0                                  | 1,8                               | 410                                                                                       | 350            | 54,0                              | 230                                                                                        | 360            | 43,0                              |
| 100                                    | 4"                                     | 12,0                             | 7,8                                   | 1,8                               | 450                                                                                       | 350            | 56,0                              | 330                                                                                        | 360            | 48,0                              |
| 125                                    | 5"                                     | 3,0                              | 71,0                                  | 3,4                               | 390                                                                                       | 375            | 65,0                              | 190                                                                                        | 385            | 53,0                              |
| 125                                    | 5"                                     | 6,0                              | 40,0                                  | 3,4                               | 410                                                                                       | 375            | 65,0                              | 240                                                                                        | 385            | 56,0                              |
| 125                                    | 5"                                     | 12,0                             | 27,0                                  | 3,4                               | 450                                                                                       | 375            | 70,0                              | 350                                                                                        | 385            | 65,0                              |
| 150                                    | 6"                                     | 3,0                              | 135,0                                 | 5,8                               | 420                                                                                       | 420            | 85,0                              | 190                                                                                        | 430            | 65,0                              |
| 150                                    | 6"                                     | 6,0                              | 75,0                                  | 5,8                               | 440                                                                                       | 420            | 90,0                              | 260                                                                                        | 430            | 75,0                              |
| 150                                    | 6"                                     | 12,0                             | 52,0                                  | 5,8                               | 480                                                                                       | 420            | 90,0                              | 380                                                                                        | 430            | 80,0                              |
| 200                                    | 8"                                     | 3,0                              | 169,0                                 | 9,6                               | 460                                                                                       | 455            | 130,0                             | 220                                                                                        | 465            | 100,0                             |
| 200                                    | 8"                                     | 6,0                              | 94,0                                  | 9,6                               | 480                                                                                       | 455            | 135,0                             | 280                                                                                        | 465            | 105,0                             |
| 200                                    | 8"                                     | 12,0                             | 65,0                                  | 9,6                               | 530                                                                                       | 455            | 140,0                             | 410                                                                                        | 465            | 115,0                             |
| 250                                    | 10"                                    | 3,0                              | 268,0                                 | 17,0                              | 490                                                                                       | 585            | 200,0                             | 260                                                                                        | 600            | 150,0                             |
| 250                                    | 10"                                    | 6,0                              | 149,0                                 | 17,0                              | 520                                                                                       | 585            | 205,0                             | 310                                                                                        | 600            | 155,0                             |
| 250                                    | 10"                                    | 12,0                             | 103,0                                 | 17,0                              | 580                                                                                       | 585            | 210,0                             | 460                                                                                        | 600            | 180,0                             |
| 300                                    | 12"                                    | 2,0                              | 375,0                                 | 24,0                              | 540                                                                                       | 635            | 255,0                             | 270                                                                                        | 650            | 185,0                             |
| 300                                    | 12"                                    | 4,0                              | 209,0                                 | 24,0                              | 560                                                                                       | 635            | 260,0                             | 310                                                                                        | 650            | 195,0                             |
| 300                                    | 12"                                    | 6,0                              | 144,0                                 | 24,0                              | 580                                                                                       | 635            | 265,0                             | 410                                                                                        | 650            | 210,0                             |
| 350                                    | 14"                                    | 2,0                              | 374,0                                 | 33,0                              | 580                                                                                       | 685            | 360,0                             | 300                                                                                        | 700            | 255,0                             |
| 350                                    | 14"                                    | 4,0                              | 208,0                                 | 33,0                              | 600                                                                                       | 685            | 365,0                             | 340                                                                                        | 700            | 260,0                             |
| 350                                    | 14"                                    | 6,0                              | 144,0                                 | 33,0                              | 630                                                                                       | 685            | 370,0                             | 440                                                                                        | 700            | 280,0                             |
| 400                                    | 16"                                    | 2,0                              | 908,0                                 | 43,0                              | 680                                                                                       | 775            | 535,0                             | 350                                                                                        | 790            | 365,0                             |
| 400                                    | 16"                                    | 4,0                              | 649,0                                 | 43,0                              | 710                                                                                       | 775            | 540,0                             | 400                                                                                        | 790            | 375,0                             |
| 400                                    | 16"                                    | 6,0                              | 413,0                                 | 43,0                              | 740                                                                                       | 775            | 550,0                             | 490                                                                                        | 790            | 400,0                             |
| 500                                    | 20"                                    | 2,0                              | 1 787,0                               | 82,0                              | 760                                                                                       | 875            | 790,0                             | 420                                                                                        | 890            | 540,0                             |
| 500                                    | 20"                                    | 4,0                              | 1 276,0                               | 82,0                              | 790                                                                                       | 875            | 795,0                             | 470                                                                                        | 890            | 555,0                             |
| 500                                    | 20"                                    | 6,0                              | 812,0                                 | 82,0                              | 820                                                                                       | 875            | 810,0                             | 530                                                                                        | 890            | 575,0                             |
| 600                                    | 24"                                    | 2,0                              | 2 708,0                               | 139,0                             | 830                                                                                       | 1 020          | 1 185,0                           | 480                                                                                        | 1 040          | 815,0                             |
| 600                                    | 24"                                    | 4,0                              | 1 934,0                               | 139,0                             | 870                                                                                       | 1 020          | 1 200,0                           | 540                                                                                        | 1 040          | 845,0                             |
| 600                                    | 24"                                    | 6,0                              | 1 231,0                               | 139,0                             | 910                                                                                       | 1 020          | 1 220,0                           | 610                                                                                        | 1 040          | 875,0                             |
| 700                                    | 28"                                    | 1,5                              | 6 840,0                               | 221,0                             | 890                                                                                       | 1 150          | 1 600,0                           | 510                                                                                        | 1 170          | 1 085,0                           |
| 700                                    | 28"                                    | 2,0                              | 4 560,0                               | 221,0                             | 900                                                                                       | 1 150          | 1 610,0                           | 530                                                                                        | 1 170          | 1 100,0                           |
| 700                                    | 28"                                    | 4,0                              | 3 040,0                               | 221,0                             | 940                                                                                       | 1 150          | 1 635,0                           | 610                                                                                        | 1 170          | 1 150,0                           |
| 800                                    | 32"                                    | 1,5                              | 9 095,0                               | 327,0                             | 1 000                                                                                     | 1 285          | 2 330,0                           | 620                                                                                        | 1 310          | 1 620,0                           |
| 800                                    | 32"                                    | 2,0                              | 6 063,0                               | 327,0                             | 1 010                                                                                     | 1 285          | 2 345,0                           | 640                                                                                        | 1 310          | 1 640,0                           |
| 800                                    | 32"                                    | 4,0                              | 4 042,0                               | 327,0                             | 1 060                                                                                     | 1 285          | 2 380,0                           | 720                                                                                        | 1 310          | 1 700,0                           |
| 900                                    | 36"                                    | 1,5                              | 11 547,0                              | 461,0                             | 1 710                                                                                     | 1 505          | 2 990,0                           | 1 570                                                                                      | 1 505          | 3 605,0                           |
| 900                                    | 36"                                    | 2,0                              | 7 698,0                               | 461,0                             | 1 730                                                                                     | 1 505          | 3 010,0                           | 1 590                                                                                      | 1 505          | 3 625,0                           |
| 900                                    | 36"                                    | 4,0                              | 5 132,0                               | 461,0                             | 1 790                                                                                     | 1 505          | 3 055,0                           | 1 650                                                                                      | 1 505          | 3 680,0                           |
| 1000                                   | 40"                                    | 1,5                              | 13 658,0                              | 632,0                             | 1 840                                                                                     | 1 615          | 3 835,0                           | 1 710                                                                                      | 1 615          | 4 695,0                           |
| 1000                                   | 40"                                    | 2,0                              | 9 105,0                               | 632,0                             | 1 860                                                                                     | 1 615          | 3 855,0                           | 1 730                                                                                      | 1 615          | 4 720,0                           |
| 1000                                   | 40"                                    | 3,0                              | 6 070,0                               | 632,0                             | 1 890                                                                                     | 1 615          | 3 890,0                           | 1 760                                                                                      | 1 615          | 4 755,0                           |

**PN 25**

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Uhlový pohyb<br>Angular movement | Ohybová tuhosť<br>Angular spring rate | Treći moment<br>Frictional moments |
|---------------------------------------|---------------------------------------|----------------------------------|---------------------------------------|------------------------------------|
| DN                                    | DN                                    |                                  |                                       |                                    |
| mm                                    | inch                                  | ± deg (°)                        | N.m/°                                 | N.m/bar                            |
| 1100                                  | 44"                                   | 1,5                              | 16 593,0                              | 918,0                              |
| 1100                                  | 44"                                   | 2,0                              | 11 062,0                              | 918,0                              |
| 1100                                  | 44"                                   | 3,0                              | 7 375,0                               | 918,0                              |
| 1200                                  | 48"                                   | 1,5                              | 17 835,0                              | 1 083,0                            |
| 1200                                  | 48"                                   | 2,0                              | 11 890,0                              | 1 083,0                            |
| 1200                                  | 48"                                   | 3,0                              | 7 927,0                               | 1 083,0                            |
| 1300                                  | 52"                                   | 1,0                              | 31 961,0                              | 1 284,0                            |
| 1300                                  | 52"                                   | 1,5                              | 23 971,0                              | 1 284,0                            |
| 1300                                  | 52"                                   | 3,0                              | 15 981,0                              | 1 284,0                            |
| 1400                                  | 56"                                   | 1,0                              | 51 468,0                              | 1 722,0                            |
| 1400                                  | 56"                                   | 1,5                              | 38 601,0                              | 1 722,0                            |
| 1400                                  | 56"                                   | 3,0                              | 25 734,0                              | 1 722,0                            |
| 1500                                  | 60"                                   | 1,0                              | 62 788,0                              | 1 966,0                            |
| 1500                                  | 60"                                   | 1,5                              | 47 091,0                              | 1 966,0                            |
| 1500                                  | 60"                                   | 3,0                              | 31 394,0                              | 1 966,0                            |
| 1600                                  | 64"                                   | 1,0                              | 75 655,0                              | 2 385,0                            |
| 1600                                  | 64"                                   | 1,5                              | 45 393,0                              | 2 385,0                            |
| 1600                                  | 64"                                   | 3,0                              | 37 828,0                              | 2 385,0                            |


**MWC**

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 1 990                            | 1 720          | 4 695,0                           |
| 2 000                            | 1 720          | 4 715,0                           |
| 2 040                            | 1 720          | 4 765,0                           |
| 2 090                            | 1 850          | 6 090,0                           |
| 2 110                            | 1 850          | 6 115,0                           |
| 2 150                            | 1 850          | 6 165,0                           |
| 2 280                            | 1 990          | 7 375,0                           |
| 2 300                            | 1 990          | 7 405,0                           |
| 2 360                            | 1 990          | 7 485,0                           |
| 2 410                            | 2 090          | 8 890,0                           |
| 2 430                            | 2 090          | 8 920,0                           |
| 2 490                            | 2 090          | 9 015,0                           |
| 2 470                            | 2 210          | 10 315,0                          |
| 2 490                            | 2 210          | 10 345,0                          |
| 2 560                            | 2 210          | 10 460,0                          |
| 2 580                            | 2 315          | 12 510,0                          |
| 2 610                            | 2 315          | 12 565,0                          |
| 2 680                            | 2 315          | 12 695,0                          |


**MFC**

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 1 840                            | 1 720          | 5 740,0                           |
| 1 860                            | 1 720          | 5 770,0                           |
| 1 890                            | 1 720          | 5 810,0                           |
| 1 940                            | 1 850          | 7 300,0                           |
| 1 960                            | 1 850          | 7 330,0                           |
| 1 990                            | 1 850          | 7 370,0                           |
| 2 110                            | 1 990          | 8 750,0                           |
| 2 130                            | 1 990          | 8 785,0                           |
| 2 190                            | 1 990          | 8 870,0                           |
| 2 230                            | 2 090          | 10 440,0                          |
| 2 250                            | 2 090          | 10 470,0                          |
| 2 310                            | 2 090          | 10 575,0                          |
| 2 290                            | 2 210          | 11 975,0                          |
| 2 310                            | 2 210          | 12 015,0                          |
| 2 380                            | 2 210          | 12 140,0                          |
| 2 430                            | 2 315          | 14 635,0                          |
| 2 460                            | 2 315          | 14 695,0                          |
| 2 530                            | 2 315          | 14 845,0                          |

PN 40

|                                        |                                        |                                  |                                       |                                   | <br><b>MWC</b> |                |                                   | <br><b>MFC</b> |                |                                   |
|----------------------------------------|----------------------------------------|----------------------------------|---------------------------------------|-----------------------------------|--------------------------------------------------------------------------------------------------|----------------|-----------------------------------|---------------------------------------------------------------------------------------------------|----------------|-----------------------------------|
| Menovitá svetlost'<br>Nominal diameter | Menovitá svetlost'<br>Nominal diameter | Uhlový pohyb<br>Angular movement | Ohybová tuhosť<br>Angular spring rate | Treť moment<br>Frictional moments | Stavebná dĺžka<br>Overall length                                                                 | Šírka<br>Width | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length                                                                  | Šírka<br>Width | Približná hmotnosť<br>App. weight |
| DN                                     | DN                                     | ± deg (°)                        | N.m/°                                 | N.m/bar                           | mm                                                                                               | mm             | kg                                | mm                                                                                                | mm             | kg                                |
| 50                                     | 2"                                     | 6,0                              | 2,4                                   | 0,5                               | 360                                                                                              | 245            | 23,0                              | 190                                                                                               | 250            | 9,0                               |
| 50                                     | 2"                                     | 12,0                             | 1,2                                   | 0,5                               | 390                                                                                              | 245            | 23,0                              | 230                                                                                               | 250            | 19,0                              |
| 65                                     | 2 1/2"                                 | 6,0                              | 3,1                                   | 0,8                               | 400                                                                                              | 270            | 29,0                              | 190                                                                                               | 275            | 25,0                              |
| 65                                     | 2 1/2"                                 | 12,0                             | 1,6                                   | 0,8                               | 430                                                                                              | 270            | 30,0                              | 250                                                                                               | 275            | 26,0                              |
| 80                                     | 3"                                     | 3,0                              | 4,3                                   | 1,1                               | 390                                                                                              | 270            | 32,0                              | 170                                                                                               | 275            | 27,0                              |
| 80                                     | 3"                                     | 6,0                              | 2,6                                   | 1,1                               | 400                                                                                              | 270            | 32,0                              | 210                                                                                               | 275            | 28,0                              |
| 80                                     | 3"                                     | 12,0                             | 1,8                                   | 1,1                               | 430                                                                                              | 270            | 33,0                              | 290                                                                                               | 275            | 30,0                              |
| 100                                    | 4"                                     | 3,0                              | 26,0                                  | 2,3                               | 430                                                                                              | 350            | 60,0                              | 200                                                                                               | 360            | 49,0                              |
| 100                                    | 4"                                     | 6,0                              | 14,0                                  | 2,3                               | 450                                                                                              | 350            | 65,0                              | 230                                                                                               | 360            | 51,0                              |
| 100                                    | 4"                                     | 12,0                             | 9,9                                   | 2,3                               | 490                                                                                              | 350            | 65,0                              | 340                                                                                               | 360            | 56,0                              |
| 125                                    | 5"                                     | 3,0                              | 90,0                                  | 4,1                               | 410                                                                                              | 375            | 80,0                              | 210                                                                                               | 385            | 60,0                              |
| 125                                    | 5"                                     | 6,0                              | 50,0                                  | 4,1                               | 430                                                                                              | 375            | 80,0                              | 250                                                                                               | 385            | 65,0                              |
| 125                                    | 5"                                     | 12,0                             | 35,0                                  | 4,1                               | 470                                                                                              | 375            | 80,0                              | 350                                                                                               | 385            | 70,0                              |
| 150                                    | 6"                                     | 3,0                              | 170,0                                 | 6,7                               | 470                                                                                              | 420            | 105,0                             | 240                                                                                               | 430            | 80,0                              |
| 150                                    | 6"                                     | 6,0                              | 95,0                                  | 6,7                               | 490                                                                                              | 420            | 105,0                             | 280                                                                                               | 430            | 85,0                              |
| 150                                    | 6"                                     | 12,0                             | 66,0                                  | 6,7                               | 530                                                                                              | 420            | 110,0                             | 390                                                                                               | 430            | 95,0                              |
| 200                                    | 8"                                     | 3,0                              | 212,0                                 | 11,0                              | 510                                                                                              | 455            | 150,0                             | 260                                                                                               | 465            | 115,0                             |
| 200                                    | 8"                                     | 6,0                              | 118,0                                 | 11,0                              | 530                                                                                              | 455            | 150,0                             | 300                                                                                               | 465            | 120,0                             |
| 200                                    | 8"                                     | 12,0                             | 82,0                                  | 11,0                              | 580                                                                                              | 455            | 160,0                             | 430                                                                                               | 465            | 135,0                             |
| 250                                    | 10"                                    | 3,0                              | 337,0                                 | 19,0                              | 570                                                                                              | 585            | 250,0                             | 330                                                                                               | 600            | 205,0                             |
| 250                                    | 10"                                    | 6,0                              | 187,0                                 | 19,0                              | 600                                                                                              | 585            | 255,0                             | 380                                                                                               | 600            | 210,0                             |
| 250                                    | 10"                                    | 12,0                             | 129,0                                 | 19,0                              | 660                                                                                              | 585            | 265,0                             | 480                                                                                               | 600            | 225,0                             |
| 300                                    | 12"                                    | 2,0                              | 544,0                                 | 27,0                              | 620                                                                                              | 635            | 345,0                             | 340                                                                                               | 650            | 265,0                             |
| 300                                    | 12"                                    | 4,0                              | 302,0                                 | 27,0                              | 640                                                                                              | 635            | 350,0                             | 380                                                                                               | 650            | 275,0                             |
| 300                                    | 12"                                    | 6,0                              | 209,0                                 | 27,0                              | 660                                                                                              | 635            | 355,0                             | 440                                                                                               | 650            | 290,0                             |
| 350                                    | 14"                                    | 2,0                              | 539,0                                 | 33,0                              | 700                                                                                              | 685            | 485,0                             | 390                                                                                               | 700            | 365,0                             |
| 350                                    | 14"                                    | 4,0                              | 300,0                                 | 33,0                              | 720                                                                                              | 685            | 495,0                             | 440                                                                                               | 700            | 375,0                             |
| 350                                    | 14"                                    | 6,0                              | 207,0                                 | 33,0                              | 750                                                                                              | 685            | 500,0                             | 480                                                                                               | 700            | 385,0                             |
| 400                                    | 16"                                    | 2,0                              | 1 129,0                               | 53,0                              | 780                                                                                              | 775            | 715,0                             | 450                                                                                               | 790            | 525,0                             |
| 400                                    | 16"                                    | 4,0                              | 807,0                                 | 53,0                              | 810                                                                                              | 775            | 720,0                             | 500                                                                                               | 790            | 540,0                             |
| 400                                    | 16"                                    | 6,0                              | 513,0                                 | 53,0                              | 840                                                                                              | 775            | 730,0                             | 550                                                                                               | 790            | 550,0                             |
| 500                                    | 20"                                    | 2,0                              | 2 288,0                               | 98,0                              | 860                                                                                              | 875            | 1 000,0                           | 520                                                                                               | 890            | 740,0                             |
| 500                                    | 20"                                    | 4,0                              | 1 634,0                               | 98,0                              | 890                                                                                              | 875            | 1 010,0                           | 570                                                                                               | 890            | 755,0                             |
| 500                                    | 20"                                    | 6,0                              | 1 040,0                               | 98,0                              | 920                                                                                              | 875            | 1 020,0                           | 630                                                                                               | 890            | 775,0                             |
| 600                                    | 24"                                    | 2,0                              | 3 445,0                               | 185,0                             | 930                                                                                              | 1 020          | 1 535,0                           | 590                                                                                               | 1 040          | 1 150,0                           |
| 600                                    | 24"                                    | 4,0                              | 2 460,0                               | 185,0                             | 970                                                                                              | 1 020          | 1 550,0                           | 650                                                                                               | 1 040          | 1 180,0                           |
| 600                                    | 24"                                    | 6,0                              | 1 566,0                               | 185,0                             | 1 010                                                                                            | 1 020          | 1 570,0                           | 720                                                                                               | 1 040          | 1 215,0                           |
| 700                                    | 28"                                    | 1,5                              | 6 061,0                               | 281,0                             | 1 000                                                                                            | 1 200          | 1 960,0                           | 640                                                                                               | 1 220          | 1 450,0                           |
| 700                                    | 28"                                    | 2,0                              | 4 041,0                               | 281,0                             | 1 010                                                                                            | 1 200          | 1 965,0                           | 650                                                                                               | 1 220          | 1 455,0                           |
| 700                                    | 28"                                    | 4,0                              | 2 694,0                               | 281,0                             | 1 060                                                                                            | 1 200          | 1 990,0                           | 730                                                                                               | 1 220          | 1 500,0                           |
| 800                                    | 32"                                    | 1,5                              | 8 074,0                               | 405,0                             | 1 850                                                                                            | 1 330          | 3 430,0                           | 890                                                                                               | 1 330          | 3 475,0                           |
| 800                                    | 32"                                    | 2,0                              | 5 383,0                               | 405,0                             | 1 870                                                                                            | 1 330          | 3 445,0                           | 900                                                                                               | 1 330          | 3 480,0                           |
| 800                                    | 32"                                    | 4,0                              | 3 589,0                               | 405,0                             | 1 920                                                                                            | 1 330          | 3 485,0                           | 960                                                                                               | 1 330          | 3 535,0                           |
| 900                                    | 36"                                    | 1,5                              | 10 282,0                              | 509,0                             | 2 050                                                                                            | 1 480          | 4 200,0                           | 1 670                                                                                             | 1 480          | 4 950,0                           |
| 900                                    | 36"                                    | 2,0                              | 6 855,0                               | 509,0                             | 2 060                                                                                            | 1 480          | 4 205,0                           | 1 680                                                                                             | 1 480          | 4 960,0                           |
| 900                                    | 36"                                    | 4,0                              | 4 570,0                               | 509,0                             | 2 130                                                                                            | 1 480          | 4 265,0                           | 1 740                                                                                             | 1 480          | 5 015,0                           |
| 1000                                   | 40"                                    | 1,5                              | 13 561,0                              | 754,0                             | 2 200                                                                                            | 1 600          | 5 500,0                           | 1 840                                                                                             | 1 600          | 6 570,0                           |
| 1000                                   | 40"                                    | 2,0                              | 9 040,0                               | 754,0                             | 2 220                                                                                            | 1 600          | 5 520,0                           | 1 850                                                                                             | 1 600          | 6 580,0                           |
| 1000                                   | 40"                                    | 3,0                              | 6 027,0                               | 754,0                             | 2 250                                                                                            | 1 600          | 5 555,0                           | 1 890                                                                                             | 1 600          | 6 630,0                           |

**PN 40**

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Uhlivý pohyb<br>Angular movement | Ohybová tuhosť<br>Angular spring rate | Treť moment<br>Frictional moments |
|---------------------------------------|---------------------------------------|----------------------------------|---------------------------------------|-----------------------------------|
| DN                                    | DN                                    | ± deg (°)                        | N.m/°                                 | N.m/bar                           |
| mm                                    | inch                                  |                                  |                                       |                                   |
| 1100                                  | 44"                                   | 1,5                              | 16 378,0                              | 1 062,0                           |
| 1100                                  | 44"                                   | 2,0                              | 10 918,0                              | 1 062,0                           |
| 1100                                  | 44"                                   | 3,0                              | 7 279,0                               | 1 062,0                           |
| 1200                                  | 48"                                   | 1,5                              | 17 728,0                              | 1 259,0                           |
| 1200                                  | 48"                                   | 2,0                              | 11 819,0                              | 1 259,0                           |
| 1200                                  | 48"                                   | 3,0                              | 7 879,0                               | 1 259,0                           |


**MWC**

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 2 410                            | 1 750          | 7 100,0                           |
| 2 430                            | 1 750          | 7 120,0                           |
| 2 460                            | 1 750          | 7 150,0                           |
| 2 610                            | 1 890          | 8 925,0                           |
| 2 630                            | 1 890          | 8 950,0                           |
| 2 670                            | 1 890          | 9 005,0                           |


**MFC**

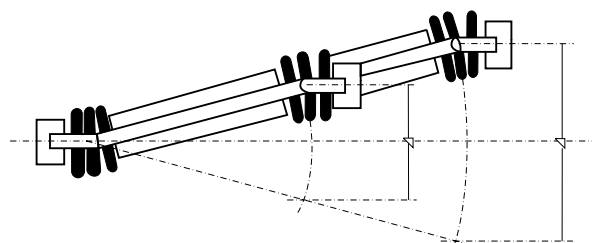
| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 1 830                            | 1 750          | 5 970,0                           |
| 1 850                            | 1 750          | 5 995,0                           |
| 1 890                            | 1 750          | 6 045,0                           |
| 2 160                            | 1 890          | 10 260,0                          |
| 2 180                            | 1 890          | 10 285,0                          |
| 2 220                            | 1 890          | 10 345,0                          |

# LATERÁLNE KOMPENZÁTORY

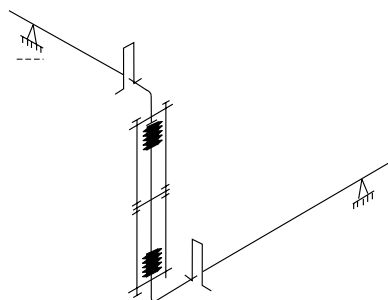
Laterálne kompenzátory majú schopnosť zachytávať priečne pohyby v mnohých smeroch.

Výhodou týchto kompenzátorov je, že pri vybavení spojovacími tyčami sami zachytávajú sily, ktoré vznikajú od vnútorného pretlaku.

Princíp funkcie laterálneho kompenzátora a vplyv vzdialenosti vlnovcov na jeho kompenzačnú schopnosť je znázornený na obrázku.



Laterálny kompenzátor s navarovacími nátrubkami.

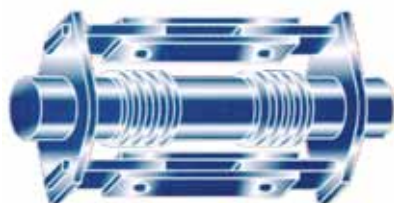


Príklad najčastejšieho použitia laterálneho kompenzátora na elimináciu výchyliek v akoľvek smere.

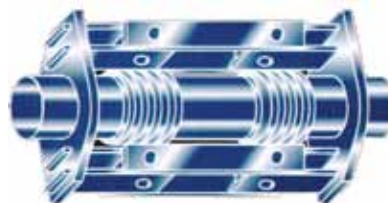
Zvláštnou úpravou systému ťahel a strmeňov je možné dosiahnuť to, aby kompenzátory vyrovnávali priečne aj uhlové výchylky v jednom alebo viacerých smeroch.

## Príklady kompenzátorov

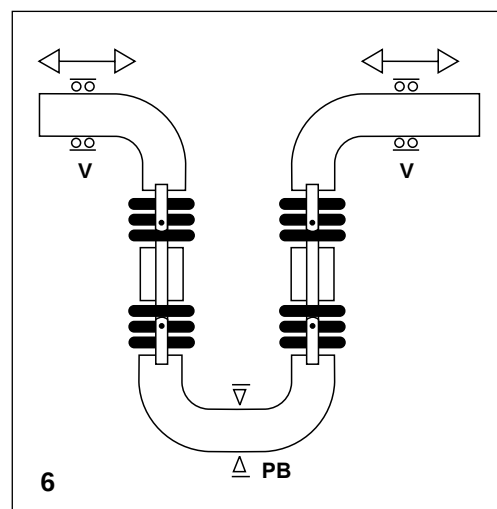
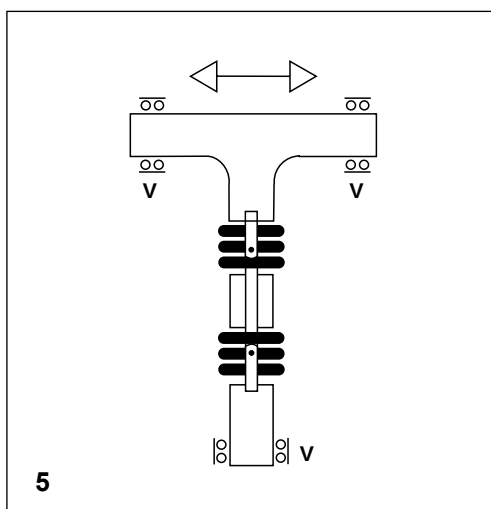
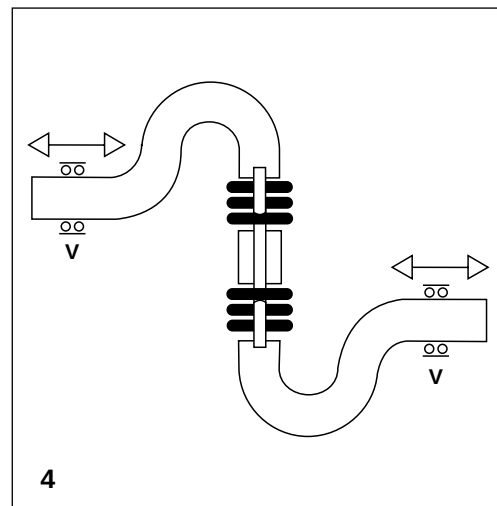
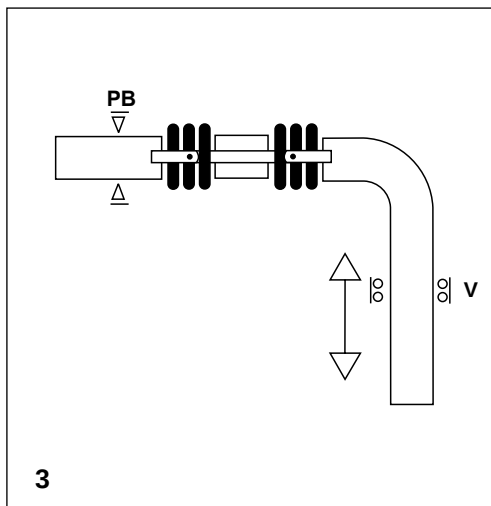
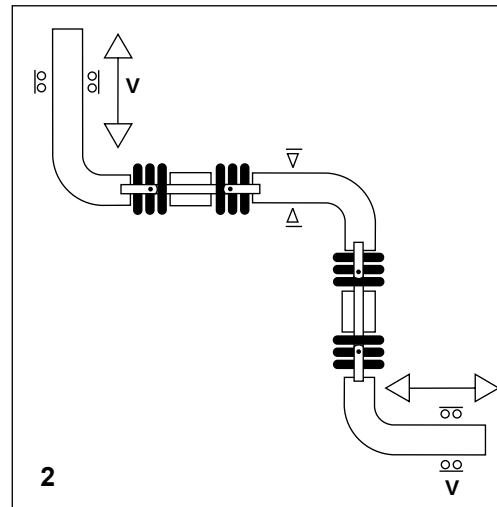
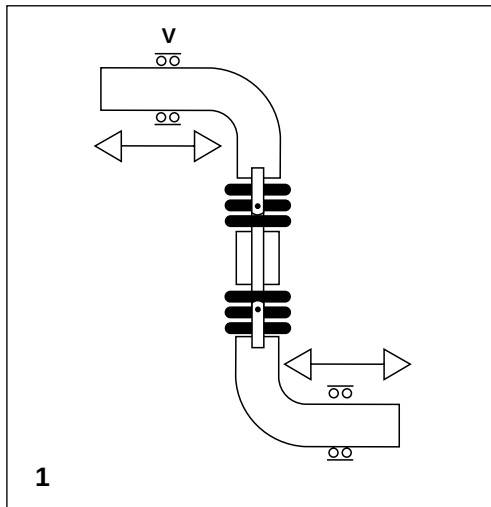
a) na využitie v rovine MWY



b) pre priestorovú výchylku MWK



## Príklady použitia laterálneho kompenzátora



ZÁKLADNÉ TECHNICKÉ ÚDAJE  
LATERÁLNYCH KOMPENZÁTOROV

**MWL - MFL**

DATA SHEETS FOR  
**L A T E R A L**  
EXPANSION JOINTS



PN 2,5



## MWL



## MFL

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Laterálny pohyb<br>Lateral movement | Laterálna tuhosť<br>Lateral spring rate | Treći moment<br>Frictional moments | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|---------------------------------------|---------------------------------------|-------------------------------------|-----------------------------------------|------------------------------------|----------------------------------|----------------|-----------------------------------|----------------------------------|----------------|-----------------------------------|
| DN                                    | DN                                    | ± mm                                | N/mm                                    | N.m/bar                            | mm                               | mm             | kg                                | mm                               | mm             | kg                                |
| 15                                    | ½"                                    | 25,0                                | 0,4                                     | 0,4                                | 370                              | 120            | 1,8                               | 190                              | 135            | 1,6                               |
| 15                                    | ½"                                    | 50,0                                | 0,3                                     | 0,4                                | 400                              | 120            | 1,9                               | 220                              | 135            | 1,7                               |
| 15                                    | ½"                                    | 75,0                                | 0,2                                     | 0,4                                | 420                              | 120            | 1,9                               | 240                              | 135            | 1,7                               |
| 15                                    | ½"                                    | 100,0                               | 0,1                                     | 0,3                                | 470                              | 120            | 2,0                               | 290                              | 135            | 1,8                               |
| 15                                    | ½"                                    | 150,0                               | 0,1                                     | 0,3                                | 620                              | 120            | 2,3                               | 440                              | 135            | 2,1                               |
| 20                                    | ¾"                                    | 25,0                                | 0,5                                     | 0,7                                | 370                              | 130            | 2,2                               | 190                              | 145            | 2,1                               |
| 20                                    | ¾"                                    | 50,0                                | 0,2                                     | 0,6                                | 430                              | 130            | 2,3                               | 250                              | 145            | 2,3                               |
| 20                                    | ¾"                                    | 75,0                                | 0,1                                     | 0,5                                | 510                              | 130            | 2,5                               | 330                              | 145            | 2,5                               |
| 20                                    | ¾"                                    | 100,0                               | 0,1                                     | 0,4                                | 560                              | 130            | 2,7                               | 380                              | 145            | 2,6                               |
| 20                                    | ¾"                                    | 150,0                               | 0,0                                     | 0,4                                | 660                              | 130            | 2,9                               | 480                              | 145            | 2,9                               |
| 25                                    | 1"                                    | 25,0                                | 0,9                                     | 1,0                                | 370                              | 140            | 2,7                               | 190                              | 155            | 2,5                               |
| 25                                    | 1"                                    | 50,0                                | 0,3                                     | 0,8                                | 460                              | 140            | 3,0                               | 280                              | 155            | 2,8                               |
| 25                                    | 1"                                    | 75,0                                | 0,2                                     | 0,6                                | 530                              | 140            | 3,2                               | 350                              | 155            | 3,0                               |
| 25                                    | 1"                                    | 100,0                               | 0,1                                     | 0,6                                | 590                              | 140            | 3,4                               | 410                              | 155            | 3,2                               |
| 25                                    | 1"                                    | 150,0                               | 0,1                                     | 0,5                                | 710                              | 140            | 3,8                               | 530                              | 155            | 3,6                               |
| 32                                    | 1 ¼"                                  | 15,0                                | 2,1                                     | 1,6                                | 350                              | 160            | 3,4                               | 170                              | 175            | 3,6                               |
| 32                                    | 1 ¼"                                  | 25,0                                | 1,0                                     | 1,4                                | 390                              | 160            | 3,6                               | 210                              | 175            | 3,7                               |
| 32                                    | 1 ¼"                                  | 50,0                                | 0,3                                     | 1,0                                | 510                              | 160            | 4,1                               | 330                              | 175            | 4,2                               |
| 32                                    | 1 ¼"                                  | 75,0                                | 0,2                                     | 1,0                                | 550                              | 160            | 4,3                               | 370                              | 175            | 4,4                               |
| 32                                    | 1 ¼"                                  | 100,0                               | 0,1                                     | 0,8                                | 660                              | 160            | 4,7                               | 480                              | 175            | 4,9                               |
| 32                                    | 1 ¼"                                  | 150,0                               | 0,1                                     | 0,6                                | 810                              | 160            | 5,4                               | 630                              | 175            | 5,5                               |
| 40                                    | 1 ½"                                  | 15,0                                | 1,9                                     | 2,6                                | 380                              | 190            | 5,4                               | 200                              | 215            | 5,0                               |
| 40                                    | 1 ½"                                  | 25,0                                | 1,4                                     | 2,5                                | 400                              | 190            | 5,5                               | 220                              | 215            | 5,1                               |
| 40                                    | 1 ½"                                  | 50,0                                | 0,4                                     | 1,9                                | 530                              | 190            | 6,3                               | 350                              | 215            | 5,9                               |
| 40                                    | 1 ½"                                  | 75,0                                | 0,2                                     | 1,6                                | 620                              | 190            | 6,8                               | 440                              | 215            | 6,4                               |
| 40                                    | 1 ½"                                  | 100,0                               | 0,1                                     | 1,4                                | 700                              | 190            | 7,3                               | 520                              | 215            | 6,9                               |
| 40                                    | 1 ½"                                  | 150,0                               | 0,1                                     | 1,2                                | 820                              | 190            | 8,0                               | 640                              | 215            | 7,6                               |
| 50                                    | 2"                                    | 15,0                                | 5,3                                     | 4,1                                | 400                              | 200            | 6,3                               | 220                              | 225            | 5,7                               |
| 50                                    | 2"                                    | 25,0                                | 3,1                                     | 3,7                                | 440                              | 200            | 6,6                               | 260                              | 225            | 6,0                               |
| 50                                    | 2"                                    | 50,0                                | 1,0                                     | 2,8                                | 570                              | 200            | 7,6                               | 390                              | 225            | 6,9                               |
| 50                                    | 2"                                    | 75,0                                | 0,7                                     | 2,6                                | 620                              | 200            | 7,9                               | 440                              | 225            | 7,3                               |
| 50                                    | 2"                                    | 100,0                               | 0,3                                     | 2,0                                | 820                              | 200            | 9,4                               | 640                              | 225            | 8,8                               |
| 50                                    | 2"                                    | 150,0                               | 0,2                                     | 1,6                                | 1 020                            | 200            | 11,0                              | 840                              | 225            | 10,0                              |
| 65                                    | 2 ½"                                  | 15,0                                | 4,8                                     | 5,8                                | 410                              | 220            | 8,2                               | 230                              | 245            | 7,0                               |
| 65                                    | 2 ½"                                  | 25,0                                | 2,9                                     | 5,3                                | 450                              | 220            | 8,6                               | 270                              | 245            | 7,5                               |
| 65                                    | 2 ½"                                  | 50,0                                | 0,8                                     | 3,9                                | 600                              | 220            | 10,0                              | 420                              | 245            | 9,0                               |
| 65                                    | 2 ½"                                  | 75,0                                | 0,5                                     | 3,5                                | 680                              | 220            | 11,0                              | 500                              | 245            | 9,9                               |
| 65                                    | 2 ½"                                  | 100,0                               | 0,3                                     | 2,8                                | 830                              | 220            | 13,0                              | 650                              | 245            | 11,0                              |
| 65                                    | 2 ½"                                  | 150,0                               | 0,2                                     | 2,3                                | 1 030                            | 220            | 15,0                              | 850                              | 245            | 14,0                              |
| 80                                    | 3"                                    | 15,0                                | 6,1                                     | 8,1                                | 420                              | 250            | 11,0                              | 240                              | 275            | 10,0                              |
| 80                                    | 3"                                    | 25,0                                | 3,7                                     | 7,4                                | 460                              | 250            | 11,0                              | 280                              | 275            | 11,0                              |
| 80                                    | 3"                                    | 50,0                                | 0,9                                     | 5,3                                | 640                              | 250            | 14,0                              | 460                              | 275            | 13,0                              |
| 80                                    | 3"                                    | 75,0                                | 0,7                                     | 4,9                                | 690                              | 250            | 15,0                              | 510                              | 275            | 14,0                              |
| 80                                    | 3"                                    | 100,0                               | 0,3                                     | 3,6                                | 940                              | 250            | 18,0                              | 760                              | 275            | 17,0                              |
| 80                                    | 3"                                    | 150,0                               | 0,2                                     | 3,2                                | 1 040                            | 250            | 19,0                              | 860                              | 275            | 18,0                              |
| 100                                   | 4"                                    | 15,0                                | 8,0                                     | 9,7                                | 580                              | 270            | 15,0                              | 340                              | 295            | 13,0                              |
| 100                                   | 4"                                    | 25,0                                | 5,6                                     | 9,1                                | 620                              | 270            | 16,0                              | 380                              | 295            | 14,0                              |
| 100                                   | 4"                                    | 50,0                                | 1,8                                     | 7,0                                | 800                              | 270            | 19,0                              | 560                              | 295            | 17,0                              |
| 100                                   | 4"                                    | 75,0                                | 1,5                                     | 6,5                                | 850                              | 270            | 20,0                              | 610                              | 295            | 18,0                              |
| 100                                   | 4"                                    | 100,0                               | 1,2                                     | 6,2                                | 900                              | 270            | 21,0                              | 660                              | 295            | 19,0                              |
| 100                                   | 4"                                    | 150,0                               | 0,8                                     | 5,5                                | 1 000                            | 270            | 23,0                              | 760                              | 295            | 20,0                              |

PN 2,5

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Laterálny pohyb<br>Lateral movement | Laterálna tuhosť<br>Lateral spring rate | Treći moment<br>Frictional moments |
|---------------------------------------|---------------------------------------|-------------------------------------|-----------------------------------------|------------------------------------|
| DN                                    | DN                                    | ± mm                                | N/mm                                    | N.m/bar                            |
| mm                                    | inch                                  |                                     |                                         |                                    |
| 125                                   | 5"                                    | 15,0                                | 42,8                                    | 15,0                               |
| 125                                   | 5"                                    | 25,0                                | 30,1                                    | 14,0                               |
| 125                                   | 5"                                    | 50,0                                | 6,5                                     | 10,0                               |
| 125                                   | 5"                                    | 75,0                                | 4,2                                     | 9,2                                |
| 125                                   | 5"                                    | 100,0                               | 3,5                                     | 8,7                                |
| 125                                   | 5"                                    | 150,0                               | 2,2                                     | 7,4                                |
| 150                                   | 6"                                    | 15,0                                | 40,4                                    | 24,0                               |
| 150                                   | 6"                                    | 25,0                                | 27,5                                    | 23,0                               |
| 150                                   | 6"                                    | 50,0                                | 11,7                                    | 18,0                               |
| 150                                   | 6"                                    | 75,0                                | 6,4                                     | 16,0                               |
| 150                                   | 6"                                    | 100,0                               | 5,4                                     | 15,0                               |
| 150                                   | 6"                                    | 150,0                               | 2,8                                     | 12,0                               |
| 200                                   | 8"                                    | 15,0                                | 46,9                                    | 39,0                               |
| 200                                   | 8"                                    | 25,0                                | 32,4                                    | 36,0                               |
| 200                                   | 8"                                    | 50,0                                | 12,4                                    | 29,0                               |
| 200                                   | 8"                                    | 75,0                                | 6,7                                     | 24,0                               |
| 200                                   | 8"                                    | 100,0                               | 3,8                                     | 20,0                               |
| 200                                   | 8"                                    | 150,0                               | 2,5                                     | 18,0                               |
| 250                                   | 10"                                   | 15,0                                | 59,0                                    | 57,0                               |
| 250                                   | 10"                                   | 25,0                                | 40,1                                    | 52,0                               |
| 250                                   | 10"                                   | 50,0                                | 17,5                                    | 43,0                               |
| 250                                   | 10"                                   | 75,0                                | 8,9                                     | 35,0                               |
| 250                                   | 10"                                   | 100,0                               | 5,4                                     | 30,0                               |
| 250                                   | 10"                                   | 150,0                               | 3,3                                     | 25,0                               |
| 300                                   | 12"                                   | 15,0                                | 77,0                                    | 77,0                               |
| 300                                   | 12"                                   | 25,0                                | 47,3                                    | 69,0                               |
| 300                                   | 12"                                   | 50,0                                | 21,8                                    | 57,0                               |
| 300                                   | 12"                                   | 75,0                                | 10,6                                    | 46,0                               |
| 300                                   | 12"                                   | 100,0                               | 6,6                                     | 39,0                               |
| 300                                   | 12"                                   | 150,0                               | 3,3                                     | 30,0                               |
| 350                                   | 14"                                   | 15,0                                | 59,0                                    | 87,0                               |
| 350                                   | 14"                                   | 25,0                                | 34,7                                    | 76,0                               |
| 350                                   | 14"                                   | 50,0                                | 18,8                                    | 65,0                               |
| 350                                   | 14"                                   | 75,0                                | 8,0                                     | 50,0                               |
| 350                                   | 14"                                   | 100,0                               | 5,3                                     | 43,0                               |
| 350                                   | 14"                                   | 150,0                               | 2,8                                     | 34,0                               |
| 400                                   | 16"                                   | 15,0                                | 249,0                                   | 129,0                              |
| 400                                   | 16"                                   | 25,0                                | 148,0                                   | 115,0                              |
| 400                                   | 16"                                   | 50,0                                | 81,0                                    | 99,0                               |
| 400                                   | 16"                                   | 75,0                                | 35,0                                    | 77,0                               |
| 400                                   | 16"                                   | 100,0                               | 23,1                                    | 68,0                               |
| 400                                   | 16"                                   | 150,0                               | 12,2                                    | 54,0                               |
| 500                                   | 20"                                   | 15,0                                | 319,0                                   | 185,0                              |
| 500                                   | 20"                                   | 25,0                                | 228,0                                   | 172,0                              |
| 500                                   | 20"                                   | 50,0                                | 116,0                                   | 144,0                              |
| 500                                   | 20"                                   | 75,0                                | 53,0                                    | 114,0                              |
| 500                                   | 20"                                   | 100,0                               | 32,7                                    | 97,0                               |
| 500                                   | 20"                                   | 150,0                               | 16,0                                    | 75,0                               |
| 600                                   | 24"                                   | 15,0                                | 485,0                                   | 308,0                              |
| 600                                   | 24"                                   | 25,0                                | 250,0                                   | 264,0                              |
| 600                                   | 24"                                   | 50,0                                | 115,0                                   | 214,0                              |
| 600                                   | 24"                                   | 75,0                                | 59,0                                    | 174,0                              |
| 600                                   | 24"                                   | 100,0                               | 36,2                                    | 146,0                              |
| 600                                   | 24"                                   | 150,0                               | 19,4                                    | 116,0                              |



## MWL

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 580                              | 300            | 20,0                              |
| 620                              | 300            | 21,0                              |
| 800                              | 300            | 24,0                              |
| 900                              | 300            | 27,0                              |
| 950                              | 300            | 28,0                              |
| 1 100                            | 300            | 31,0                              |
| 620                              | 345            | 26,0                              |
| 670                              | 345            | 28,0                              |
| 820                              | 345            | 33,0                              |
| 970                              | 345            | 37,0                              |
| 1 020                            | 345            | 39,0                              |
| 1 270                            | 345            | 47,0                              |
| 650                              | 400            | 38,0                              |
| 700                              | 400            | 40,0                              |
| 880                              | 400            | 47,0                              |
| 1 050                            | 400            | 54,0                              |
| 1 250                            | 400            | 60,0                              |
| 1 450                            | 400            | 70,0                              |
| 680                              | 455            | 48,0                              |
| 740                              | 455            | 51,0                              |
| 910                              | 455            | 59,0                              |
| 1 110                            | 455            | 70,0                              |
| 1 310                            | 455            | 80,0                              |
| 1 560                            | 455            | 90,0                              |
| 700                              | 520            | 65,0                              |
| 780                              | 520            | 70,0                              |
| 950                              | 520            | 80,0                              |
| 1 180                            | 520            | 95,0                              |
| 1 380                            | 520            | 110,0                             |
| 1 780                            | 520            | 135,0                             |
| 750                              | 570            | 75,0                              |
| 850                              | 570            | 85,0                              |
| 1 000                            | 570            | 95,0                              |
| 1 300                            | 570            | 115,0                             |
| 1 500                            | 570            | 130,0                             |
| 1 900                            | 570            | 160,0                             |
| 820                              | 640            | 115,0                             |
| 920                              | 640            | 120,0                             |
| 1 070                            | 640            | 135,0                             |
| 1 370                            | 640            | 160,0                             |
| 1 570                            | 640            | 175,0                             |
| 1 970                            | 640            | 210,0                             |
| 880                              | 745            | 160,0                             |
| 950                              | 745            | 165,0                             |
| 1 130                            | 745            | 185,0                             |
| 1 430                            | 745            | 215,0                             |
| 1 680                            | 745            | 240,0                             |
| 2 180                            | 745            | 295,0                             |
| 880                              | 875            | 195,0                             |
| 1 030                            | 875            | 215,0                             |
| 1 280                            | 875            | 245,0                             |
| 1 580                            | 875            | 285,0                             |
| 1 880                            | 875            | 325,0                             |
| 2 380                            | 875            | 390,0                             |



## MFL

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 340                              | 325            | 18,0                              |
| 380                              | 325            | 19,0                              |
| 560                              | 325            | 22,0                              |
| 660                              | 325            | 24,0                              |
| 710                              | 325            | 25,0                              |
| 860                              | 325            | 29,0                              |
| 380                              | 375            | 23,0                              |
| 430                              | 375            | 24,0                              |
| 580                              | 375            | 29,0                              |
| 730                              | 375            | 34,0                              |
| 780                              | 375            | 35,0                              |
| 1 030                            | 375            | 43,0                              |
| 410                              | 430            | 31,0                              |
| 460                              | 430            | 33,0                              |
| 640                              | 430            | 40,0                              |
| 810                              | 430            | 47,0                              |
| 1 010                            | 430            | 55,0                              |
| 1 210                            | 430            | 65,0                              |
| 440                              | 485            | 41,0                              |
| 500                              | 485            | 44,0                              |
| 670                              | 485            | 52,0                              |
| 870                              | 485            | 60,0                              |
| 1 070                            | 485            | 70,0                              |
| 1 320                            | 485            | 85,0                              |
| 460                              | 550            | 53,0                              |
| 540                              | 550            | 58,0                              |
| 710                              | 550            | 70,0                              |
| 940                              | 550            | 85,0                              |
| 1 140                            | 550            | 100,0                             |
| 1 540                            | 550            | 125,0                             |
| 510                              | 600            | 70,0                              |
| 610                              | 600            | 75,0                              |
| 760                              | 600            | 85,0                              |
| 1 060                            | 600            | 110,0                             |
| 1 260                            | 600            | 125,0                             |
| 1 660                            | 600            | 155,0                             |
| 540                              | 680            | 95,0                              |
| 640                              | 680            | 105,0                             |
| 790                              | 680            | 120,0                             |
| 1 090                            | 680            | 145,0                             |
| 1 290                            | 680            | 160,0                             |
| 1 690                            | 680            | 195,0                             |
| 600                              | 785            | 130,0                             |
| 670                              | 785            | 140,0                             |
| 850                              | 785            | 155,0                             |
| 1 150                            | 785            | 190,0                             |
| 1 400                            | 785            | 215,0                             |
| 1 900                            | 785            | 270,0                             |
| 600                              | 925            | 165,0                             |
| 750                              | 925            | 180,0                             |
| 1 000                            | 925            | 215,0                             |
| 1 300                            | 925            | 255,0                             |
| 1 600                            | 925            | 290,0                             |
| 2 100                            | 925            | 355,0                             |

PN 2,5

| Menovitá svetlost'<br>Nominal diameter | Menovitá svetlost'<br>Nominal diameter | Laterálny pohyb<br>Lateral movement | Laterálna tuhosť<br>Lateral spring rate | Treći moment<br>Frictional moments | MWL                              |                |                                   | MFL                              |                |                                   |
|----------------------------------------|----------------------------------------|-------------------------------------|-----------------------------------------|------------------------------------|----------------------------------|----------------|-----------------------------------|----------------------------------|----------------|-----------------------------------|
| DN                                     | DN                                     |                                     |                                         |                                    | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
| mm                                     | inch                                   | ± mm                                | N/mm                                    | N.m/bar                            | mm                               | mm             | kg                                | mm                               | mm             | kg                                |
| 700                                    | 28"                                    | 15,0                                | 432,0                                   | 402,0                              | 910                              | 980            | 235,0                             | 630                              | 1 030          | 180,0                             |
| 700                                    | 28"                                    | 25,0                                | 205,0                                   | 337,0                              | 1 090                            | 980            | 265,0                             | 810                              | 1 030          | 210,0                             |
| 700                                    | 28"                                    | 50,0                                | 89,0                                    | 265,0                              | 1 390                            | 980            | 305,0                             | 1 110                            | 1 030          | 255,0                             |
| 700                                    | 28"                                    | 75,0                                | 41,5                                    | 207,0                              | 1 790                            | 980            | 365,0                             | 1 510                            | 1 030          | 315,0                             |
| 700                                    | 28"                                    | 100,0                               | 27,2                                    | 177,0                              | 2 090                            | 980            | 410,0                             | 1 810                            | 1 030          | 355,0                             |
| 700                                    | 28"                                    | 150,0                               | 14,2                                    | 138,0                              | 2 690                            | 980            | 500,0                             | 2 410                            | 1 030          | 445,0                             |
| 800                                    | 32"                                    | 15,0                                | 498,0                                   | 558,0                              | 940                              | 1 110          | 285,0                             | 660                              | 1 165          | 225,0                             |
| 800                                    | 32"                                    | 25,0                                | 198,0                                   | 445,0                              | 1 190                            | 1 110          | 330,0                             | 910                              | 1 165          | 265,0                             |
| 800                                    | 32"                                    | 50,0                                | 95,0                                    | 358,0                              | 1 490                            | 1 110          | 380,0                             | 1 210                            | 1 165          | 320,0                             |
| 800                                    | 32"                                    | 75,0                                | 41,3                                    | 270,0                              | 1 990                            | 1 110          | 465,0                             | 1 710                            | 1 165          | 405,0                             |
| 800                                    | 32"                                    | 100,0                               | 28,4                                    | 235,0                              | 2 290                            | 1 110          | 520,0                             | 2 010                            | 1 165          | 455,0                             |
| 800                                    | 32"                                    | 150,0                               | 13,5                                    | 175,0                              | 3 090                            | 1 110          | 655,0                             | 2 810                            | 1 165          | 590,0                             |
| 900                                    | 36"                                    | 15,0                                | 511,0                                   | 724,0                              | 1 000                            | 1 265          | 400,0                             | 720                              | 1 285          | 270,0                             |
| 900                                    | 36"                                    | 25,0                                | 192,0                                   | 564,0                              | 1 300                            | 1 265          | 460,0                             | 1 020                            | 1 285          | 330,0                             |
| 900                                    | 36"                                    | 50,0                                | 100,0                                   | 462,0                              | 1 600                            | 1 265          | 515,0                             | 1 320                            | 1 285          | 390,0                             |
| 900                                    | 36"                                    | 75,0                                | 40,8                                    | 339,0                              | 2 200                            | 1 265          | 630,0                             | 1 920                            | 1 285          | 505,0                             |
| 900                                    | 36"                                    | 100,0                               | 29,3                                    | 300,0                              | 2 500                            | 1 265          | 690,0                             | 2 220                            | 1 285          | 565,0                             |
| 900                                    | 36"                                    | 150,0                               | 13,8                                    | 222,0                              | 3 400                            | 1 265          | 865,0                             | 3 120                            | 1 285          | 735,0                             |
| 1000                                   | 40"                                    | 15,0                                | 923,0                                   | 945,0                              | 1 280                            | 1 285          | 405,0                             | 1 200                            | 1 405          | 460,0                             |
| 1000                                   | 40"                                    | 25,0                                | 335,0                                   | 717,0                              | 1 630                            | 1 285          | 480,0                             | 1 550                            | 1 405          | 535,0                             |
| 1000                                   | 40"                                    | 50,0                                | 186,0                                   | 594,0                              | 1 930                            | 1 285          | 545,0                             | 1 850                            | 1 405          | 600,0                             |
| 1000                                   | 40"                                    | 75,0                                | 73,0                                    | 425,0                              | 2 630                            | 1 285          | 695,0                             | 2 550                            | 1 405          | 750,0                             |
| 1000                                   | 40"                                    | 100,0                               | 54,0                                    | 378,0                              | 2 930                            | 1 285          | 760,0                             | 2 850                            | 1 405          | 815,0                             |
| 1000                                   | 40"                                    | 150,0                               | 27,1                                    | 285,0                              | 3 830                            | 1 285          | 955,0                             | 3 750                            | 1 405          | 1 010,0                           |
| 1100                                   | 44"                                    | 15,0                                | 1 005,0                                 | 1 196,0                            | 1 310                            | 1 500          | 550,0                             | 1 230                            | 1 525          | 525,0                             |
| 1100                                   | 44"                                    | 25,0                                | 365,0                                   | 905,0                              | 1 680                            | 1 500          | 640,0                             | 1 600                            | 1 525          | 615,0                             |
| 1100                                   | 44"                                    | 50,0                                | 192,0                                   | 736,0                              | 2 030                            | 1 500          | 725,0                             | 1 950                            | 1 525          | 700,0                             |
| 1100                                   | 44"                                    | 75,0                                | 80,0                                    | 535,0                              | 2 730                            | 1 500          | 890,0                             | 2 650                            | 1 525          | 865,0                             |
| 1100                                   | 44"                                    | 100,0                               | 55,0                                    | 463,0                              | 3 130                            | 1 500          | 990,0                             | 3 050                            | 1 525          | 960,0                             |
| 1100                                   | 44"                                    | 150,0                               | 30,9                                    | 365,0                              | 3 930                            | 1 500          | 1 180,0                           | 3 850                            | 1 525          | 1 155,0                           |
| 1200                                   | 48"                                    | 15,0                                | 1 011,0                                 | 1 460,0                            | 1 350                            | 1 615          | 745,0                             | 1 260                            | 1 650          | 640,0                             |
| 1200                                   | 48"                                    | 25,0                                | 354,0                                   | 1 097,0                            | 1 750                            | 1 615          | 875,0                             | 1 660                            | 1 650          | 770,0                             |
| 1200                                   | 48"                                    | 50,0                                | 178,0                                   | 878,0                              | 2 150                            | 1 615          | 1 005,0                           | 2 060                            | 1 650          | 900,0                             |
| 1200                                   | 48"                                    | 75,0                                | 65,0                                    | 606,0                              | 3 050                            | 1 615          | 1 295,0                           | 2 960                            | 1 650          | 1 190,0                           |
| 1200                                   | 48"                                    | 100,0                               | 55,0                                    | 567,0                              | 3 250                            | 1 615          | 1 360,0                           | 3 160                            | 1 650          | 1 255,0                           |
| 1200                                   | 48"                                    | 150,0                               | 33,3                                    | 463,0                              | 3 950                            | 1 615          | 1 585,0                           | 3 860                            | 1 650          | 1 480,0                           |
| 1300                                   | 52"                                    | 15,0                                | 776,0                                   | 1 756,0                            | 1 440                            | 1 730          | 850,0                             | 1 360                            | 1 770          | 765,0                             |
| 1300                                   | 52"                                    | 25,0                                | 283,0                                   | 1 338,0                            | 1 840                            | 1 730          | 990,0                             | 1 760                            | 1 770          | 905,0                             |
| 1300                                   | 52"                                    | 50,0                                | 145,0                                   | 1 081,0                            | 2 240                            | 1 730          | 1 130,0                           | 2 160                            | 1 770          | 1 045,0                           |
| 1300                                   | 52"                                    | 75,0                                | 54,0                                    | 754,0                              | 3 140                            | 1 730          | 1 445,0                           | 3 060                            | 1 770          | 1 360,0                           |
| 1300                                   | 52"                                    | 100,0                               | 45,5                                    | 707,0                              | 3 340                            | 1 730          | 1 515,0                           | 3 260                            | 1 770          | 1 430,0                           |
| 1300                                   | 52"                                    | 150,0                               | 27,8                                    | 579,0                              | 4 040                            | 1 730          | 1 765,0                           | 3 960                            | 1 770          | 1 675,0                           |
| 1400                                   | 56"                                    | 15,0                                | 821,0                                   | 1 470,0                            | 1 490                            | 1 770          | 1 195,0                           | 1 410                            | 1 785          | 1 190,0                           |
| 1400                                   | 56"                                    | 25,0                                | 318,0                                   | 1 116,0                            | 1 890                            | 1 770          | 1 345,0                           | 1 810                            | 1 785          | 1 340,0                           |
| 1400                                   | 56"                                    | 50,0                                | 156,0                                   | 878,0                              | 2 340                            | 1 770          | 1 515,0                           | 2 260                            | 1 785          | 1 510,0                           |
| 1400                                   | 56"                                    | 75,0                                | 61,0                                    | 615,0                              | 3 240                            | 1 770          | 1 855,0                           | 3 160                            | 1 785          | 1 850,0                           |
| 1400                                   | 56"                                    | 100,0                               | 39,1                                    | 513,0                              | 3 840                            | 1 770          | 2 080,0                           | 3 760                            | 1 785          | 2 075,0                           |
| 1400                                   | 56"                                    | 150,0                               | 28,7                                    | 450,0                              | 4 340                            | 1 770          | 2 270,0                           | 4 260                            | 1 785          | 2 265,0                           |
| 1500                                   | 60"                                    | 15,0                                | 866,0                                   | 1 752,0                            | 1 580                            | 1 885          | 1 345,0                           | 1 510                            | 1 920          | 1 420,0                           |
| 1500                                   | 60"                                    | 25,0                                | 354,0                                   | 1 346,0                            | 1 980                            | 1 885          | 1 510,0                           | 1 910                            | 1 920          | 1 580,0                           |
| 1500                                   | 60"                                    | 50,0                                | 168,0                                   | 1 043,0                            | 2 480                            | 1 885          | 1 715,0                           | 2 410                            | 1 920          | 1 785,0                           |
| 1500                                   | 60"                                    | 75,0                                | 63,0                                    | 720,0                              | 3 480                            | 1 885          | 2 120,0                           | 3 410                            | 1 920          | 2 190,0                           |
| 1500                                   | 60"                                    | 100,0                               | 41,9                                    | 607,0                              | 4 080                            | 1 885          | 2 365,0                           | 4 010                            | 1 920          | 2 435,0                           |
| 1500                                   | 60"                                    | 150,0                               | 29,7                                    | 525,0                              | 4 680                            | 1 885          | 2 610,0                           | 4 610                            | 1 920          | 2 680,0                           |

PN 2,5

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Laterálny pohyb<br>Lateral movement | Laterálna tuhosť<br>Lateral spring rate | Treći moment<br>Frictional moments |
|---------------------------------------|---------------------------------------|-------------------------------------|-----------------------------------------|------------------------------------|
| DN                                    | DN                                    | ± mm                                | N/mm                                    | N.m/bar                            |
| mm                                    | inch                                  |                                     |                                         |                                    |
| 1600                                  | 64"                                   | 15,0                                | 911,0                                   | 2 058,0                            |
| 1600                                  | 64"                                   | 50,0                                | 160,0                                   | 1 174,0                            |
| 1600                                  | 64"                                   | 75,0                                | 66,0                                    | 833,0                              |
| 1600                                  | 64"                                   | 100,0                               | 44,7                                    | 709,0                              |
| 1600                                  | 64"                                   | 150,0                               | 30,7                                    | 605,0                              |
| 1800                                  | 72"                                   | 15,0                                | 1 128,0                                 | 2 668,0                            |
| 1800                                  | 72"                                   | 25,0                                | 504,0                                   | 2 095,0                            |
| 1800                                  | 72"                                   | 50,0                                | 201,0                                   | 1 523,0                            |
| 1800                                  | 72"                                   | 75,0                                | 81,0                                    | 1 065,0                            |
| 1800                                  | 72"                                   | 100,0                               | 59,0                                    | 937,0                              |
| 1800                                  | 72"                                   | 150,0                               | 35,9                                    | 756,0                              |
| 2000                                  | 80"                                   | 15,0                                | 1 358,0                                 | 3 368,0                            |
| 2000                                  | 80"                                   | 25,0                                | 685,0                                   | 2 741,0                            |
| 2000                                  | 80"                                   | 50,0                                | 247,0                                   | 1 923,0                            |
| 2000                                  | 80"                                   | 75,0                                | 103,0                                   | 1 363,0                            |
| 2000                                  | 80"                                   | 100,0                               | 72,0                                    | 1 176,0                            |
| 2000                                  | 80"                                   | 150,0                               | 79,0                                    | 907,0                              |
| 2200                                  | 88"                                   | 15,0                                | 2 344,0                                 | 3 789,0                            |
| 2200                                  | 88"                                   | 25,0                                | 1 534,0                                 | 3 316,0                            |
| 2200                                  | 88"                                   | 50,0                                | 721,0                                   | 2 553,0                            |
| 2200                                  | 88"                                   | 75,0                                | 254,0                                   | 1 703,0                            |
| 2200                                  | 88"                                   | 100,0                               | 180,0                                   | 1 476,0                            |
| 2200                                  | 88"                                   | 150,0                               | 80,0                                    | 1 039,0                            |
| 2400                                  | 96"                                   | 15,0                                | 2 279,0                                 | 3 868,0                            |
| 2400                                  | 96"                                   | 25,0                                | 1 412,0                                 | 3 307,0                            |
| 2400                                  | 96"                                   | 50,0                                | 694,0                                   | 2 564,0                            |
| 2400                                  | 96"                                   | 75,0                                | 227,0                                   | 1 642,0                            |
| 2400                                  | 96"                                   | 100,0                               | 174,0                                   | 1 466,0                            |
| 2400                                  | 96"                                   | 150,0                               | 72,0                                    | 997,0                              |
| 2600                                  | 104"                                  | 15,0                                | 1 326,0                                 | 4 703,0                            |
| 2600                                  | 104"                                  | 25,0                                | 780,0                                   | 3 948,0                            |
| 2600                                  | 104"                                  | 50,0                                | 398,0                                   | 3 096,0                            |
| 2600                                  | 104"                                  | 75,0                                | 241,0                                   | 2 547,0                            |
| 2600                                  | 104"                                  | 100,0                               | 100,0                                   | 1 764,0                            |
| 2600                                  | 104"                                  | 150,0                               | 39,1                                    | 1 166,0                            |
| 2800                                  | 112"                                  | 15,0                                | 1 831,0                                 | 5 604,0                            |
| 2800                                  | 112"                                  | 25,0                                | 1 031,0                                 | 4 628,0                            |
| 2800                                  | 112"                                  | 50,0                                | 499,0                                   | 3 548,0                            |
| 2800                                  | 112"                                  | 75,0                                | 314,0                                   | 2 956,0                            |
| 2800                                  | 112"                                  | 100,0                               | 136,0                                   | 2 086,0                            |
| 2800                                  | 112"                                  | 150,0                               | 51,0                                    | 1 347,0                            |
| 3000                                  | 120"                                  | 15,0                                | 1 580,0                                 | 5 693,0                            |
| 3000                                  | 120"                                  | 25,0                                | 925,0                                   | 4 744,0                            |
| 3000                                  | 120"                                  | 50,0                                | 428,0                                   | 3 558,0                            |
| 3000                                  | 120"                                  | 75,0                                | 261,0                                   | 2 919,0                            |
| 3000                                  | 120"                                  | 100,0                               | 126,0                                   | 2 148,0                            |
| 3000                                  | 120"                                  | 150,0                               | 45,0                                    | 1 355,0                            |
| 3200                                  | 128"                                  | 15,0                                | 1 435,0                                 | 6 241,0                            |
| 3200                                  | 128"                                  | 25,0                                | 668,0                                   | 4 744,0                            |
| 3200                                  | 128"                                  | 50,0                                | 443,0                                   | 4 050,0                            |
| 3200                                  | 128"                                  | 75,0                                | 279,0                                   | 3 362,0                            |
| 3200                                  | 128"                                  | 100,0                               | 146,0                                   | 2 555,0                            |
| 3200                                  | 128"                                  | 150,0                               | 62,0                                    | 1 748,0                            |



MWL

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 1 670                            | 2 000          | 1 510,0                           |
| 2 720                            | 2 000          | 1 965,0                           |
| 3 720                            | 2 000          | 2 405,0                           |
| 4 320                            | 2 000          | 2 665,0                           |
| 5 020                            | 2 000          | 2 975,0                           |
| 1 760                            | 2 215          | 1 820,0                           |
| 2 160                            | 2 215          | 2 020,0                           |
| 2 860                            | 2 215          | 2 365,0                           |
| 3 960                            | 2 215          | 2 905,0                           |
| 4 460                            | 2 215          | 3 155,0                           |
| 5 460                            | 2 215          | 3 645,0                           |
| 1 830                            | 2 430          | 2 100,0                           |
| 2 180                            | 2 430          | 2 290,0                           |
| 2 980                            | 2 430          | 2 730,0                           |
| 4 080                            | 2 430          | 3 335,0                           |
| 4 680                            | 2 430          | 3 665,0                           |
| 5 990                            | 2 430          | 4 485,0                           |
| 2 100                            | 2 645          | 2 475,0                           |
| 2 350                            | 2 645          | 2 625,0                           |
| 2 950                            | 2 645          | 2 990,0                           |
| 4 250                            | 2 645          | 3 780,0                           |
| 4 850                            | 2 645          | 4 145,0                           |
| 6 750                            | 2 645          | 5 295,0                           |
| 2 230                            | 2 815          | 2 740,0                           |
| 2 530                            | 2 815          | 2 935,0                           |
| 3 130                            | 2 815          | 3 335,0                           |
| 4 630                            | 2 815          | 4 330,0                           |
| 5 130                            | 2 815          | 4 660,0                           |
| 7 330                            | 2 815          | 6 120,0                           |
| 2 310                            | 3 030          | 2 930,0                           |
| 2 660                            | 3 030          | 3 180,0                           |
| 3 260                            | 3 030          | 3 615,0                           |
| 3 860                            | 3 030          | 4 050,0                           |
| 5 360                            | 3 030          | 5 130,0                           |
| 7 860                            | 3 030          | 6 940,0                           |
| 2 410                            | 3 245          | 3 265,0                           |
| 2 810                            | 3 245          | 3 580,0                           |
| 3 510                            | 3 245          | 4 130,0                           |
| 4 110                            | 3 245          | 4 595,0                           |
| 5 610                            | 3 245          | 5 770,0                           |
| 8 410                            | 3 245          | 7 960,0                           |
| 2 580                            | 3 430          | 3 975,0                           |
| 2 980                            | 3 430          | 4 315,0                           |
| 3 780                            | 3 430          | 4 990,0                           |
| 4 480                            | 3 430          | 5 580,0                           |
| 5 880                            | 3 430          | 6 765,0                           |
| 8 980                            | 3 430          | 9 385,0                           |
| 2 830                            | 3 645          | 4 585,0                           |
| 3 530                            | 3 645          | 5 225,0                           |
| 4 030                            | 3 645          | 5 675,0                           |
| 4 730                            | 3 645          | 6 315,0                           |
| 6 030                            | 3 645          | 7 495,0                           |
| 8 530                            | 3 645          | 9 765,0                           |



MFL

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 1 600                            | 2 040          | 1 595,0                           |
| 2 650                            | 2 040          | 2 055,0                           |
| 3 650                            | 2 040          | 2 490,0                           |
| 4 250                            | 2 040          | 2 755,0                           |
| 4 950                            | 2 040          | 3 060,0                           |
| 1 690                            | 2 265          | 2 040,0                           |
| 2 090                            | 2 265          | 2 235,0                           |
| 2 790                            | 2 265          | 2 580,0                           |
| 3 890                            | 2 265          | 3 125,0                           |
| 4 390                            | 2 265          | 3 370,0                           |
| 5 390                            | 2 265          | 3 865,0                           |
| 1 770                            | 2 485          | 2 410,0                           |
| 2 120                            | 2 485          | 2 605,0                           |
| 2 920                            | 2 485          | 3 045,0                           |
| 4 020                            | 2 485          | 3 650,0                           |
| 4 620                            | 2 485          | 3 980,0                           |
| 5 930                            | 2 485          | 4 800,0                           |
| 2 040                            | 2 720          | 3 020,0                           |
| 2 290                            | 2 720          | 3 170,0                           |
| 2 890                            | 2 720          | 3 535,0                           |
| 4 190                            | 2 720          | 4 320,0                           |
| 4 790                            | 2 720          | 4 685,0                           |
| 6 690                            | 2 720          | 5 835,0                           |
| 2 180                            | 2 880          | 3 385,0                           |
| 2 480                            | 2 880          | 3 585,0                           |
| 3 080                            | 2 880          | 3 980,0                           |
| 4 580                            | 2 880          | 4 975,0                           |
| 5 080                            | 2 880          | 5 305,0                           |
| 7 280                            | 2 880          | 6 765,0                           |
| 2 270                            | 3 100          | 3 735,0                           |
| 2 620                            | 3 100          | 3 990,0                           |
| 3 220                            | 3 100          | 4 420,0                           |
| 3 820                            | 3 100          | 4 855,0                           |
| 5 320                            | 3 100          | 5 940,0                           |
| 7 820                            | 3 100          | 7 745,0                           |
| 2 370                            | 3 345          | 4 380,0                           |
| 2 770                            | 3 345          | 4 695,0                           |
| 3 470                            | 3 345          | 5 245,0                           |
| 4 070                            | 3 345          | 5 710,0                           |
| 5 570                            | 3 345          | 6 885,0                           |
| 8 370                            | 3 345          | 9 075,0                           |
| 2 540                            | 3 525          | 4 940,0                           |
| 2 940                            | 3 525          | 5 275,0                           |
| 3 740                            | 3 525          | 5 950,0                           |
| 4 440                            | 3 525          | 6 545,0                           |
| 5 840                            | 3 525          | 7 725,0                           |
| 8 940                            | 3 525          | 10 345,0                          |
| 2 800                            | 3 745          | 5 850,0                           |
| 3 500                            | 3 745          | 6 485,0                           |
| 4 000                            | 3 745          | 6 940,0                           |
| 4 700                            | 3 745          | 7 575,0                           |
| 6 000                            | 3 745          | 8 755,0                           |
| 8 500                            | 3 745          | 11 030,0                          |

## PN 6

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Laterálny pohyb<br>Lateral movement | Laterálna tuhosť<br>Lateral spring rate | Treť moment<br>Frictional moments | MWL                              |                |                                   | MFL                              |                |                                   |
|---------------------------------------|---------------------------------------|-------------------------------------|-----------------------------------------|-----------------------------------|----------------------------------|----------------|-----------------------------------|----------------------------------|----------------|-----------------------------------|
| DN                                    | DN                                    |                                     |                                         |                                   | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
| mm                                    | inch                                  | ± mm                                | N/mm                                    | N.m/bar                           | mm                               | mm             | kg                                | mm                               | mm             | kg                                |
| 15                                    | ½"                                    | 15,0                                | 1,2                                     | 0,4                               | 360                              | 120            | 1,8                               | 180                              | 135            | 1,6                               |
| 15                                    | ½"                                    | 25,0                                | 0,8                                     | 0,4                               | 380                              | 120            | 1,9                               | 200                              | 135            | 1,7                               |
| 15                                    | ½"                                    | 50,0                                | 0,5                                     | 0,4                               | 410                              | 120            | 1,9                               | 230                              | 135            | 1,7                               |
| 15                                    | ½"                                    | 75,0                                | 0,4                                     | 0,4                               | 430                              | 120            | 2,0                               | 250                              | 135            | 1,8                               |
| 15                                    | ½"                                    | 100,0                               | 0,2                                     | 0,3                               | 480                              | 120            | 2,1                               | 300                              | 135            | 1,9                               |
| 15                                    | ½"                                    | 150,0                               | 0,1                                     | 0,2                               | 630                              | 120            | 2,4                               | 450                              | 135            | 2,2                               |
| 20                                    | ¾"                                    | 15,0                                | 1,8                                     | 0,8                               | 340                              | 130            | 2,2                               | 160                              | 145            | 2,1                               |
| 20                                    | ¾"                                    | 25,0                                | 1,0                                     | 0,7                               | 370                              | 130            | 2,3                               | 190                              | 145            | 2,2                               |
| 20                                    | ¾"                                    | 50,0                                | 0,4                                     | 0,6                               | 430                              | 130            | 2,4                               | 250                              | 145            | 2,4                               |
| 20                                    | ¾"                                    | 75,0                                | 0,2                                     | 0,5                               | 510                              | 130            | 2,6                               | 330                              | 145            | 2,6                               |
| 20                                    | ¾"                                    | 100,0                               | 0,1                                     | 0,4                               | 560                              | 130            | 2,7                               | 380                              | 145            | 2,7                               |
| 20                                    | ¾"                                    | 150,0                               | 0,1                                     | 0,4                               | 660                              | 130            | 3,0                               | 480                              | 145            | 2,9                               |
| 25                                    | 1"                                    | 15,0                                | 2,5                                     | 1,0                               | 360                              | 140            | 2,7                               | 180                              | 155            | 2,5                               |
| 25                                    | 1"                                    | 25,0                                | 1,8                                     | 0,9                               | 380                              | 140            | 2,7                               | 200                              | 155            | 2,6                               |
| 25                                    | 1"                                    | 50,0                                | 0,6                                     | 0,7                               | 470                              | 140            | 3,0                               | 290                              | 155            | 2,9                               |
| 25                                    | 1"                                    | 75,0                                | 0,3                                     | 0,6                               | 540                              | 140            | 3,3                               | 360                              | 155            | 3,1                               |
| 25                                    | 1"                                    | 100,0                               | 0,2                                     | 0,6                               | 600                              | 140            | 3,5                               | 420                              | 155            | 3,3                               |
| 25                                    | 1"                                    | 150,0                               | 0,1                                     | 0,5                               | 720                              | 140            | 3,9                               | 540                              | 155            | 3,7                               |
| 32                                    | 1 ¼"                                  | 15,0                                | 4,1                                     | 1,7                               | 350                              | 160            | 3,5                               | 170                              | 175            | 3,7                               |
| 32                                    | 1 ¼"                                  | 25,0                                | 2,0                                     | 1,5                               | 390                              | 160            | 3,7                               | 210                              | 175            | 3,8                               |
| 32                                    | 1 ¼"                                  | 50,0                                | 0,6                                     | 1,1                               | 510                              | 160            | 4,2                               | 330                              | 175            | 4,4                               |
| 32                                    | 1 ¼"                                  | 75,0                                | 0,4                                     | 1,0                               | 550                              | 160            | 4,4                               | 370                              | 175            | 4,5                               |
| 32                                    | 1 ¼"                                  | 100,0                               | 0,2                                     | 0,8                               | 660                              | 160            | 4,8                               | 480                              | 175            | 5,0                               |
| 32                                    | 1 ¼"                                  | 150,0                               | 0,1                                     | 0,7                               | 810                              | 160            | 5,5                               | 630                              | 175            | 5,6                               |
| 40                                    | 1 ½"                                  | 15,0                                | 3,7                                     | 3,2                               | 390                              | 210            | 6,6                               | 210                              | 240            | 6,3                               |
| 40                                    | 1 ½"                                  | 25,0                                | 2,7                                     | 3,0                               | 410                              | 210            | 6,7                               | 230                              | 240            | 6,4                               |
| 40                                    | 1 ½"                                  | 50,0                                | 0,7                                     | 2,3                               | 540                              | 210            | 7,7                               | 360                              | 240            | 7,4                               |
| 40                                    | 1 ½"                                  | 75,0                                | 0,4                                     | 2,0                               | 630                              | 210            | 8,3                               | 450                              | 240            | 8,0                               |
| 40                                    | 1 ½"                                  | 100,0                               | 0,3                                     | 1,8                               | 710                              | 210            | 8,9                               | 530                              | 240            | 8,6                               |
| 40                                    | 1 ½"                                  | 150,0                               | 0,2                                     | 1,5                               | 830                              | 210            | 9,8                               | 650                              | 240            | 9,5                               |
| 50                                    | 2"                                    | 15,0                                | 10,5                                    | 5,2                               | 400                              | 220            | 7,6                               | 220                              | 250            | 7,0                               |
| 50                                    | 2"                                    | 25,0                                | 6,2                                     | 4,8                               | 440                              | 220            | 7,9                               | 260                              | 250            | 7,4                               |
| 50                                    | 2"                                    | 50,0                                | 1,5                                     | 3,4                               | 620                              | 220            | 9,5                               | 440                              | 250            | 9,0                               |
| 50                                    | 2"                                    | 75,0                                | 0,9                                     | 3,0                               | 720                              | 220            | 10,0                              | 540                              | 250            | 9,8                               |
| 50                                    | 2"                                    | 100,0                               | 0,6                                     | 2,6                               | 820                              | 220            | 11,0                              | 640                              | 250            | 11,0                              |
| 50                                    | 2"                                    | 150,0                               | 0,3                                     | 2,1                               | 1 020                            | 220            | 13,0                              | 840                              | 250            | 12,0                              |
| 65                                    | 2 ½"                                  | 15,0                                | 9,4                                     | 7,3                               | 410                              | 240            | 9,6                               | 230                              | 270            | 8,5                               |
| 65                                    | 2 ½"                                  | 25,0                                | 4,1                                     | 6,3                               | 480                              | 240            | 10,0                              | 300                              | 270            | 9,4                               |
| 65                                    | 2 ½"                                  | 50,0                                | 1,4                                     | 4,8                               | 630                              | 240            | 12,0                              | 450                              | 270            | 11,0                              |
| 65                                    | 2 ½"                                  | 75,0                                | 0,7                                     | 3,9                               | 780                              | 240            | 14,0                              | 600                              | 270            | 13,0                              |
| 65                                    | 2 ½"                                  | 100,0                               | 0,4                                     | 3,3                               | 930                              | 240            | 16,0                              | 750                              | 270            | 15,0                              |
| 65                                    | 2 ½"                                  | 150,0                               | 0,2                                     | 2,7                               | 1 130                            | 240            | 18,0                              | 950                              | 270            | 17,0                              |
| 80                                    | 3"                                    | 15,0                                | 9,2                                     | 9,9                               | 440                              | 270            | 13,0                              | 260                              | 300            | 12,0                              |
| 80                                    | 3"                                    | 25,0                                | 4,5                                     | 8,6                               | 510                              | 270            | 14,0                              | 330                              | 300            | 13,0                              |
| 80                                    | 3"                                    | 50,0                                | 1,5                                     | 6,5                               | 680                              | 270            | 16,0                              | 500                              | 300            | 16,0                              |
| 80                                    | 3"                                    | 75,0                                | 0,8                                     | 5,3                               | 840                              | 270            | 19,0                              | 660                              | 300            | 18,0                              |
| 80                                    | 3"                                    | 100,0                               | 0,6                                     | 4,7                               | 940                              | 270            | 20,0                              | 760                              | 300            | 19,0                              |
| 80                                    | 3"                                    | 150,0                               | 0,3                                     | 3,8                               | 1 190                            | 270            | 24,0                              | 1 010                            | 300            | 23,0                              |
| 100                                   | 4"                                    | 15,0                                | 21,8                                    | 13,0                              | 560                              | 290            | 17,0                              | 320                              | 320            | 15,0                              |
| 100                                   | 4"                                    | 25,0                                | 12,8                                    | 12,0                              | 620                              | 290            | 18,0                              | 380                              | 320            | 16,0                              |
| 100                                   | 4"                                    | 50,0                                | 4,2                                     | 9,0                               | 810                              | 290            | 22,0                              | 570                              | 320            | 20,0                              |
| 100                                   | 4"                                    | 75,0                                | 2,8                                     | 8,0                               | 910                              | 290            | 24,0                              | 670                              | 320            | 22,0                              |
| 100                                   | 4"                                    | 100,0                               | 1,6                                     | 6,7                               | 1 090                            | 290            | 27,0                              | 850                              | 320            | 25,0                              |
| 100                                   | 4"                                    | 150,0                               | 0,9                                     | 5,4                               | 1 340                            | 290            | 32,0                              | 1 100                            | 320            | 30,0                              |

## PN 6

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Laterálny pohyb<br>Lateral movement | Laterálna tuhosť<br>Lateral spring rate | Treći moment<br>Frictional moments | MWL                              |                |                                   | MFL                              |                |                                   |
|---------------------------------------|---------------------------------------|-------------------------------------|-----------------------------------------|------------------------------------|----------------------------------|----------------|-----------------------------------|----------------------------------|----------------|-----------------------------------|
| DN                                    | DN                                    |                                     |                                         |                                    | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
| mm                                    | inch                                  | ± mm                                | N/mm                                    | N.m/bar                            | mm                               | mm             | kg                                | mm                               | mm             | kg                                |
| 125                                   | 5"                                    | 15,0                                | 79,0                                    | 19,0                               | 580                              | 320            | 23,0                              | 340                              | 350            | 21,0                              |
| 125                                   | 5"                                    | 25,0                                | 57,0                                    | 17,0                               | 620                              | 320            | 24,0                              | 380                              | 350            | 22,0                              |
| 125                                   | 5"                                    | 50,0                                | 14,7                                    | 13,0                               | 810                              | 320            | 28,0                              | 570                              | 350            | 25,0                              |
| 125                                   | 5"                                    | 75,0                                | 8,2                                     | 11,0                               | 960                              | 320            | 31,0                              | 720                              | 350            | 29,0                              |
| 125                                   | 5"                                    | 100,0                               | 5,1                                     | 9,6                                | 1 120                            | 320            | 35,0                              | 880                              | 350            | 33,0                              |
| 125                                   | 5"                                    | 150,0                               | 2,9                                     | 7,9                                | 1 360                            | 320            | 41,0                              | 1 120                            | 350            | 39,0                              |
| 150                                   | 6"                                    | 15,0                                | 110,0                                   | 30,0                               | 600                              | 365            | 33,0                              | 360                              | 405            | 26,0                              |
| 150                                   | 6"                                    | 25,0                                | 60,0                                    | 27,0                               | 680                              | 365            | 35,0                              | 440                              | 405            | 29,0                              |
| 150                                   | 6"                                    | 50,0                                | 21,8                                    | 21,0                               | 880                              | 365            | 42,0                              | 640                              | 405            | 36,0                              |
| 150                                   | 6"                                    | 75,0                                | 12,9                                    | 18,0                               | 1 030                            | 365            | 47,0                              | 790                              | 405            | 41,0                              |
| 150                                   | 6"                                    | 100,0                               | 7,6                                     | 15,0                               | 1 230                            | 365            | 54,0                              | 990                              | 405            | 47,0                              |
| 150                                   | 6"                                    | 150,0                               | 4,5                                     | 13,0                               | 1 480                            | 365            | 60,0                              | 1 240                            | 405            | 56,0                              |
| 200                                   | 8"                                    | 15,0                                | 129,0                                   | 49,0                               | 620                              | 420            | 44,0                              | 380                              | 460            | 36,0                              |
| 200                                   | 8"                                    | 25,0                                | 53,0                                    | 41,0                               | 750                              | 420            | 51,0                              | 510                              | 460            | 42,0                              |
| 200                                   | 8"                                    | 50,0                                | 18,6                                    | 31,0                               | 1 000                            | 420            | 65,0                              | 760                              | 460            | 54,0                              |
| 200                                   | 8"                                    | 75,0                                | 10,5                                    | 26,0                               | 1 200                            | 420            | 75,0                              | 960                              | 460            | 65,0                              |
| 200                                   | 8"                                    | 100,0                               | 6,7                                     | 22,0                               | 1 400                            | 420            | 80,0                              | 1 160                            | 460            | 75,0                              |
| 200                                   | 8"                                    | 150,0                               | 3,5                                     | 17,0                               | 1 800                            | 420            | 100,0                             | 1 560                            | 460            | 95,0                              |
| 250                                   | 10"                                   | 15,0                                | 152,0                                   | 71,0                               | 660                              | 475            | 59,0                              | 420                              | 515            | 49,0                              |
| 250                                   | 10"                                   | 25,0                                | 63,0                                    | 58,0                               | 810                              | 475            | 70,0                              | 570                              | 515            | 59,0                              |
| 250                                   | 10"                                   | 50,0                                | 24,7                                    | 45,0                               | 1 060                            | 475            | 85,0                              | 820                              | 515            | 75,0                              |
| 250                                   | 10"                                   | 75,0                                | 13,0                                    | 36,0                               | 1 310                            | 475            | 100,0                             | 1 070                            | 515            | 90,0                              |
| 250                                   | 10"                                   | 100,0                               | 8,8                                     | 31,0                               | 1 510                            | 475            | 115,0                             | 1 270                            | 515            | 105,0                             |
| 250                                   | 10"                                   | 150,0                               | 4,7                                     | 25,0                               | 1 910                            | 475            | 140,0                             | 1 670                            | 515            | 130,0                             |
| 300                                   | 12"                                   | 15,0                                | 165,0                                   | 90,0                               | 720                              | 540            | 85,0                              | 480                              | 580            | 65,0                              |
| 300                                   | 12"                                   | 25,0                                | 75,0                                    | 75,0                               | 870                              | 540            | 95,0                              | 630                              | 580            | 75,0                              |
| 300                                   | 12"                                   | 50,0                                | 29,4                                    | 58,0                               | 1 140                            | 540            | 115,0                             | 900                              | 580            | 100,0                             |
| 300                                   | 12"                                   | 75,0                                | 14,7                                    | 46,0                               | 1 440                            | 540            | 140,0                             | 1 200                            | 580            | 120,0                             |
| 300                                   | 12"                                   | 100,0                               | 9,5                                     | 39,0                               | 1 690                            | 540            | 160,0                             | 1 450                            | 580            | 140,0                             |
| 300                                   | 12"                                   | 150,0                               | 5,5                                     | 32,0                               | 2 090                            | 540            | 195,0                             | 1 850                            | 580            | 175,0                             |
| 350                                   | 14"                                   | 15,0                                | 139,0                                   | 105,0                              | 750                              | 590            | 100,0                             | 510                              | 630            | 80,0                              |
| 350                                   | 14"                                   | 25,0                                | 66,0                                    | 88,0                               | 900                              | 590            | 110,0                             | 660                              | 630            | 95,0                              |
| 350                                   | 14"                                   | 50,0                                | 25,8                                    | 67,0                               | 1 190                            | 590            | 135,0                             | 950                              | 630            | 120,0                             |
| 350                                   | 14"                                   | 75,0                                | 13,1                                    | 53,0                               | 1 500                            | 590            | 165,0                             | 1 260                            | 630            | 145,0                             |
| 350                                   | 14"                                   | 100,0                               | 8,6                                     | 46,0                               | 1 750                            | 590            | 185,0                             | 1 510                            | 630            | 170,0                             |
| 350                                   | 14"                                   | 150,0                               | 5,1                                     | 37,0                               | 2 150                            | 590            | 220,0                             | 1 910                            | 630            | 205,0                             |
| 400                                   | 16"                                   | 15,0                                | 253,0                                   | 149,0                              | 830                              | 660            | 135,0                             | 550                              | 710            | 105,0                             |
| 400                                   | 16"                                   | 25,0                                | 125,0                                   | 126,0                              | 980                              | 660            | 150,0                             | 700                              | 710            | 120,0                             |
| 400                                   | 16"                                   | 50,0                                | 47,4                                    | 97,0                               | 1 290                            | 660            | 180,0                             | 1 010                            | 710            | 150,0                             |
| 400                                   | 16"                                   | 75,0                                | 25,6                                    | 79,0                               | 1 580                            | 660            | 210,0                             | 1 300                            | 710            | 180,0                             |
| 400                                   | 16"                                   | 100,0                               | 17,0                                    | 68,0                               | 1 830                            | 660            | 235,0                             | 1 550                            | 710            | 205,0                             |
| 400                                   | 16"                                   | 150,0                               | 9,5                                     | 55,0                               | 2 280                            | 660            | 280,0                             | 2 000                            | 710            | 255,0                             |
| 500                                   | 20"                                   | 15,0                                | 329,0                                   | 238,0                              | 880                              | 780            | 175,0                             | 600                              | 835            | 145,0                             |
| 500                                   | 20"                                   | 25,0                                | 174,0                                   | 205,0                              | 1 030                            | 780            | 195,0                             | 750                              | 835            | 165,0                             |
| 500                                   | 20"                                   | 50,0                                | 61,0                                    | 151,0                              | 1 410                            | 780            | 245,0                             | 1 130                            | 835            | 210,0                             |
| 500                                   | 20"                                   | 75,0                                | 31,0                                    | 120,0                              | 1 780                            | 780            | 290,0                             | 1 500                            | 835            | 260,0                             |
| 500                                   | 20"                                   | 100,0                               | 19,2                                    | 101,0                              | 2 130                            | 780            | 335,0                             | 1 850                            | 835            | 305,0                             |
| 500                                   | 20"                                   | 150,0                               | 11,3                                    | 82,0                               | 2 630                            | 780            | 400,0                             | 2 350                            | 835            | 370,0                             |
| 600                                   | 24"                                   | 15,0                                | 413,0                                   | 351,0                              | 930                              | 905            | 235,0                             | 650                              | 965            | 185,0                             |
| 600                                   | 24"                                   | 25,0                                | 208,0                                   | 297,0                              | 1 110                            | 905            | 265,0                             | 830                              | 965            | 215,0                             |
| 600                                   | 24"                                   | 50,0                                | 71,0                                    | 216,0                              | 1 550                            | 905            | 335,0                             | 1 270                            | 965            | 280,0                             |
| 600                                   | 24"                                   | 75,0                                | 33,0                                    | 165,0                              | 2 040                            | 905            | 410,0                             | 1 760                            | 965            | 355,0                             |
| 600                                   | 24"                                   | 100,0                               | 20,8                                    | 139,0                              | 2 440                            | 905            | 470,0                             | 2 160                            | 965            | 420,0                             |
| 600                                   | 24"                                   | 150,0                               | 12,1                                    | 112,0                              | 3 040                            | 905            | 565,0                             | 2 760                            | 965            | 510,0                             |

## PN 6

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Laterálny pohyb<br>Lateral movement | Laterálna tuhosť<br>Lateral spring rate | Treći moment<br>Frictional moments | MWL                              |                |                                   | MFL                              |                |                                   |
|---------------------------------------|---------------------------------------|-------------------------------------|-----------------------------------------|------------------------------------|----------------------------------|----------------|-----------------------------------|----------------------------------|----------------|-----------------------------------|
| DN                                    | DN                                    |                                     |                                         |                                    | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
| mm                                    | inch                                  | ± mm                                | N/mm                                    | N.m/bar                            | mm                               | mm             | kg                                | mm                               | mm             | kg                                |
| 700                                   | 28"                                   | 15,0                                | 672,0                                   | 518,0                              | 990                              | 1 040          | 320,0                             | 710                              | 1 110          | 240,0                             |
| 700                                   | 28"                                   | 25,0                                | 318,0                                   | 431,0                              | 1 210                            | 1 040          | 360,0                             | 930                              | 1 110          | 280,0                             |
| 700                                   | 28"                                   | 50,0                                | 100,0                                   | 303,0                              | 1 760                            | 1 040          | 470,0                             | 1 480                            | 1 110          | 390,0                             |
| 700                                   | 28"                                   | 75,0                                | 57,0                                    | 249,0                              | 2 160                            | 1 040          | 545,0                             | 1 880                            | 1 110          | 465,0                             |
| 700                                   | 28"                                   | 100,0                               | 37,0                                    | 212,0                              | 2 560                            | 1 040          | 620,0                             | 2 280                            | 1 110          | 540,0                             |
| 700                                   | 28"                                   | 150,0                               | 19,1                                    | 163,0                              | 3 360                            | 1 040          | 775,0                             | 3 080                            | 1 110          | 695,0                             |
| 800                                   | 32"                                   | 15,0                                | 735,0                                   | 680,0                              | 1 050                            | 1 170          | 415,0                             | 770                              | 1 250          | 300,0                             |
| 800                                   | 32"                                   | 25,0                                | 341,0                                   | 560,0                              | 1 300                            | 1 170          | 470,0                             | 1 020                            | 1 250          | 355,0                             |
| 800                                   | 32"                                   | 50,0                                | 114,0                                   | 399,0                              | 1 870                            | 1 170          | 595,0                             | 1 590                            | 1 250          | 480,0                             |
| 800                                   | 32"                                   | 75,0                                | 61,0                                    | 319,0                              | 2 370                            | 1 170          | 705,0                             | 2 090                            | 1 250          | 590,0                             |
| 800                                   | 32"                                   | 100,0                               | 37,5                                    | 265,0                              | 2 870                            | 1 170          | 815,0                             | 2 590                            | 1 250          | 700,0                             |
| 800                                   | 32"                                   | 150,0                               | 20,9                                    | 209,0                              | 3 670                            | 1 170          | 990,0                             | 3 390                            | 1 250          | 875,0                             |
| 900                                   | 36"                                   | 15,0                                | 735,0                                   | 851,0                              | 1 130                            | 1 325          | 560,0                             | 850                              | 1 370          | 365,0                             |
| 900                                   | 36"                                   | 25,0                                | 367,0                                   | 710,0                              | 1 380                            | 1 325          | 625,0                             | 1 100                            | 1 370          | 430,0                             |
| 900                                   | 36"                                   | 50,0                                | 110,0                                   | 485,0                              | 2 080                            | 1 325          | 800,0                             | 1 800                            | 1 370          | 600,0                             |
| 900                                   | 36"                                   | 75,0                                | 63,0                                    | 396,0                              | 2 580                            | 1 325          | 920,0                             | 2 300                            | 1 370          | 725,0                             |
| 900                                   | 36"                                   | 100,0                               | 37,7                                    | 324,0                              | 3 180                            | 1 325          | 1 070,0                           | 2 900                            | 1 370          | 875,0                             |
| 900                                   | 36"                                   | 150,0                               | 21,0                                    | 255,0                              | 4 080                            | 1 325          | 1 295,0                           | 3 800                            | 1 370          | 1 100,0                           |
| 1000                                  | 40"                                   | 15,0                                | 1 147,0                                 | 1 070,0                            | 1 600                            | 1 450          | 700,0                             | 1 520                            | 1 470          | 650,0                             |
| 1000                                  | 40"                                   | 25,0                                | 537,0                                   | 867,0                              | 1 890                            | 1 450          | 780,0                             | 1 810                            | 1 470          | 730,0                             |
| 1000                                  | 40"                                   | 50,0                                | 164,0                                   | 584,0                              | 2 630                            | 1 450          | 985,0                             | 2 550                            | 1 470          | 930,0                             |
| 1000                                  | 40"                                   | 75,0                                | 88,0                                    | 462,0                              | 3 230                            | 1 450          | 1 150,0                           | 3 150                            | 1 470          | 1 095,0                           |
| 1000                                  | 40"                                   | 100,0                               | 59,0                                    | 393,0                              | 3 730                            | 1 450          | 1 290,0                           | 3 650                            | 1 470          | 1 235,0                           |
| 1000                                  | 40"                                   | 150,0                               | 30,1                                    | 297,0                              | 4 830                            | 1 450          | 1 590,0                           | 4 750                            | 1 470          | 1 535,0                           |
| 1100                                  | 44"                                   | 15,0                                | 1 196,0                                 | 1 385,0                            | 1 690                            | 1 580          | 810,0                             | 1 610                            | 1 625          | 785,0                             |
| 1100                                  | 44"                                   | 25,0                                | 540,0                                   | 1 109,0                            | 2 020                            | 1 580          | 915,0                             | 1 940                            | 1 625          | 885,0                             |
| 1100                                  | 44"                                   | 50,0                                | 167,0                                   | 747,0                              | 2 820                            | 1 580          | 1 160,0                           | 2 740                            | 1 625          | 1 135,0                           |
| 1100                                  | 44"                                   | 75,0                                | 90,0                                    | 591,0                              | 3 470                            | 1 580          | 1 360,0                           | 3 390                            | 1 625          | 1 335,0                           |
| 1100                                  | 44"                                   | 100,0                               | 62,0                                    | 509,0                              | 3 970                            | 1 580          | 1 515,0                           | 3 890                            | 1 625          | 1 485,0                           |
| 1100                                  | 44"                                   | 150,0                               | 30,0                                    | 374,0                              | 5 270                            | 1 580          | 1 915,0                           | 5 190                            | 1 625          | 1 885,0                           |
| 1200                                  | 48"                                   | 15,0                                | 1 153,0                                 | 1 672,0                            | 1 830                            | 1 720          | 1 080,0                           | 1 740                            | 1 770          | 960,0                             |
| 1200                                  | 48"                                   | 25,0                                | 530,0                                   | 1 347,0                            | 2 170                            | 1 720          | 1 195,0                           | 2 080                            | 1 770          | 1 075,0                           |
| 1200                                  | 48"                                   | 50,0                                | 154,0                                   | 889,0                              | 3 070                            | 1 720          | 1 500,0                           | 2 980                            | 1 770          | 1 380,0                           |
| 1200                                  | 48"                                   | 75,0                                | 84,0                                    | 703,0                              | 3 770                            | 1 720          | 1 735,0                           | 3 680                            | 1 770          | 1 615,0                           |
| 1200                                  | 48"                                   | 100,0                               | 56,0                                    | 596,0                              | 4 370                            | 1 720          | 1 940,0                           | 4 280                            | 1 770          | 1 820,0                           |
| 1200                                  | 48"                                   | 150,0                               | 27,1                                    | 440,0                              | 5 770                            | 1 720          | 2 415,0                           | 5 680                            | 1 770          | 2 290,0                           |
| 1300                                  | 52"                                   | 15,0                                | 1 343,0                                 | 1 637,0                            | 1 900                            | 1 770          | 1 660,0                           | 1 820                            | 1 815          | 1 715,0                           |
| 1300                                  | 52"                                   | 25,0                                | 626,0                                   | 1 313,0                            | 2 240                            | 1 770          | 1 790,0                           | 2 160                            | 1 815          | 1 845,0                           |
| 1300                                  | 52"                                   | 50,0                                | 184,0                                   | 861,0                              | 3 140                            | 1 770          | 2 125,0                           | 3 060                            | 1 815          | 2 180,0                           |
| 1300                                  | 52"                                   | 75,0                                | 100,0                                   | 679,0                              | 3 840                            | 1 770          | 2 385,0                           | 3 760                            | 1 815          | 2 440,0                           |
| 1300                                  | 52"                                   | 100,0                               | 67,0                                    | 575,0                              | 4 440                            | 1 770          | 2 610,0                           | 4 360                            | 1 815          | 2 665,0                           |
| 1300                                  | 52"                                   | 150,0                               | 32,7                                    | 424,0                              | 5 840                            | 1 770          | 3 135,0                           | 5 760                            | 1 815          | 3 190,0                           |
| 1400                                  | 56"                                   | 15,0                                | 1 493,0                                 | 1 939,0                            | 1 960                            | 1 885          | 1 900,0                           | 1 880                            | 1 945          | 1 985,0                           |
| 1400                                  | 56"                                   | 25,0                                | 707,0                                   | 1 559,0                            | 2 310                            | 1 885          | 2 040,0                           | 2 230                            | 1 945          | 2 125,0                           |
| 1400                                  | 56"                                   | 50,0                                | 217,0                                   | 1 036,0                            | 3 210                            | 1 885          | 2 405,0                           | 3 130                            | 1 945          | 2 490,0                           |
| 1400                                  | 56"                                   | 75,0                                | 120,0                                   | 822,0                              | 3 910                            | 1 885          | 2 690,0                           | 3 830                            | 1 945          | 2 775,0                           |
| 1400                                  | 56"                                   | 100,0                               | 80,0                                    | 698,0                              | 4 510                            | 1 885          | 2 930,0                           | 4 430                            | 1 945          | 3 020,0                           |
| 1400                                  | 56"                                   | 150,0                               | 38,8                                    | 512,0                              | 5 960                            | 1 885          | 3 520,0                           | 5 880                            | 1 945          | 3 605,0                           |
| 1500                                  | 60"                                   | 15,0                                | 1 606,0                                 | 2 254,0                            | 2 090                            | 2 000          | 2 125,0                           | 2 010                            | 2 065          | 2 280,0                           |
| 1500                                  | 60"                                   | 25,0                                | 832,0                                   | 1 858,0                            | 2 410                            | 2 000          | 2 265,0                           | 2 330                            | 2 065          | 2 420,0                           |
| 1500                                  | 60"                                   | 50,0                                | 252,0                                   | 1 230,0                            | 3 340                            | 2 000          | 2 675,0                           | 3 260                            | 2 065          | 2 825,0                           |
| 1500                                  | 60"                                   | 75,0                                | 140,0                                   | 981,0                              | 4 040                            | 2 000          | 2 980,0                           | 3 960                            | 2 065          | 3 135,0                           |
| 1500                                  | 60"                                   | 100,0                               | 89,0                                    | 815,0                              | 4 740                            | 2 000          | 3 285,0                           | 4 660                            | 2 065          | 3 440,0                           |
| 1500                                  | 60"                                   | 150,0                               | 43,6                                    | 599,0                              | 6 240                            | 2 000          | 3 945,0                           | 6 160                            | 2 065          | 4 095,0                           |

PN 6



## MWL



## MFL

| Menovitá svetlost'<br>Nominal diametr | Menovitá svetlost'<br>Nominal diametr | Laterálny pohyb<br>Lateral movement | Laterálna tuhosť<br>Lateral spring rate | Treť moment<br>Frictional moments | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|---------------------------------------|---------------------------------------|-------------------------------------|-----------------------------------------|-----------------------------------|----------------------------------|----------------|-----------------------------------|----------------------------------|----------------|-----------------------------------|
| DN                                    | DN                                    | ± mm                                | N/mm                                    | N.m/bar                           | mm                               | mm             | kg                                | mm                               | mm             | kg                                |
| 1600                                  | 64"                                   | 15,0                                | 1 719,0                                 | 2 212,0                           | 2 200                            | 2 070          | 2 430,0                           | 2 120                            | 2 125          | 2 565,0                           |
| 1600                                  | 64"                                   | 25,0                                | 951,0                                   | 1 847,0                           | 2 500                            | 2 070          | 2 575,0                           | 2 420                            | 2 125          | 2 705,0                           |
| 1600                                  | 64"                                   | 50,0                                | 276,0                                   | 1 191,0                           | 3 500                            | 2 070          | 3 045,0                           | 3 420                            | 2 125          | 3 175,0                           |
| 1600                                  | 64"                                   | 75,0                                | 147,0                                   | 927,0                             | 4 300                            | 2 070          | 3 420,0                           | 4 220                            | 2 125          | 3 555,0                           |
| 1600                                  | 64"                                   | 100,0                               | 91,0                                    | 759,0                             | 5 100                            | 2 070          | 3 800,0                           | 5 020                            | 2 125          | 3 930,0                           |
| 1600                                  | 64"                                   | 150,0                               | 44,9                                    | 557,0                             | 6 700                            | 2 070          | 4 550,0                           | 6 620                            | 2 125          | 4 685,0                           |
|                                       |                                       |                                     |                                         |                                   |                                  |                |                                   |                                  |                |                                   |
| 1800                                  | 72"                                   | 15,0                                | 2 158,0                                 | 2 999,0                           | 2 310                            | 2 300          | 3 090,0                           | 2 240                            | 2 380          | 3 415,0                           |
| 1800                                  | 72"                                   | 25,0                                | 1 049,0                                 | 2 400,0                           | 2 710                            | 2 300          | 3 340,0                           | 2 640                            | 2 380          | 3 670,0                           |
| 1800                                  | 72"                                   | 50,0                                | 325,0                                   | 1 574,0                           | 3 760                            | 2 300          | 4 005,0                           | 3 690                            | 2 380          | 4 335,0                           |
| 1800                                  | 72"                                   | 75,0                                | 170,0                                   | 1 216,0                           | 4 660                            | 2 300          | 4 575,0                           | 4 590                            | 2 380          | 4 900,0                           |
| 1800                                  | 72"                                   | 100,0                               | 105,0                                   | 990,0                             | 5 560                            | 2 300          | 5 140,0                           | 5 490                            | 2 380          | 5 470,0                           |
| 1800                                  | 72"                                   | 150,0                               | 57,0                                    | 756,0                             | 7 060                            | 2 300          | 6 090,0                           | 6 990                            | 2 380          | 6 420,0                           |
|                                       |                                       |                                     |                                         |                                   |                                  |                |                                   |                                  |                |                                   |
| 2000                                  | 80"                                   | 15,0                                | 2 637,0                                 | 3 808,0                           | 2 400                            | 2 520          | 3 740,0                           | 2 330                            | 2 630          | 4 275,0                           |
| 2000                                  | 80"                                   | 25,0                                | 1 148,0                                 | 2 933,0                           | 2 900                            | 2 520          | 4 095,0                           | 2 830                            | 2 630          | 4 630,0                           |
| 2000                                  | 80"                                   | 50,0                                | 347,0                                   | 1 891,0                           | 4 100                            | 2 520          | 4 945,0                           | 4 030                            | 2 630          | 5 480,0                           |
| 2000                                  | 80"                                   | 75,0                                | 184,0                                   | 1 459,0                           | 5 100                            | 2 520          | 5 655,0                           | 5 030                            | 2 630          | 6 185,0                           |
| 2000                                  | 80"                                   | 100,0                               | 113,0                                   | 1 187,0                           | 6 100                            | 2 520          | 6 360,0                           | 6 030                            | 2 630          | 6 895,0                           |
| 2000                                  | 80"                                   | 150,0                               | 91,0                                    | 903,0                             | 7 800                            | 2 520          | 7 655,0                           | 7 740                            | 2 630          | 8 190,0                           |
|                                       |                                       |                                     |                                         |                                   |                                  |                |                                   |                                  |                |                                   |
| 2200                                  | 88"                                   | 15,0                                | 4 704,0                                 | 4 157,0                           | 2 510                            | 2 700          | 3 435,0                           | 2 460                            | 2 810          | 4 145,0                           |
| 2200                                  | 88"                                   | 25,0                                | 2 122,0                                 | 3 216,0                           | 3 010                            | 2 700          | 3 825,0                           | 2 960                            | 2 810          | 4 535,0                           |
| 2200                                  | 88"                                   | 50,0                                | 639,0                                   | 2 053,0                           | 4 260                            | 2 700          | 4 800,0                           | 4 210                            | 2 810          | 5 515,0                           |
| 2200                                  | 88"                                   | 75,0                                | 345,0                                   | 1 593,0                           | 5 260                            | 2 700          | 5 585,0                           | 5 210                            | 2 810          | 6 295,0                           |
| 2200                                  | 88"                                   | 100,0                               | 215,0                                   | 1 301,0                           | 6 260                            | 2 700          | 6 365,0                           | 6 210                            | 2 810          | 7 075,0                           |
| 2200                                  | 88"                                   | 150,0                               | 113,0                                   | 978,0                             | 8 060                            | 2 700          | 7 770,0                           | 8 010                            | 2 810          | 8 485,0                           |
|                                       |                                       |                                     |                                         |                                   |                                  |                |                                   |                                  |                |                                   |
| 2400                                  | 96"                                   | 15,0                                | 4 559,0                                 | 5 013,0                           | 2 640                            | 2 920          | 4 730,0                           | 2 580                            | 3 050          | 5 090,0                           |
| 2400                                  | 96"                                   | 25,0                                | 2 120,0                                 | 3 933,0                           | 3 140                            | 2 920          | 5 160,0                           | 3 080                            | 3 050          | 5 520,0                           |
| 2400                                  | 96"                                   | 50,0                                | 634,0                                   | 2 522,0                           | 4 440                            | 2 920          | 6 280,0                           | 4 380                            | 3 050          | 6 640,0                           |
| 2400                                  | 96"                                   | 75,0                                | 349,0                                   | 1 976,0                           | 5 440                            | 2 920          | 7 140,0                           | 5 380                            | 3 050          | 7 500,0                           |
| 2400                                  | 96"                                   | 100,0                               | 220,0                                   | 1 625,0                           | 6 440                            | 2 920          | 8 005,0                           | 6 380                            | 3 050          | 8 365,0                           |
| 2400                                  | 96"                                   | 150,0                               | 117,0                                   | 1 231,0                           | 8 240                            | 2 920          | 9 555,0                           | 8 180                            | 3 050          | 9 915,0                           |
|                                       |                                       |                                     |                                         |                                   |                                  |                |                                   |                                  |                |                                   |
| 2600                                  | 104"                                  | 15,0                                | 4 378,0                                 | 6 059,0                           | 2 790                            | 3 140          | 5 295,0                           | 2 730                            | 3 295          | 5 890,0                           |
| 2600                                  | 104"                                  | 25,0                                | 2 095,0                                 | 4 795,0                           | 3 290                            | 3 140          | 5 765,0                           | 3 230                            | 3 295          | 6 365,0                           |
| 2600                                  | 104"                                  | 50,0                                | 583,0                                   | 2 987,0                           | 4 740                            | 3 140          | 7 135,0                           | 4 680                            | 3 295          | 7 735,0                           |
| 2600                                  | 104"                                  | 75,0                                | 332,0                                   | 2 371,0                           | 5 740                            | 3 140          | 8 080,0                           | 5 680                            | 3 295          | 8 680,0                           |
| 2600                                  | 104"                                  | 100,0                               | 214,0                                   | 1 965,0                           | 6 740                            | 3 140          | 9 025,0                           | 6 680                            | 3 295          | 9 620,0                           |
| 2600                                  | 104"                                  | 150,0                               | 107,0                                   | 1 446,0                           | 8 840                            | 3 140          | 11 005,0                          | 8 780                            | 3 295          | 11 605,0                          |
|                                       |                                       |                                     |                                         |                                   |                                  |                |                                   |                                  |                |                                   |
| 2800                                  | 112"                                  | 15,0                                | 6 031,0                                 | 5 983,0                           | 2 940                            | 3 300          | 5 785,0                           | 2 880                            | 3 450          | 6 495,0                           |
| 2800                                  | 112"                                  | 25,0                                | 2 963,0                                 | 4 736,0                           | 3 440                            | 3 300          | 6 295,0                           | 3 380                            | 3 450          | 7 005,0                           |
| 2800                                  | 112"                                  | 50,0                                | 822,0                                   | 2 913,0                           | 4 940                            | 3 300          | 7 830,0                           | 4 880                            | 3 450          | 8 535,0                           |
| 2800                                  | 112"                                  | 75,0                                | 4 530,0                                 | 2 272,0                           | 6 040                            | 3 300          | 8 950,0                           | 5 980                            | 3 450          | 9 660,0                           |
| 2800                                  | 112"                                  | 100,0                               | 309,0                                   | 1 925,0                           | 6 940                            | 3 300          | 9 870,0                           | 6 880                            | 3 450          | 10 580,0                          |
| 2800                                  | 112"                                  | 150,0                               | 1 400,0                                 | 1 352,0                           | 9 440                            | 3 300          | 12 420,0                          | 9 380                            | 3 450          | 13 130,0                          |

PN 10

| Menovitá svetlost'<br>Nominal diameter | Menovitá svetlost'<br>Nominal diameter | Laterálny pohyb<br>Lateral movement | Laterálna tuhosť<br>Lateral spring rate | Treći moment<br>Frictional moments |
|----------------------------------------|----------------------------------------|-------------------------------------|-----------------------------------------|------------------------------------|
| DN                                     | DN                                     |                                     |                                         |                                    |
| mm                                     | inch                                   | ± mm                                | N/mm                                    | N.m/bar                            |
| 15                                     | ½"                                     | 15,0                                | 1,2                                     | 0,4                                |
| 15                                     | ½"                                     | 25,0                                | 0,8                                     | 0,4                                |
| 15                                     | ½"                                     | 50,0                                | 0,5                                     | 0,4                                |
| 15                                     | ½"                                     | 75,0                                | 0,4                                     | 0,4                                |
| 15                                     | ½"                                     | 100,0                               | 0,2                                     | 0,3                                |
| 15                                     | ½"                                     | 150,0                               | 0,1                                     | 0,2                                |
| 20                                     | ¾"                                     | 15,0                                | 1,8                                     | 0,7                                |
| 20                                     | ¾"                                     | 25,0                                | 1,0                                     | 0,7                                |
| 20                                     | ¾"                                     | 50,0                                | 0,4                                     | 0,6                                |
| 20                                     | ¾"                                     | 75,0                                | 0,2                                     | 0,5                                |
| 20                                     | ¾"                                     | 100,0                               | 0,1                                     | 0,4                                |
| 20                                     | ¾"                                     | 150,0                               | 0,1                                     | 0,4                                |
| 25                                     | 1"                                     | 15,0                                | 2,5                                     | 1,0                                |
| 25                                     | 1"                                     | 25,0                                | 1,8                                     | 0,9                                |
| 25                                     | 1"                                     | 50,0                                | 0,6                                     | 0,7                                |
| 25                                     | 1"                                     | 75,0                                | 0,3                                     | 0,6                                |
| 25                                     | 1"                                     | 100,0                               | 0,2                                     | 0,6                                |
| 25                                     | 1"                                     | 150,0                               | 0,1                                     | 0,5                                |
| 32                                     | 1 ¼"                                   | 15,0                                | 4,1                                     | 1,6                                |
| 32                                     | 1 ¼"                                   | 25,0                                | 2,0                                     | 1,4                                |
| 32                                     | 1 ¼"                                   | 50,0                                | 0,6                                     | 1,1                                |
| 32                                     | 1 ¼"                                   | 75,0                                | 0,4                                     | 1,0                                |
| 32                                     | 1 ¼"                                   | 100,0                               | 0,2                                     | 0,8                                |
| 32                                     | 1 ¼"                                   | 150,0                               | 0,1                                     | 0,7                                |
| 40                                     | 1 ½"                                   | 15,0                                | 3,7                                     | 3,1                                |
| 40                                     | 1 ½"                                   | 25,0                                | 2,7                                     | 3,0                                |
| 40                                     | 1 ½"                                   | 50,0                                | 0,7                                     | 2,3                                |
| 40                                     | 1 ½"                                   | 75,0                                | 0,4                                     | 2,0                                |
| 40                                     | 1 ½"                                   | 100,0                               | 0,3                                     | 1,8                                |
| 40                                     | 1 ½"                                   | 150,0                               | 0,2                                     | 1,5                                |
| 50                                     | 2"                                     | 15,0                                | 10,5                                    | 5,1                                |
| 50                                     | 2"                                     | 25,0                                | 6,2                                     | 4,7                                |
| 50                                     | 2"                                     | 50,0                                | 1,5                                     | 3,4                                |
| 50                                     | 2"                                     | 75,0                                | 0,9                                     | 2,9                                |
| 50                                     | 2"                                     | 100,0                               | 0,6                                     | 2,6                                |
| 50                                     | 2"                                     | 150,0                               | 0,3                                     | 2,1                                |
| 65                                     | 2 ½"                                   | 15,0                                | 9,4                                     | 7,1                                |
| 65                                     | 2 ½"                                   | 25,0                                | 4,1                                     | 6,2                                |
| 65                                     | 2 ½"                                   | 50,0                                | 1,4                                     | 4,8                                |
| 65                                     | 2 ½"                                   | 75,0                                | 0,7                                     | 3,9                                |
| 65                                     | 2 ½"                                   | 100,0                               | 0,4                                     | 3,3                                |
| 65                                     | 2 ½"                                   | 150,0                               | 0,2                                     | 2,7                                |
| 80                                     | 3"                                     | 15,0                                | 9,2                                     | 9,7                                |
| 80                                     | 3"                                     | 25,0                                | 4,5                                     | 8,4                                |
| 80                                     | 3"                                     | 50,0                                | 1,5                                     | 6,4                                |
| 80                                     | 3"                                     | 75,0                                | 0,8                                     | 5,2                                |
| 80                                     | 3"                                     | 100,0                               | 0,6                                     | 4,7                                |
| 80                                     | 3"                                     | 150,0                               | 0,3                                     | 3,7                                |
| 100                                    | 4"                                     | 15,0                                | 21,8                                    | 15,0                               |
| 100                                    | 4"                                     | 25,0                                | 12,8                                    | 14,0                               |
| 100                                    | 4"                                     | 50,0                                | 4,2                                     | 11,0                               |
| 100                                    | 4"                                     | 75,0                                | 2,8                                     | 9,6                                |
| 100                                    | 4"                                     | 100,0                               | 1,6                                     | 8,1                                |
| 100                                    | 4"                                     | 150,0                               | 0,9                                     | 6,6                                |



MWL



MFL

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                | mm                               | mm             | kg                                |
| 360                              | 135            | 2,2                               | 180                              | 150            | 2,3                               |
| 380                              | 135            | 2,3                               | 200                              | 150            | 2,3                               |
| 410                              | 135            | 2,3                               | 230                              | 150            | 2,4                               |
| 430                              | 135            | 2,4                               | 250                              | 150            | 2,4                               |
| 480                              | 135            | 2,5                               | 300                              | 150            | 2,5                               |
| 630                              | 135            | 2,8                               | 450                              | 150            | 2,8                               |
| 350                              | 145            | 3,1                               | 170                              | 160            | 3,0                               |
| 380                              | 145            | 3,2                               | 200                              | 160            | 3,0                               |
| 440                              | 145            | 3,3                               | 260                              | 160            | 3,2                               |
| 520                              | 145            | 3,5                               | 340                              | 160            | 3,4                               |
| 570                              | 145            | 3,6                               | 390                              | 160            | 3,5                               |
| 670                              | 145            | 3,9                               | 490                              | 160            | 3,8                               |
| 360                              | 155            | 3,7                               | 180                              | 170            | 3,5                               |
| 380                              | 155            | 3,8                               | 200                              | 170            | 3,5                               |
| 470                              | 155            | 4,1                               | 290                              | 170            | 3,8                               |
| 540                              | 155            | 4,3                               | 360                              | 170            | 4,1                               |
| 600                              | 155            | 4,5                               | 420                              | 170            | 4,3                               |
| 720                              | 155            | 4,9                               | 540                              | 170            | 4,6                               |
| 360                              | 180            | 5,1                               | 180                              | 195            | 4,8                               |
| 400                              | 180            | 5,2                               | 220                              | 195            | 4,9                               |
| 520                              | 180            | 5,7                               | 340                              | 195            | 5,4                               |
| 560                              | 180            | 5,9                               | 380                              | 195            | 5,6                               |
| 670                              | 180            | 6,4                               | 490                              | 195            | 6,1                               |
| 820                              | 180            | 7,0                               | 640                              | 195            | 6,7                               |
| 400                              | 230            | 9,3                               | 220                              | 260            | 7,5                               |
| 420                              | 230            | 9,4                               | 240                              | 260            | 7,6                               |
| 550                              | 230            | 10,0                              | 370                              | 260            | 8,6                               |
| 640                              | 230            | 11,0                              | 460                              | 260            | 9,2                               |
| 720                              | 230            | 12,0                              | 540                              | 260            | 9,8                               |
| 840                              | 230            | 13,0                              | 660                              | 260            | 11,0                              |
| 410                              | 245            | 11,0                              | 230                              | 275            | 9,4                               |
| 450                              | 245            | 11,0                              | 270                              | 275            | 9,8                               |
| 630                              | 245            | 13,0                              | 450                              | 275            | 11,0                              |
| 730                              | 245            | 14,0                              | 550                              | 275            | 12,0                              |
| 830                              | 245            | 15,0                              | 650                              | 275            | 13,0                              |
| 1 030                            | 245            | 16,0                              | 850                              | 275            | 15,0                              |
| 420                              | 265            | 13,0                              | 240                              | 295            | 11,0                              |
| 490                              | 265            | 14,0                              | 310                              | 295            | 12,0                              |
| 640                              | 265            | 16,0                              | 460                              | 295            | 14,0                              |
| 790                              | 265            | 18,0                              | 610                              | 295            | 16,0                              |
| 940                              | 265            | 20,0                              | 760                              | 295            | 18,0                              |
| 1 140                            | 265            | 22,0                              | 960                              | 295            | 20,0                              |
| 450                              | 280            | 16,0                              | 270                              | 310            | 14,0                              |
| 520                              | 280            | 17,0                              | 340                              | 310            | 15,0                              |
| 690                              | 280            | 19,0                              | 510                              | 310            | 18,0                              |
| 850                              | 280            | 22,0                              | 670                              | 310            | 20,0                              |
| 950                              | 280            | 23,0                              | 770                              | 310            | 21,0                              |
| 1 200                            | 280            | 27,0                              | 1 020                            | 310            | 25,0                              |
| 570                              | 320            | 23,0                              | 330                              | 360            | 19,0                              |
| 630                              | 320            | 24,0                              | 390                              | 360            | 20,0                              |
| 820                              | 320            | 28,0                              | 580                              | 360            | 24,0                              |
| 920                              | 320            | 30,0                              | 680                              | 360            | 26,0                              |
| 1 100                            | 320            | 34,0                              | 860                              | 360            | 30,0                              |
| 1 350                            | 320            | 39,0                              | 1 110                            | 360            | 36,0                              |

PN 10

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Laterálny pohyb<br>Lateral movement | Laterálna tuhosť<br>Lateral spring rate | Treći moment<br>Frictional moments | MWL                              |                |                                   | MFL                              |                |                                   |
|---------------------------------------|---------------------------------------|-------------------------------------|-----------------------------------------|------------------------------------|----------------------------------|----------------|-----------------------------------|----------------------------------|----------------|-----------------------------------|
| DN                                    | DN                                    |                                     |                                         |                                    | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
| mm                                    | inch                                  | ± mm                                | N/mm                                    | N.m/bar                            | mm                               | mm             | kg                                | mm                               | mm             | kg                                |
| 125                                   | 5"                                    | 15,0                                | 79,0                                    | 22,0                               | 590                              | 350            | 29,0                              | 350                              | 390            | 26,0                              |
| 125                                   | 5"                                    | 25,0                                | 57,0                                    | 21,0                               | 630                              | 350            | 30,0                              | 390                              | 390            | 27,0                              |
| 125                                   | 5"                                    | 50,0                                | 14,7                                    | 16,0                               | 820                              | 350            | 34,0                              | 580                              | 390            | 31,0                              |
| 125                                   | 5"                                    | 75,0                                | 8,2                                     | 14,0                               | 970                              | 350            | 38,0                              | 730                              | 390            | 35,0                              |
| 125                                   | 5"                                    | 100,0                               | 5,1                                     | 12,0                               | 1 130                            | 350            | 42,0                              | 890                              | 390            | 39,0                              |
| 125                                   | 5"                                    | 150,0                               | 2,9                                     | 9,6                                | 1 370                            | 350            | 49,0                              | 1 130                            | 390            | 45,0                              |
| 150                                   | 6"                                    | 15,0                                | 110,0                                   | 30,0                               | 600                              | 385            | 36,0                              | 360                              | 425            | 31,0                              |
| 150                                   | 6"                                    | 25,0                                | 60,0                                    | 27,0                               | 680                              | 385            | 38,0                              | 440                              | 425            | 33,0                              |
| 150                                   | 6"                                    | 50,0                                | 21,8                                    | 21,0                               | 880                              | 385            | 45,0                              | 640                              | 425            | 40,0                              |
| 150                                   | 6"                                    | 75,0                                | 12,9                                    | 18,0                               | 1 030                            | 385            | 50,0                              | 790                              | 425            | 45,0                              |
| 150                                   | 6"                                    | 100,0                               | 7,6                                     | 15,0                               | 1 230                            | 385            | 57,0                              | 990                              | 425            | 52,0                              |
| 150                                   | 6"                                    | 150,0                               | 4,5                                     | 13,0                               | 1 480                            | 385            | 65,0                              | 1 240                            | 425            | 60,0                              |
| 200                                   | 8"                                    | 15,0                                | 129,0                                   | 49,0                               | 630                              | 440            | 53,0                              | 390                              | 480            | 42,0                              |
| 200                                   | 8"                                    | 25,0                                | 53,0                                    | 41,0                               | 760                              | 440            | 59,0                              | 520                              | 480            | 48,0                              |
| 200                                   | 8"                                    | 50,0                                | 18,6                                    | 31,0                               | 1 010                            | 440            | 70,0                              | 770                              | 480            | 60,0                              |
| 200                                   | 8"                                    | 75,0                                | 10,5                                    | 26,0                               | 1 210                            | 440            | 80,0                              | 970                              | 480            | 70,0                              |
| 200                                   | 8"                                    | 100,0                               | 6,7                                     | 22,0                               | 1 410                            | 440            | 90,0                              | 1 170                            | 480            | 80,0                              |
| 200                                   | 8"                                    | 150,0                               | 3,5                                     | 17,0                               | 1 810                            | 440            | 110,0                             | 1 570                            | 480            | 100,0                             |
| 250                                   | 10"                                   | 15,0                                | 152,0                                   | 81,0                               | 670                              | 515            | 70,0                              | 430                              | 565            | 59,0                              |
| 250                                   | 10"                                   | 25,0                                | 63,0                                    | 67,0                               | 820                              | 515            | 80,0                              | 580                              | 565            | 70,0                              |
| 250                                   | 10"                                   | 50,0                                | 24,7                                    | 52,0                               | 1 070                            | 515            | 100,0                             | 830                              | 565            | 85,0                              |
| 250                                   | 10"                                   | 75,0                                | 13,0                                    | 42,0                               | 1 320                            | 515            | 115,0                             | 1 080                            | 565            | 105,0                             |
| 250                                   | 10"                                   | 100,0                               | 8,8                                     | 37,0                               | 1 520                            | 515            | 130,0                             | 1 280                            | 565            | 115,0                             |
| 250                                   | 10"                                   | 150,0                               | 4,7                                     | 29,0                               | 1 920                            | 515            | 155,0                             | 1 680                            | 565            | 145,0                             |
| 300                                   | 12"                                   | 15,0                                | 179,0                                   | 104,0                              | 730                              | 565            | 95,0                              | 490                              | 615            | 80,0                              |
| 300                                   | 12"                                   | 25,0                                | 81,0                                    | 87,0                               | 880                              | 565            | 110,0                             | 640                              | 615            | 90,0                              |
| 300                                   | 12"                                   | 50,0                                | 31,8                                    | 67,0                               | 1 150                            | 565            | 130,0                             | 910                              | 615            | 110,0                             |
| 300                                   | 12"                                   | 75,0                                | 15,9                                    | 54,0                               | 1 450                            | 565            | 155,0                             | 1 210                            | 615            | 135,0                             |
| 300                                   | 12"                                   | 100,0                               | 10,2                                    | 46,0                               | 1 700                            | 565            | 175,0                             | 1 460                            | 615            | 160,0                             |
| 300                                   | 12"                                   | 150,0                               | 5,9                                     | 38,0                               | 2 100                            | 565            | 210,0                             | 1 860                            | 615            | 190,0                             |
| 350                                   | T4"                                   | 15,0                                | 150,0                                   | 121,0                              | 760                              | 625            | 120,0                             | 520                              | 675            | 100,0                             |
| 350                                   | 14"                                   | 25,0                                | 72,0                                    | 102,0                              | 910                              | 625            | 135,0                             | 670                              | 675            | 115,0                             |
| 350                                   | 14"                                   | 50,0                                | 27,9                                    | 78,0                               | 1 200                            | 625            | 160,0                             | 960                              | 675            | 140,0                             |
| 350                                   | 14"                                   | 75,0                                | 14,2                                    | 62,0                               | 1 510                            | 625            | 185,0                             | 1 270                            | 675            | 170,0                             |
| 350                                   | 14"                                   | 100,0                               | 9,3                                     | 54,0                               | 1 760                            | 625            | 210,0                             | 1 520                            | 675            | 190,0                             |
| 350                                   | 14"                                   | 150,0                               | 5,5                                     | 44,0                               | 2 160                            | 625            | 245,0                             | 1 920                            | 675            | 225,0                             |
| 400                                   | 16"                                   | 15,0                                | 345,0                                   | 158,0                              | 860                              | 700            | 175,0                             | 580                              | 755            | 130,0                             |
| 400                                   | 16"                                   | 25,0                                | 172,0                                   | 136,0                              | 1 010                            | 700            | 190,0                             | 730                              | 755            | 145,0                             |
| 400                                   | 16"                                   | 50,0                                | 66,0                                    | 105,0                              | 1 320                            | 700            | 220,0                             | 1 040                            | 755            | 180,0                             |
| 400                                   | 16"                                   | 75,0                                | 35,7                                    | 86,0                               | 1 610                            | 700            | 250,0                             | 1 330                            | 755            | 210,0                             |
| 400                                   | 16"                                   | 100,0                               | 23,7                                    | 75,0                               | 1 860                            | 700            | 275,0                             | 1 580                            | 755            | 235,0                             |
| 400                                   | 16"                                   | 150,0                               | 13,3                                    | 61,0                               | 2 310                            | 700            | 325,0                             | 2 030                            | 755            | 280,0                             |
| 500                                   | 20"                                   | 15,0                                | 450,0                                   | 269,0                              | 920                              | 835            | 240,0                             | 640                              | 900            | 195,0                             |
| 500                                   | 20"                                   | 25,0                                | 241,0                                   | 234,0                              | 1 070                            | 835            | 260,0                             | 790                              | 900            | 215,0                             |
| 500                                   | 20"                                   | 50,0                                | 85,0                                    | 176,0                              | 1 450                            | 835            | 310,0                             | 1 170                            | 900            | 265,0                             |
| 500                                   | 20"                                   | 75,0                                | 43,3                                    | 141,0                              | 1 820                            | 835            | 360,0                             | 1 540                            | 900            | 310,0                             |
| 500                                   | 20"                                   | 100,0                               | 26,8                                    | 119,0                              | 2 170                            | 835            | 410,0                             | 1 890                            | 900            | 360,0                             |
| 500                                   | 20"                                   | 150,0                               | 15,8                                    | 98,0                               | 2 670                            | 835            | 475,0                             | 2 390                            | 900            | 425,0                             |
| 600                                   | 24"                                   | 15,0                                | 760,0                                   | 392,0                              | 970                              | 960            | 330,0                             | 690                              | 1 030          | 260,0                             |
| 600                                   | 24"                                   | 25,0                                | 386,0                                   | 335,0                              | 1 150                            | 960            | 360,0                             | 870                              | 1 030          | 290,0                             |
| 600                                   | 24"                                   | 50,0                                | 132,0                                   | 248,0                              | 1 590                            | 960            | 430,0                             | 1 310                            | 1 030          | 360,0                             |
| 600                                   | 24"                                   | 75,0                                | 62,0                                    | 192,0                              | 2 080                            | 960            | 510,0                             | 1 800                            | 1 030          | 440,0                             |
| 600                                   | 24"                                   | 100,0                               | 39,0                                    | 162,0                              | 2 480                            | 960            | 570,0                             | 2 200                            | 1 030          | 505,0                             |
| 600                                   | 24"                                   | 150,0                               | 22,8                                    | 132,0                              | 3 080                            | 960            | 670,0                             | 2 800                            | 1 030          | 600,0                             |

PN 10

| Menovitá svetlost'<br>Nominal diameter | Menovitá svetlost'<br>Nominal diameter | Laterálny pohyb<br>Lateral movement | Laterálna tuhosť<br>Lateral spring rate | Treći moment<br>Frictional moments | MWL                              |                |                                   | MFL                              |                |                                   |
|----------------------------------------|----------------------------------------|-------------------------------------|-----------------------------------------|------------------------------------|----------------------------------|----------------|-----------------------------------|----------------------------------|----------------|-----------------------------------|
| DN                                     | DN                                     |                                     |                                         |                                    | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
| mm                                     | inch                                   | ± mm                                | N/mm                                    | N.m/bar                            | mm                               | mm             | kg                                | mm                               | mm             | kg                                |
| 700                                    | 28"                                    | 15,0                                | 899,0                                   | 566,0                              | 1 030                            | 1 105          | 465,0                             | 750                              | 1 190          | 340,0                             |
| 700                                    | 28"                                    | 25,0                                | 426,0                                   | 476,0                              | 1 250                            | 1 105          | 510,0                             | 970                              | 1 190          | 385,0                             |
| 700                                    | 28"                                    | 50,0                                | 134,0                                   | 340,0                              | 1 800                            | 1 105          | 620,0                             | 1 520                            | 1 190          | 490,0                             |
| 700                                    | 28"                                    | 75,0                                | 77,0                                    | 282,0                              | 2 200                            | 1 105          | 700,0                             | 1 920                            | 1 190          | 570,0                             |
| 700                                    | 28"                                    | 100,0                               | 49,6                                    | 241,0                              | 2 600                            | 1 105          | 780,0                             | 2 320                            | 1 190          | 650,0                             |
| 700                                    | 28"                                    | 150,0                               | 25,6                                    | 186,0                              | 3 400                            | 1 105          | 935,0                             | 3 120                            | 1 190          | 810,0                             |
| 800                                    | 32"                                    | 15,0                                | 1 084,0                                 | 726,0                              | 1 110                            | 1 240          | 630,0                             | 830                              | 1 330          | 445,0                             |
| 800                                    | 32"                                    | 25,0                                | 506,0                                   | 606,0                              | 1 360                            | 1 240          | 685,0                             | 1 080                            | 1 330          | 505,0                             |
| 800                                    | 32"                                    | 50,0                                | 170,0                                   | 440,0                              | 1 930                            | 1 240          | 815,0                             | 1 650                            | 1 330          | 635,0                             |
| 800                                    | 32"                                    | 75,0                                | 91,0                                    | 355,0                              | 2 430                            | 1 240          | 930,0                             | 2 150                            | 1 330          | 745,0                             |
| 800                                    | 32"                                    | 100,0                               | 56,0                                    | 297,0                              | 2 930                            | 1 240          | 1 045,0                           | 2 650                            | 1 330          | 860,0                             |
| 800                                    | 32"                                    | 150,0                               | 31,3                                    | 236,0                              | 3 730                            | 1 240          | 1 225,0                           | 3 450                            | 1 330          | 1 040,0                           |
| 900                                    | 36"                                    | 15,0                                | 1 085,0                                 | 1 026,0                            | 1 620                            | 1 375          | 725,0                             | 1 560                            | 1 480          | 775,0                             |
| 900                                    | 36"                                    | 25,0                                | 545,0                                   | 860,0                              | 1 870                            | 1 375          | 790,0                             | 1 810                            | 1 480          | 840,0                             |
| 900                                    | 36"                                    | 50,0                                | 165,0                                   | 592,0                              | 2 570                            | 1 375          | 975,0                             | 2 510                            | 1 480          | 1 025,0                           |
| 900                                    | 36"                                    | 75,0                                | 94,0                                    | 84,0                               | 3 070                            | 1 375          | 1 105,0                           | 3 010                            | 1 480          | 1 155,0                           |
| 900                                    | 36"                                    | 100,0                               | 56,0                                    | 98,0                               | 3 670                            | 1 375          | 1 265,0                           | 3 610                            | 1 480          | 1 310,0                           |
| 900                                    | 36"                                    | 150,0                               | 31,4                                    | 13,0                               | 4 570                            | 1 375          | 1 500,0                           | 4 510                            | 1 480          | 1 545,0                           |
| 1000                                   | 40"                                    | 15,0                                | 1 507,0                                 | 1 046,0                            | 1 690                            | 1 430          | 1 295,0                           | 1 630                            | 1 525          | 1 580,0                           |
| 1000                                   | 40"                                    | 25,0                                | 708,0                                   | 851,0                              | 1 980                            | 1 430          | 1 395,0                           | 1 920                            | 1 525          | 1 680,0                           |
| 1000                                   | 40"                                    | 50,0                                | 217,0                                   | 577,0                              | 2 720                            | 1 430          | 1 655,0                           | 2 660                            | 1 525          | 1 940,0                           |
| 1000                                   | 40"                                    | 75,0                                | 117,0                                   | 457,0                              | 3 320                            | 1 430          | 1 860,0                           | 3 260                            | 1 525          | 2 150,0                           |
| 1000                                   | 40"                                    | 100,0                               | 78,0                                    | 390,0                              | 3 820                            | 1 430          | 2 035,0                           | 3 760                            | 1 525          | 2 320,0                           |
| 1000                                   | 40"                                    | 150,0                               | 40,1                                    | 295,0                              | 4 920                            | 1 430          | 2 420,0                           | 4 860                            | 1 525          | 2 705,0                           |
| 1100                                   | 44"                                    | 15,0                                | 1 573,0                                 | 1 288,0                            | 1 780                            | 1 545          | 1 500,0                           | 1 720                            | 1 660          | 1 895,0                           |
| 1100                                   | 44"                                    | 25,0                                | 714,0                                   | 1 033,0                            | 2 110                            | 1 545          | 1 630,0                           | 2 050                            | 1 660          | 2 020,0                           |
| 1100                                   | 44"                                    | 50,0                                | 222,0                                   | 697,0                              | 2 910                            | 1 545          | 1 935,0                           | 2 850                            | 1 660          | 2 330,0                           |
| 1100                                   | 44"                                    | 75,0                                | 120,0                                   | 552,0                              | 3 560                            | 1 545          | 2 185,0                           | 3 500                            | 1 660          | 2 580,0                           |
| 1100                                   | 44"                                    | 100,0                               | 83,0                                    | 475,0                              | 4 060                            | 1 545          | 2 380,0                           | 4 000                            | 1 660          | 2 775,0                           |
| 1100                                   | 44"                                    | 150,0                               | 40,0                                    | 350,0                              | 5 360                            | 1 545          | 2 880,0                           | 5 300                            | 1 660          | 3 275,0                           |
| 1200                                   | 48"                                    | 15,0                                | 1 519,0                                 | 1 561,0                            | 1 860                            | 1 660          | 1 695,0                           | 1 810                            | 1 790          | 2 200,0                           |
| 1200                                   | 48"                                    | 25,0                                | 701,0                                   | 1 254,0                            | 2 200                            | 1 660          | 1 835,0                           | 2 150                            | 1 790          | 2 345,0                           |
| 1200                                   | 48"                                    | 50,0                                | 205,0                                   | 825,0                              | 3 100                            | 1 660          | 2 215,0                           | 3 050                            | 1 790          | 2 725,0                           |
| 1200                                   | 48"                                    | 75,0                                | 111,0                                   | 652,0                              | 3 800                            | 1 660          | 2 510,0                           | 3 750                            | 1 790          | 3 020,0                           |
| 1200                                   | 48"                                    | 100,0                               | 74,0                                    | 552,0                              | 4 400                            | 1 660          | 2 765,0                           | 4 350                            | 1 790          | 3 275,0                           |
| 1200                                   | 48"                                    | 150,0                               | 36,1                                    | 407,0                              | 5 800                            | 1 660          | 3 355,0                           | 5 750                            | 1 790          | 3 865,0                           |
| 1300                                   | 52"                                    | 15,0                                | 1 998,0                                 | 1 942,0                            | 1 980                            | 1 790          | 2 005,0                           | 1 930                            | 1 930          | 2 650,0                           |
| 1300                                   | 52"                                    | 25,0                                | 932,0                                   | 1 570,0                            | 2 320                            | 1 790          | 2 165,0                           | 2 270                            | 1 930          | 2 805,0                           |
| 1300                                   | 52"                                    | 50,0                                | 275,0                                   | 1 042,0                            | 3 220                            | 1 790          | 2 580,0                           | 3 170                            | 1 930          | 3 220,0                           |
| 1300                                   | 52"                                    | 75,0                                | 149,0                                   | 826,0                              | 3 920                            | 1 790          | 2 905,0                           | 3 870                            | 1 930          | 3 545,0                           |
| 1300                                   | 52"                                    | 100,0                               | 99,0                                    | 701,0                              | 4 520                            | 1 790          | 3 180,0                           | 4 470                            | 1 930          | 3 825,0                           |
| 1300                                   | 52"                                    | 150,0                               | 48,7                                    | 519,0                              | 5 920                            | 1 790          | 3 830,0                           | 5 870                            | 1 930          | 4 470,0                           |
| 1400                                   | 56"                                    | 15,0                                | 3 591,0                                 | 1 899,0                            | 2 170                            | 1 855          | 2 595,0                           | 2 120                            | 1 990          | 3 145,0                           |
| 1400                                   | 56"                                    | 25,0                                | 1 709,0                                 | 1 533,0                            | 2 520                            | 1 855          | 2 770,0                           | 2 470                            | 1 990          | 3 320,0                           |
| 1400                                   | 56"                                    | 50,0                                | 527,0                                   | 1 025,0                            | 3 420                            | 1 855          | 3 220,0                           | 3 370                            | 1 990          | 3 770,0                           |
| 1400                                   | 56"                                    | 75,0                                | 291,0                                   | 815,0                              | 4 120                            | 1 855          | 3 575,0                           | 4 070                            | 1 990          | 4 120,0                           |
| 1400                                   | 56"                                    | 100,0                               | 195,0                                   | 693,0                              | 4 720                            | 1 855          | 3 875,0                           | 4 670                            | 1 990          | 4 420,0                           |
| 1400                                   | 56"                                    | 150,0                               | 95,0                                    | 509,0                              | 6 170                            | 1 855          | 4 600,0                           | 6 120                            | 1 990          | 5 150,0                           |
| 1500                                   | 60"                                    | 15,0                                | 3 867,0                                 | 2 209,0                            | 2 280                            | 1 980          | 3 040,0                           | 2 230                            | 2 130          | 3 745,0                           |
| 1500                                   | 60"                                    | 25,0                                | 2 011,0                                 | 1 828,0                            | 2 600                            | 1 980          | 3 215,0                           | 2 550                            | 2 130          | 3 915,0                           |
| 1500                                   | 60"                                    | 50,0                                | 612,0                                   | 1 217,0                            | 3 530                            | 1 980          | 3 720,0                           | 3 480                            | 2 130          | 4 420,0                           |
| 1500                                   | 60"                                    | 75,0                                | 342,0                                   | 973,0                              | 4 230                            | 1 980          | 4 095,0                           | 4 180                            | 2 130          | 4 800,0                           |
| 1500                                   | 60"                                    | 100,0                               | 218,0                                   | 810,0                              | 4 930                            | 1 980          | 4 475,0                           | 4 880                            | 2 130          | 5 180,0                           |
| 1500                                   | 60"                                    | 150,0                               | 106,0                                   | 596,0                              | 6 430                            | 1 980          | 5 290,0                           | 6 380                            | 2 130          | 5 990,0                           |

PN 10

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Laterálny pohyb<br>Lateral movement | Laterálna tuhosť<br>Lateral spring rate | Treći moment<br>Frictional moments |
|---------------------------------------|---------------------------------------|-------------------------------------|-----------------------------------------|------------------------------------|
| DN                                    | DN                                    | ± mm                                | N/mm                                    | N.m/bar                            |
| mm                                    | inch                                  |                                     |                                         |                                    |
| 1600                                  | 64"                                   | 15,0                                | 4 143,0                                 | 2 553,0                            |
| 1600                                  | 64"                                   | 25,0                                | 2 301,0                                 | 2 156,0                            |
| 1600                                  | 64"                                   | 50,0                                | 671,0                                   | 1 419,0                            |
| 1600                                  | 64"                                   | 75,0                                | 358,0                                   | 1 115,0                            |
| 1600                                  | 64"                                   | 100,0                               | 222,0                                   | 918,0                              |
| 1600                                  | 64"                                   | 150,0                               | 110,0                                   | 678,0                              |
|                                       |                                       |                                     |                                         |                                    |
| 1800                                  | 72"                                   | 15,0                                | 5 196,0                                 | 3 293,0                            |
| 1800                                  | 72"                                   | 25,0                                | 2 535,0                                 | 2 666,0                            |
| 1800                                  | 72"                                   | 50,0                                | 788,0                                   | 1 778,0                            |
| 1800                                  | 72"                                   | 75,0                                | 414,0                                   | 1 383,0                            |
| 1800                                  | 72"                                   | 100,0                               | 255,0                                   | 1 132,0                            |
| 1800                                  | 72"                                   | 150,0                               | 138,0                                   | 869,0                              |
|                                       |                                       |                                     |                                         |                                    |
| 2000                                  | 80"                                   | 15,0                                | 6 354,0                                 | 3 417,0                            |
| 2000                                  | 80"                                   | 25,0                                | 2 778,0                                 | 2 649,0                            |
| 2000                                  | 80"                                   | 50,0                                | 844,0                                   | 1 720,0                            |
| 2000                                  | 80"                                   | 75,0                                | 447,0                                   | 1 332,0                            |
| 2000                                  | 80"                                   | 100,0                               | 276,0                                   | 1 086,0                            |
| 2000                                  | 80"                                   | 150,0                               | 208,0                                   | 828,0                              |
|                                       |                                       |                                     |                                         |                                    |
| 2200                                  | 88"                                   | 15,0                                | 7 649,0                                 | 4 278,0                            |
| 2200                                  | 88"                                   | 25,0                                | 3 455,0                                 | 3 346,0                            |
| 2200                                  | 88"                                   | 50,0                                | 1 041,0                                 | 2 167,0                            |
| 2200                                  | 88"                                   | 75,0                                | 562,0                                   | 1 690,0                            |
| 2200                                  | 88"                                   | 100,0                               | 351,0                                   | 1 385,0                            |
| 2200                                  | 88"                                   | 150,0                               | 185,0                                   | 1 046,0                            |
|                                       |                                       |                                     |                                         |                                    |
| 2400                                  | 96"                                   | 15,0                                | 7 416,0                                 | 5 199,0                            |
| 2400                                  | 96"                                   | 25,0                                | 3 453,0                                 | 4 111,0                            |
| 2400                                  | 96"                                   | 50,0                                | 1 034,0                                 | 2 663,0                            |
| 2400                                  | 96"                                   | 75,0                                | 569,0                                   | 2 095,0                            |
| 2400                                  | 96"                                   | 100,0                               | 359,0                                   | 1 727,0                            |
| 2400                                  | 96"                                   | 150,0                               | 191,0                                   | 1 312,0                            |



## MWL

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 2 410                            | 2 100          | 3 595,0                           |
| 2 710                            | 2 100          | 3 775,0                           |
| 3 710                            | 2 100          | 4 360,0                           |
| 4 510                            | 2 100          | 4 830,0                           |
| 5 310                            | 2 100          | 5 300,0                           |
| 6 910                            | 2 100          | 6 240,0                           |
|                                  |                |                                   |
| 2 540                            | 2 420          | 5 425,0                           |
| 2 940                            | 2 420          | 5 775,0                           |
| 3 990                            | 2 420          | 6 705,0                           |
| 4 890                            | 2 420          | 7 500,0                           |
| 5 790                            | 2 420          | 8 295,0                           |
| 7 290                            | 2 420          | 9 615,0                           |
|                                  |                |                                   |
| 2 670                            | 2 520          | 6 810,0                           |
| 3 170                            | 2 520          | 7 300,0                           |
| 4 370                            | 2 520          | 8 475,0                           |
| 5 370                            | 2 520          | 9 455,0                           |
| 6 370                            | 2 520          | 10 435,0                          |
| 8 080                            | 2 520          | 12 210,0                          |
|                                  |                |                                   |
| 2 820                            | 2 740          | 5 900,0                           |
| 3 320                            | 2 740          | 6 450,0                           |
| 4 570                            | 2 740          | 7 810,0                           |
| 5 570                            | 2 740          | 8 900,0                           |
| 6 570                            | 2 740          | 9 990,0                           |
| 8 370                            | 2 740          | 11 955,0                          |
|                                  |                |                                   |
| 3 010                            | 3 000          | 7 435,0                           |
| 3 510                            | 3 000          | 8 040,0                           |
| 4 810                            | 3 000          | 9 605,0                           |
| 5 810                            | 3 000          | 10 805,0                          |
| 6 810                            | 3 000          | 12 010,0                          |
| 8 610                            | 3 000          | 14 175,0                          |



## MFL

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 2 360                            | 2 280          | 4 295,0                           |
| 2 660                            | 2 280          | 4 470,0                           |
| 3 660                            | 2 280          | 5 055,0                           |
| 4 460                            | 2 280          | 5 525,0                           |
| 5 260                            | 2 280          | 5 995,0                           |
| 6 860                            | 2 280          | 6 935,0                           |
|                                  |                |                                   |
| 2 500                            | 2 505          | 6 080,0                           |
| 2 900                            | 2 505          | 6 430,0                           |
| 3 950                            | 2 505          | 7 360,0                           |
| 4 850                            | 2 505          | 8 155,0                           |
| 5 750                            | 2 51           | 8 950,0                           |
| 7 250                            | 2 505          | 10 275,0                          |
|                                  |                |                                   |
| 2 630                            | 2 660          | 7 635,0                           |
| 3 130                            | 2 660          | 8 125,0                           |
| 4 330                            | 2 660          | 9 300,0                           |
| 5 330                            | 2 660          | 10 280,0                          |
| 6 330                            | 2 660          | 11 260,0                          |
| 8 040                            | 2 660          | 13 040,0                          |
|                                  |                |                                   |
| 2 790                            | 2 915          | 7 280,0                           |
| 3 290                            | 2 915          | 7 825,0                           |
| 4 540                            | 2 915          | 9 190,0                           |
| 5 540                            | 2 915          | 10 280,0                          |
| 6 540                            | 2 915          | 11 370,0                          |
| 8 340                            | 2 915          | 13 330,0                          |
|                                  |                |                                   |
| 2 980                            | 3 150          | 8 735,0                           |
| 3 480                            | 3 150          | 9 335,0                           |
| 4 780                            | 3 150          | 10 900,0                          |
| 5 780                            | 3 150          | 12 105,0                          |
| 6 780                            | 3 150          | 13 310,0                          |
| 8 580                            | 3 150          | 15 475,0                          |

## PN 16

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Laterálny pohyb<br>Lateral movement | Laterálna tuhosť<br>Lateral spring rate | Treći moment<br>Frictional moments | MWL                              |                |                                   | MFL                              |                |                                   |
|---------------------------------------|---------------------------------------|-------------------------------------|-----------------------------------------|------------------------------------|----------------------------------|----------------|-----------------------------------|----------------------------------|----------------|-----------------------------------|
| DN                                    | DN                                    |                                     |                                         |                                    | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
| mm                                    | inch                                  | ± mm                                | N/mm                                    | N.m/bar                            | mm                               | mm             | kg                                | mm                               | mm             | kg                                |
| 32                                    | 1 ¼"                                  | 15,0                                | 4,1                                     | 2,8                                | 360                              | 220            | 7,2                               | 180                              | 250            | 7,2                               |
| 32                                    | 1 ¼"                                  | 25,0                                | 2,0                                     | 2,5                                | 400                              | 220            | 7,5                               | 220                              | 250            | 7,4                               |
| 32                                    | 1 ¼"                                  | 50,0                                | 0,6                                     | 2,0                                | 520                              | 220            | 8,3                               | 340                              | 250            | 8,2                               |
| 32                                    | 1 ¼"                                  | 75,0                                | 0,4                                     | 1,8                                | 560                              | 220            | 8,5                               | 380                              | 250            | 8,5                               |
| 32                                    | 1 ¼"                                  | 100,0                               | 0,2                                     | 1,5                                | 670                              | 220            | 9,2                               | 490                              | 250            | 9,2                               |
| 32                                    | 1 ¼"                                  | 150,0                               | 0,1                                     | 1,3                                | 820                              | 220            | 10,0                              | 640                              | 250            | 10,0                              |
| 40                                    | 1 ½"                                  | 15,0                                | 3,7                                     | 3,1                                | 400                              | 230            | 9,9                               | 220                              | 260            | 8,0                               |
| 40                                    | 1 ½"                                  | 25,0                                | 2,7                                     | 3,0                                | 420                              | 230            | 10,0                              | 240                              | 260            | 8,2                               |
| 40                                    | 1 ½"                                  | 50,0                                | 0,7                                     | 2,3                                | 550                              | 230            | 11,0                              | 370                              | 260            | 9,1                               |
| 40                                    | 1 ½"                                  | 75,0                                | 0,4                                     | 2,0                                | 640                              | 230            | 12,0                              | 460                              | 260            | 9,8                               |
| 40                                    | 1 ½"                                  | 100,0                               | 0,3                                     | 1,8                                | 720                              | 230            | 12,0                              | 540                              | 260            | 10,0                              |
| 40                                    | 1 ½"                                  | 150,0                               | 0,2                                     | 1,5                                | 840                              | 230            | 13,0                              | 660                              | 260            | 11,0                              |
| 50                                    | 2"                                    | 15,0                                | 10,5                                    | 5,1                                | 410                              | 245            | 12,0                              | 230                              | 275            | 10,0                              |
| 50                                    | 2"                                    | 25,0                                | 6,2                                     | 4,7                                | 450                              | 245            | 12,0                              | 270                              | 275            | 11,0                              |
| 50                                    | 2"                                    | 50,0                                | 15,0                                    | 3,4                                | 630                              | 245            | 14,0                              | 450                              | 275            | 12,0                              |
| 50                                    | 2"                                    | 75,0                                | 0,9                                     | 2,9                                | 730                              | 245            | 14,0                              | 550                              | 275            | 13,0                              |
| 50                                    | 2"                                    | 100,0                               | 0,6                                     | 2,6                                | 830                              | 245            | 15,0                              | 650                              | 275            | 14,0                              |
| 50                                    | 2"                                    | 150,0                               | 0,3                                     | 2,1                                | 1 030                            | 245            | 17,0                              | 850                              | 275            | 16,0                              |
| 65                                    | 2 ½"                                  | 15,0                                | 9,4                                     | 7,1                                | 420                              | 265            | 14,0                              | 240                              | 295            | 12,0                              |
| 65                                    | 2 ½"                                  | 25,0                                | 4,1                                     | 6,2                                | 490                              | 265            | 15,0                              | 310                              | 295            | 13,0                              |
| 65                                    | 2 ½"                                  | 50,0                                | 1,4                                     | 4,8                                | 640                              | 265            | 17,0                              | 460                              | 295            | 15,0                              |
| 65                                    | 2 ½"                                  | 75,0                                | 0,7                                     | 3,9                                | 790                              | 265            | 19,0                              | 610                              | 295            | 17,0                              |
| 65                                    | 2 ½"                                  | 100,0                               | 0,4                                     | 3,3                                | 940                              | 265            | 21,0                              | 760                              | 295            | 18,0                              |
| 65                                    | 2 ½"                                  | 150,0                               | 0,4                                     | 2,7                                | 1 140                            | 265            | 23,0                              | 960                              | 295            | 21,0                              |
| 80                                    | 3"                                    | 15,0                                | 13,6                                    | 9,7                                | 450                              | 280            | 17,0                              | 270                              | 310            | 15,0                              |
| 80                                    | 3"                                    | 25,0                                | 6,7                                     | 8,4                                | 520                              | 280            | 18,0                              | 340                              | 310            | 17,0                              |
| 80                                    | 3"                                    | 50,0                                | 2,3                                     | 6,4                                | 690                              | 280            | 21,0                              | 510                              | 310            | 19,0                              |
| 80                                    | 3"                                    | 75,0                                | 12,0                                    | 5,2                                | 850                              | 280            | 23,0                              | 670                              | 310            | 21,0                              |
| 80                                    | 3"                                    | 100,0                               | 0,8                                     | 4,7                                | 950                              | 280            | 25,0                              | 770                              | 310            | 23,0                              |
| 80                                    | 3"                                    | 150,0                               | 0,4                                     | 3,7                                | 1 200                            | 280            | 28,0                              | 1 020                            | 310            | 27,0                              |
| 100                                   | 4"                                    | 15,0                                | 31,8                                    | 15,0                               | 580                              | 320            | 28,0                              | 340                              | 360            | 21,0                              |
| 100                                   | 4"                                    | 25,0                                | 18,9                                    | 14,0                               | 640                              | 320            | 29,0                              | 400                              | 360            | 23,0                              |
| 100                                   | 4"                                    | 50,0                                | 6,3                                     | 11,0                               | 830                              | 320            | 33,0                              | 590                              | 360            | 27,0                              |
| 100                                   | 4"                                    | 75,0                                | 4,2                                     | 9,6                                | 930                              | 320            | 35,0                              | 690                              | 360            | 29,0                              |
| 100                                   | 4"                                    | 100,0                               | 2,4                                     | 8,1                                | 1 110                            | 320            | 39,0                              | 870                              | 360            | 32,0                              |
| 100                                   | 4"                                    | 150,0                               | 1,3                                     | 6,6                                | 1 360                            | 320            | 44,0                              | 1 120                            | 360            | 38,0                              |
| 125                                   | 5"                                    | 15,0                                | 92,0                                    | 21,0                               | 610                              | 350            | 34,0                              | 370                              | 390            | 28,0                              |
| 125                                   | 5"                                    | 25,0                                | 66,0                                    | 20,0                               | 650                              | 350            | 35,0                              | 410                              | 390            | 29,0                              |
| 125                                   | 5"                                    | 50,0                                | 22,0                                    | 16,0                               | 840                              | 350            | 40,0                              | 600                              | 390            | 34,0                              |
| 125                                   | 5"                                    | 75,0                                | 12,3                                    | 13,0                               | 990                              | 350            | 44,0                              | 750                              | 390            | 38,0                              |
| 125                                   | 5"                                    | 100,0                               | 7,7                                     | 11,0                               | 1 150                            | 350            | 49,0                              | 910                              | 390            | 42,0                              |
| 125                                   | 5"                                    | 150,0                               | 4,4                                     | 9,5                                | 1 390                            | 350            | 55,0                              | 1 150                            | 390            | 48,0                              |
| 150                                   | 6"                                    | 15,0                                | 160,0                                   | 34,0                               | 620                              | 405            | 46,0                              | 380                              | 455            | 37,0                              |
| 150                                   | 6"                                    | 25,0                                | 89,0                                    | 31,0                               | 700                              | 405            | 49,0                              | 460                              | 455            | 40,0                              |
| 150                                   | 6"                                    | 50,0                                | 32,5                                    | 24,0                               | 900                              | 405            | 56,0                              | 660                              | 455            | 47,0                              |
| 150                                   | 6"                                    | 75,0                                | 19,3                                    | 21,0                               | 1 050                            | 405            | 60,0                              | 810                              | 455            | 53,0                              |
| 150                                   | 6"                                    | 100,0                               | 11,3                                    | 18,0                               | 1 250                            | 405            | 70,0                              | 1 010                            | 455            | 60,0                              |
| 150                                   | 6"                                    | 150,0                               | 6,8                                     | 15,0                               | 1 500                            | 405            | 80,0                              | 1 260                            | 455            | 70,0                              |
| 200                                   | 8"                                    | 15,0                                | 187,0                                   | 55,0                               | 650                              | 460            | 65,0                              | 410                              | 510            | 51,0                              |
| 200                                   | 8"                                    | 25,0                                | 79,0                                    | 46,0                               | 780                              | 460            | 75,0                              | 540                              | 510            | 57,0                              |
| 200                                   | 8"                                    | 50,0                                | 27,7                                    | 36,0                               | 1 030                            | 460            | 85,0                              | 790                              | 510            | 70,0                              |
| 200                                   | 8"                                    | 75,0                                | 15,7                                    | 30,0                               | 1 230                            | 460            | 95,0                              | 990                              | 510            | 80,0                              |
| 200                                   | 8"                                    | 100,0                               | 10,1                                    | 26,0                               | 1 430                            | 460            | 105,0                             | 1 190                            | 510            | 90,0                              |
| 200                                   | 8"                                    | 150,0                               | 5,2                                     | 20,0                               | 1 830                            | 460            | 125,0                             | 1 590                            | 510            | 110,0                             |

## PN 16

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Laterálny pohyb<br>Lateral movement | Laterálna tuhosť<br>Lateral spring rate | Treći moment<br>Frictional moments | MWL                              |                |                                   | MFL                              |                |                                   |
|---------------------------------------|---------------------------------------|-------------------------------------|-----------------------------------------|------------------------------------|----------------------------------|----------------|-----------------------------------|----------------------------------|----------------|-----------------------------------|
| DN                                    | DN                                    |                                     |                                         |                                    | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
| mm                                    | inch                                  | ± mm                                | N/mm                                    | N.m/bar                            | mm                               | mm             | kg                                | mm                               | mm             | kg                                |
| 250                                   | 10"                                   | 15,0                                | 222,0                                   | 87,0                               | 690                              | 540            | 90,0                              | 450                              | 595            | 75,0                              |
| 250                                   | 10"                                   | 25,0                                | 93,0                                    | 72,0                               | 840                              | 540            | 100,0                             | 600                              | 595            | 85,0                              |
| 250                                   | 10"                                   | 50,0                                | 36,8                                    | 57,0                               | 1 090                            | 540            | 120,0                             | 850                              | 595            | 100,0                             |
| 250                                   | 10"                                   | 75,0                                | 19,5                                    | 46,0                               | 1 340                            | 540            | 135,0                             | 1 100                            | 595            | 120,0                             |
| 250                                   | 10"                                   | 100,0                               | 13,1                                    | 41,0                               | 1 540                            | 540            | 150,0                             | 1 300                            | 595            | 130,0                             |
| 250                                   | 10"                                   | 150,0                               | 7,1                                     | 33,0                               | 1 940                            | 540            | 180,0                             | 1 700                            | 595            | 160,0                             |
| 300                                   | 12"                                   | 15,0                                | 242,0                                   | 123,0                              | 740                              | 610            | 125,0                             | 500                              | 670            | 95,0                              |
| 300                                   | 12"                                   | 25,0                                | 111,0                                   | 104,0                              | 890                              | 610            | 135,0                             | 650                              | 670            | 110,0                             |
| 300                                   | 12"                                   | 50,0                                | 43,8                                    | 81,0                               | 1 160                            | 610            | 160,0                             | 920                              | 670            | 130,0                             |
| 300                                   | 12"                                   | 75,0                                | 21,9                                    | 65,0                               | 1 460                            | 610            | 185,0                             | 1 220                            | 670            | 160,0                             |
| 300                                   | 12"                                   | 100,0                               | 14,2                                    | 56,0                               | 1 710                            | 610            | 210,0                             | 1 470                            | 670            | 180,0                             |
| 300                                   | 12"                                   | 150,0                               | 8,2                                     | 46,0                               | 2 110                            | 610            | 240,0                             | 1 870                            | 670            | 215,0                             |
| 350                                   | 14"                                   | 15,0                                | 204,0                                   | 151,0                              | 790                              | 685            | 170,0                             | 550                              | 750            | 130,0                             |
| 350                                   | 14"                                   | 25,0                                | 98,0                                    | 129,0                              | 940                              | 685            | 180,0                             | 700                              | 750            | 140,0                             |
| 350                                   | 14"                                   | 50,0                                | 38,5                                    | 101,0                              | 1 230                            | 685            | 210,0                             | 990                              | 750            | 170,0                             |
| 350                                   | 14"                                   | 75,0                                | 19,6                                    | 82,0                               | 1 540                            | 685            | 240,0                             | 1 300                            | 750            | 200,0                             |
| 350                                   | 14"                                   | 100,0                               | 12,9                                    | 71,0                               | 1 790                            | 685            | 265,0                             | 1 550                            | 750            | 225,0                             |
| 350                                   | 14"                                   | 150,0                               | 7,7                                     | 58,0                               | 2 190                            | 685            | 305,0                             | 1 950                            | 750            | 265,0                             |
| 400                                   | 16"                                   | 15,0                                | 504,0                                   | 194,0                              | 890                              | 760            | 240,0                             | 610                              | 830            | 170,0                             |
| 400                                   | 16"                                   | 25,0                                | 253,0                                   | 168,0                              | 1 040                            | 760            | 260,0                             | 760                              | 830            | 185,0                             |
| 400                                   | 16"                                   | 50,0                                | 98,0                                    | 132,0                              | 1 350                            | 760            | 295,0                             | 1 070                            | 830            | 220,0                             |
| 400                                   | 16"                                   | 75,0                                | 53,0                                    | 110,0                              | 1 640                            | 760            | 325,0                             | 1 360                            | 830            | 255,0                             |
| 400                                   | 16"                                   | 100,0                               | 35,5                                    | 96,0                               | 1 890                            | 760            | 355,0                             | 1 610                            | 830            | 280,0                             |
| 400                                   | 16"                                   | 150,0                               | 20,0                                    | 79,0                               | 2 340                            | 760            | 405,0                             | 2 060                            | 830            | 330,0                             |
| 500                                   | 20"                                   | 15,0                                | 660,0                                   | 296,0                              | 960                              | 910            | 380,0                             | 680                              | 990            | 265,0                             |
| 500                                   | 20"                                   | 25,0                                | 356,0                                   | 260,0                              | 1 110                            | 910            | 400,0                             | 830                              | 990            | 285,0                             |
| 500                                   | 20"                                   | 50,0                                | 126,0                                   | 198,0                              | 1 490                            | 910            | 450,0                             | 1 210                            | 990            | 335,0                             |
| 500                                   | 20"                                   | 75,0                                | 65,0                                    | 161,0                              | 1 860                            | 910            | 500,0                             | 1 580                            | 990            | 390,0                             |
| 500                                   | 20"                                   | 100,0                               | 40,2                                    | 137,0                              | 2 210                            | 910            | 550,0                             | 1 930                            | 990            | 435,0                             |
| 500                                   | 20"                                   | 150,0                               | 23,7                                    | 113,0                              | 2 710                            | 910            | 620,0                             | 2 430                            | 990            | 505,0                             |
| 600                                   | 24"                                   | 15,0                                | 833,0                                   | 447,0                              | 1 020                            | 1 065          | 550,0                             | 740                              | 1 155          | 370,0                             |
| 600                                   | 24"                                   | 25,0                                | 426,0                                   | 387,0                              | 1 200                            | 1 065          | 580,0                             | 920                              | 1 155          | 400,0                             |
| 600                                   | 24"                                   | 50,0                                | 147,0                                   | 292,0                              | 1 640                            | 1 065          | 655,0                             | 1 360                            | 1 155          | 475,0                             |
| 600                                   | 24"                                   | 75,0                                | 69,0                                    | 229,0                              | 2 130                            | 1 065          | 735,0                             | 1 850                            | 1 155          | 560,0                             |
| 600                                   | 24"                                   | 100,0                               | 43,6                                    | 195,0                              | 2 530                            | 1 065          | 805,0                             | 2 250                            | 1 155          | 625,0                             |
| 600                                   | 24"                                   | 150,0                               | 25,5                                    | 159,0                              | 3 130                            | 1 065          | 905,0                             | 2 850                            | 1 155          | 730,0                             |
| 700                                   | 28"                                   | 15,0                                | 1 299,0                                 | 637,0                              | 1 090                            | 1 170          | 675,0                             | 810                              | 1 275          | 450,0                             |
| 700                                   | 28"                                   | 25,0                                | 623,0                                   | 543,0                              | 1 310                            | 1 170          | 725,0                             | 1 030                            | 1 275          | 495,0                             |
| 700                                   | 28"                                   | 50,0                                | 198,0                                   | 398,0                              | 1 860                            | 1 170          | 840,0                             | 1 580                            | 1 275          | 615,0                             |
| 700                                   | 28"                                   | 75,0                                | 114,0                                   | 333,0                              | 2 260                            | 1 170          | 925,0                             | 1 980                            | 1 275          | 695,0                             |
| 700                                   | 28"                                   | 100,0                               | 74,0                                    | 286,0                              | 2 660                            | 1 170          | 1 005,0                           | 2 380                            | 1 275          | 780,0                             |
| 700                                   | 28"                                   | 150,0                               | 38,3                                    | 223,0                              | 3 460                            | 1 170          | 1 175,0                           | 3 180                            | 1 275          | 950,0                             |
| 800                                   | 32"                                   | 15,0                                | 1 427,0                                 | 700,0                              | 1 160                            | 1 250          | 1 350,0                           | 880                              | 1 340          | 980,0                             |
| 800                                   | 32"                                   | 25,0                                | 670,0                                   | 588,0                              | 1 410                            | 1 250          | 1 415,0                           | 1 130                            | 1 340          | 1 040,0                           |
| 800                                   | 32"                                   | 50,0                                | 226,0                                   | 430,0                              | 1 980                            | 1 250          | 1 555,0                           | 1 700                            | 1 340          | 1 185,0                           |
| 800                                   | 32"                                   | 75,0                                | 121,0                                   | 348,0                              | 2 480                            | 1 250          | 1 685,0                           | 2 200                            | 1 340          | 1 310,0                           |
| 800                                   | 32"                                   | 100,0                               | 75,0                                    | 293,0                              | 2 980                            | 1 250          | 1 810,0                           | 2 700                            | 1 340          | 1 440,0                           |
| 800                                   | 32"                                   | 150,0                               | 41,7                                    | 2 330,0                            | 3 780                            | 1 250          | 2 010,0                           | 3 500                            | 1 340          | 1 640,0                           |
| 900                                   | 36"                                   | 15,0                                | 1 430,0                                 | 960,0                              | 1 730                            | 1 360          | 1 170,0                           | 1 680                            | 1 460          | 1 530,0                           |
| 900                                   | 36"                                   | 25,0                                | 722,0                                   | 803,0                              | 1 980                            | 1 360          | 1 240,0                           | 1 930                            | 1 460          | 1 600,0                           |
| 900                                   | 36"                                   | 50,0                                | 219,0                                   | 551,0                              | 2 680                            | 1 360          | 1 440,0                           | 2 630                            | 1 460          | 1 800,0                           |
| 900                                   | 36"                                   | 75,0                                | 125,0                                   | 451,0                              | 3 180                            | 1 360          | 1 585,0                           | 3 130                            | 1 460          | 1 940,0                           |
| 900                                   | 36"                                   | 100,0                               | 75,0                                    | 369,0                              | 3 780                            | 1 360          | 1 755,0                           | 3 730                            | 1 460          | 2 110,0                           |
| 900                                   | 36"                                   | 150,0                               | 41,9                                    | 291,0                              | 4 680                            | 1 360          | 2 010,0                           | 4 630                            | 1 460          | 2 370,0                           |

## PN 16

| Menovitá svetlost'<br>Nominal diameter | Menovitá svetlost'<br>Nominal diameter | Laterálny pohyb<br>Lateral movement | Laterálna tuhosť<br>Lateral spring rate | Treći moment<br>Frictional moments |
|----------------------------------------|----------------------------------------|-------------------------------------|-----------------------------------------|------------------------------------|
| DN                                     | DN                                     |                                     |                                         |                                    |
| mm                                     | inch                                   | ± mm                                | N/mm                                    | N.m/bar                            |
| 1000                                   | 40"                                    | 15,0                                | 1 856,0                                 | 1 229,0                            |
| 1000                                   | 40"                                    | 25,0                                | 878,0                                   | 1 010,0                            |
| 1000                                   | 40"                                    | 50,0                                | 271,0                                   | 694,0                              |
| 1000                                   | 40"                                    | 75,0                                | 146,0                                   | 554,0                              |
| 1000                                   | 40"                                    | 100,0                               | 98,0                                    | 474,0                              |
| 1000                                   | 40"                                    | 150,0                               | 50,0                                    | 360,0                              |
| 1100                                   | 44"                                    | 15,0                                | 1 940,0                                 | 1 280,0                            |
| 1100                                   | 44"                                    | 25,0                                | 885,0                                   | 1 028,0                            |
| 1100                                   | 44"                                    | 50,0                                | 277,0                                   | 696,0                              |
| 1100                                   | 44"                                    | 75,0                                | 150,0                                   | 551,0                              |
| 1100                                   | 44"                                    | 100,0                               | 103,0                                   | 475,0                              |
| 1100                                   | 44"                                    | 150,0                               | 49,9                                    | 349,0                              |
| 1200                                   | 48"                                    | 15,0                                | 1 867,0                                 | 1 648,0                            |
| 1200                                   | 48"                                    | 25,0                                | 867,0                                   | 1 331,0                            |
| 1200                                   | 48"                                    | 50,0                                | 254,0                                   | 882,0                              |
| 1200                                   | 48"                                    | 75,0                                | 138,0                                   | 698,0                              |
| 1200                                   | 48"                                    | 100,0                               | 92,0                                    | 593,0                              |
| 1200                                   | 48"                                    | 150,0                               | 45,0                                    | 438,0                              |
| 1300                                   | 52"                                    | 15,0                                | 1 658,0                                 | 2 016,0                            |
| 1300                                   | 52"                                    | 25,0                                | 926,0                                   | 1 637,0                            |
| 1300                                   | 52"                                    | 50,0                                | 274,0                                   | 1 098,0                            |
| 1300                                   | 52"                                    | 75,0                                | 149,0                                   | 874,0                              |
| 1300                                   | 52"                                    | 100,0                               | 100,0                                   | 744,0                              |
| 1300                                   | 52"                                    | 150,0                               | 48,9                                    | 552,0                              |
| 1400                                   | 56"                                    | 15,0                                | 3 577,0                                 | 1 995,0                            |
| 1400                                   | 56"                                    | 25,0                                | 1 702,0                                 | 1 615,0                            |
| 1400                                   | 56"                                    | 50,0                                | 525,0                                   | 1 083,0                            |
| 1400                                   | 56"                                    | 75,0                                | 290,0                                   | 862,0                              |
| 1400                                   | 56"                                    | 100,0                               | 195,0                                   | 734,0                              |
| 1400                                   | 56"                                    | 150,0                               | 94,0                                    | 540,0                              |
| 1500                                   | 60"                                    | 15,0                                | 3 852,0                                 | 2 063,0                            |
| 1500                                   | 60"                                    | 25,0                                | 2 004,0                                 | 1 707,0                            |
| 1500                                   | 60"                                    | 50,0                                | 610,0                                   | 1 137,0                            |
| 1500                                   | 60"                                    | 75,0                                | 341,0                                   | 909,0                              |
| 1500                                   | 60"                                    | 100,0                               | 217,0                                   | 757,0                              |
| 1500                                   | 60"                                    | 150,0                               | 106,0                                   | 557,0                              |
| 1600                                   | 64"                                    | 15,0                                | 4 128,0                                 | 2 386,0                            |
| 1600                                   | 64"                                    | 25,0                                | 2 292,0                                 | 2 010,0                            |
| 1600                                   | 64"                                    | 50,0                                | 669,0                                   | 1 318,0                            |
| 1600                                   | 64"                                    | 75,0                                | 357,0                                   | 1 033,0                            |
| 1600                                   | 64"                                    | 100,0                               | 222,0                                   | 850,0                              |
| 1600                                   | 64"                                    | 150,0                               | 109,0                                   | 627,0                              |
| 1800                                   | 72"                                    | 15,0                                | 5 179,0                                 | 3 210,0                            |
| 1800                                   | 72"                                    | 25,0                                | 2 527,0                                 | 2 611,0                            |
| 1800                                   | 72"                                    | 50,0                                | 786,0                                   | 1 752,0                            |
| 1800                                   | 72"                                    | 75,0                                | 413,0                                   | 1 367,0                            |
| 1800                                   | 72"                                    | 100,0                               | 254,0                                   | 1 120,0                            |
| 1800                                   | 72"                                    | 150,0                               | 137,0                                   | 861,0                              |
| 2000                                   | 80"                                    | 15,0                                | 10 892,0                                | 3 594,0                            |
| 2000                                   | 80"                                    | 25,0                                | 4 774,0                                 | 2 804,0                            |
| 2000                                   | 80"                                    | 50,0                                | 1 452,0                                 | 1 835,0                            |
| 2000                                   | 80"                                    | 75,0                                | 769,0                                   | 1 425,0                            |
| 2000                                   | 80"                                    | 100,0                               | 475,0                                   | 1 165,0                            |
| 2000                                   | 80"                                    | 150,0                               | 256,0                                   | 889,0                              |



## MWL

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 1 860                            | 1 490          | 1 550,0                           |
| 2 150                            | 1 490          | 1 655,0                           |
| 2 890                            | 1 490          | 1 930,0                           |
| 3 490                            | 1 490          | 2 150,0                           |
| 3 990                            | 1 490          | 2 340,0                           |
| 5 090                            | 1 490          | 2 745,0                           |
| 1 970                            | 1 565          | 1 885,0                           |
| 2 300                            | 1 565          | 2 020,0                           |
| 3 100                            | 1 565          | 2 350,0                           |
| 3 750                            | 1 565          | 2 615,0                           |
| 4 250                            | 1 565          | 2 820,0                           |
| 5 550                            | 1 565          | 3 355,0                           |
| 2 050                            | 1 700          | 2 325,0                           |
| 2 390                            | 1 700          | 2 515,0                           |
| 3 290                            | 1 700          | 3 015,0                           |
| 3 990                            | 1 700          | 3 405,0                           |
| 4 590                            | 1 700          | 3 735,0                           |
| 5 990                            | 1 700          | 4 515,0                           |
| 2 160                            | 1 830          | 2 880,0                           |
| 2 510                            | 1 830          | 3 115,0                           |
| 3 410                            | 1 830          | 3 665,0                           |
| 4 110                            | 1 830          | 4 090,0                           |
| 4 710                            | 1 830          | 4 460,0                           |
| 6 110                            | 1 830          | 5 310,0                           |
| 2 250                            | 1 890          | 3 310,0                           |
| 2 600                            | 1 890          | 3 550,0                           |
| 3 500                            | 1 890          | 4 160,0                           |
| 4 200                            | 1 890          | 4 640,0                           |
| 4 800                            | 1 890          | 5 045,0                           |
| 6 250                            | 1 890          | 6 035,0                           |
| 2 360                            | 1 985          | 4 565,0                           |
| 2 680                            | 1 985          | 4 805,0                           |
| 3 610                            | 1 985          | 5 510,0                           |
| 4 310                            | 1 985          | 6 040,0                           |
| 5 010                            | 1 985          | 6 570,0                           |
| 6 510                            | 1 985          | 7 710,0                           |
| 2 490                            | 2 100          | 5 045,0                           |
| 2 790                            | 2 100          | 5 290,0                           |
| 3 790                            | 2 100          | 6 105,0                           |
| 4 590                            | 2 100          | 6 760,0                           |
| 5 390                            | 2 100          | 7 415,0                           |
| 6 990                            | 2 100          | 8 725,0                           |
| 2 740                            | 2 400          | 7 670,0                           |
| 3 140                            | 2 400          | 8 125,0                           |
| 4 190                            | 2 400          | 9 325,0                           |
| 5 090                            | 2 400          | 10 350,0                          |
| 5 990                            | 2 400          | 11 380,0                          |
| 7 490                            | 2 400          | 13 090,0                          |
| 3 000                            | 2 580          | 10 090,0                          |
| 3 500                            | 2 580          | 10 730,0                          |
| 4 700                            | 2 580          | 12 260,0                          |
| 5 700                            | 2 580          | 13 540,0                          |
| 6 700                            | 2 580          | 14 815,0                          |
| 8 400                            | 2 580          | 16 985,0                          |



## MFL

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 1 820                            | 1 620          | 2 140,0                           |
| 2 110                            | 1 620          | 2 245,0                           |
| 2 850                            | 1 620          | 2 520,0                           |
| 3 450                            | 1 620          | 2 745,0                           |
| 3 950                            | 1 620          | 2 930,0                           |
| 5 050                            | 1 620          | 3 335,0                           |
| 1 940                            | 1 685          | 2 550,0                           |
| 2 270                            | 1 685          | 2 685,0                           |
| 3 070                            | 1 685          | 3 015,0                           |
| 3 720                            | 1 685          | 3 280,0                           |
| 4 220                            | 1 685          | 3 485,0                           |
| 5 520                            | 1 685          | 4 020,0                           |
| 2 020                            | 1 850          | 3 260,0                           |
| 2 360                            | 1 850          | 3 450,0                           |
| 3 260                            | 1 850          | 3 950,0                           |
| 3 960                            | 1 850          | 4 340,0                           |
| 4 560                            | 1 850          | 4 675,0                           |
| 5 960                            | 1 850          | 5 455,0                           |
| 2 130                            | 1 975          | 3 750,0                           |
| 2 480                            | 1 975          | 3 985,0                           |
| 3 380                            | 1 975          | 4 535,0                           |
| 4 080                            | 1 975          | 4 965,0                           |
| 4 680                            | 1 975          | 5 330,0                           |
| 6 080                            | 1 975          | 6 185,0                           |
| 2 230                            | 2 020          | 4 240,0                           |
| 2 580                            | 2 020          | 4 475,0                           |
| 3 480                            | 2 020          | 5 090,0                           |
| 4 180                            | 2 020          | 5 565,0                           |
| 4 780                            | 2 020          | 5 975,0                           |
| 6 230                            | 2 020          | 6 960,0                           |
| 2 330                            | 2 125          | 5 420,0                           |
| 2 650                            | 2 125          | 5 665,0                           |
| 3 580                            | 2 125          | 6 370,0                           |
| 4 280                            | 2 125          | 6 900,0                           |
| 4 980                            | 2 125          | 7 430,0                           |
| 6 480                            | 2 125          | 8 565,0                           |
| 2 470                            | 2 265          | 6 265,0                           |
| 2 770                            | 2 265          | 6 510,0                           |
| 3 770                            | 2 265          | 7 330,0                           |
| 4 570                            | 2 265          | 7 985,0                           |
| 5 370                            | 2 265          | 8 640,0                           |
| 6 970                            | 2 265          | 9 950,0                           |
| 2 720                            | 2 520          | 8 535,0                           |
| 3 120                            | 2 520          | 8 990,0                           |
| 4 170                            | 2 520          | 10 190,0                          |
| 5 070                            | 2 520          | 11 215,0                          |
| 5 970                            | 2 520          | 12 240,0                          |
| 7 470                            | 2 520          | 13 955,0                          |
| 2 980                            | 2 710          | 11 325,0                          |
| 3 480                            | 2 710          | 11 965,0                          |
| 4 680                            | 2 710          | 13 500,0                          |
| 5 680                            | 2 710          | 14 775,0                          |
| 6 680                            | 2 710          | 16 055,0                          |
| 8 380                            | 2 710          | 18 225,0                          |

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| Menovitá veľkosť<br>Nominal diameter | Menovitá veľkosť<br>Nominal diameter | Laterálny pohyb<br>Lateral movement | Laterálna tuhosť<br>Lateral spring rate | Treći moment<br>Frictional moments | MWL                              |                |                                   | MFL                              |                |                                   |
|--------------------------------------|--------------------------------------|-------------------------------------|-----------------------------------------|------------------------------------|----------------------------------|----------------|-----------------------------------|----------------------------------|----------------|-----------------------------------|
| DN                                   | DN                                   |                                     |                                         |                                    | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
| mm                                   | inch                                 | ± mm                                | N/mm                                    | N.m/bar                            | mm                               | mm             | kg                                | mm                               | mm             | kg                                |
| 32                                   | 1 ¼"                                 | 15,0                                | 4,1                                     | 2,6                                | 390                              | 220            | 8,5                               | 210                              | 250            | 7,6                               |
| 32                                   | 1 ¼"                                 | 25,0                                | 2,3                                     | 2,4                                | 430                              | 220            | 8,8                               | 250                              | 250            | 7,8                               |
| 32                                   | 1 ¼"                                 | 50,0                                | 0,8                                     | 1,9                                | 530                              | 220            | 9,4                               | 350                              | 250            | 8,5                               |
| 32                                   | 1 ¼"                                 | 75,0                                | 0,6                                     | 1,8                                | 570                              | 220            | 9,7                               | 390                              | 250            | 8,8                               |
| 32                                   | 1 ¼"                                 | 100,0                               | 0,3                                     | 1,5                                | 680                              | 220            | 10,0                              | 500                              | 250            | 9,5                               |
| 32                                   | 1 ¼"                                 | 150,0                               | 0,1                                     | 1,2                                | 880                              | 220            | 12,0                              | 700                              | 250            | 11,0                              |
| 40                                   | 1 ½"                                 | 15,0                                | 4,0                                     | 3,0                                | 420                              | 230            | 9,6                               | 240                              | 260            | 8,5                               |
| 40                                   | 1 ½"                                 | 25,0                                | 3,0                                     | 2,8                                | 440                              | 230            | 9,7                               | 260                              | 260            | 8,6                               |
| 40                                   | 1 ½"                                 | 50,0                                | 1,1                                     | 2,3                                | 550                              | 230            | 11,0                              | 370                              | 260            | 9,4                               |
| 40                                   | 1 ½"                                 | 75,0                                | 0,6                                     | 2,0                                | 640                              | 230            | 11,0                              | 460                              | 260            | 10,0                              |
| 40                                   | 1 ½"                                 | 100,0                               | 0,4                                     | 1,8                                | 720                              | 230            | 12,0                              | 540                              | 260            | 11,0                              |
| 40                                   | 1 ½"                                 | 150,0                               | 0,2                                     | 1,4                                | 940                              | 230            | 13,0                              | 760                              | 260            | 12,0                              |
| 50                                   | 2"                                   | 15,0                                | 11,8                                    | 4,8                                | 440                              | 245            | 13,0                              | 260                              | 275            | 11,0                              |
| 50                                   | 2"                                   | 25,0                                | 6,7                                     | 4,3                                | 490                              | 245            | 14,0                              | 310                              | 275            | 11,0                              |
| 50                                   | 2"                                   | 50,0                                | 2,2                                     | 3,3                                | 640                              | 245            | 15,0                              | 460                              | 275            | 12,0                              |
| 50                                   | 2"                                   | 75,0                                | 1,3                                     | 2,9                                | 740                              | 245            | 16,0                              | 560                              | 275            | 13,0                              |
| 50                                   | 2"                                   | 100,0                               | 0,9                                     | 2,5                                | 840                              | 245            | 17,0                              | 660                              | 275            | 14,0                              |
| 50                                   | 2"                                   | 150,0                               | 0,5                                     | 2,1                                | 1 040                            | 245            | 18,0                              | 860                              | 275            | 16,0                              |
| 65                                   | 2 ½"                                 | 15,0                                | 10,6                                    | 6,8                                | 450                              | 265            | 16,0                              | 270                              | 295            | 14,0                              |
| 65                                   | 2 ½"                                 | 25,0                                | 4,7                                     | 5,8                                | 530                              | 265            | 17,0                              | 350                              | 295            | 15,0                              |
| 65                                   | 2 ½"                                 | 50,0                                | 2,1                                     | 4,8                                | 650                              | 265            | 19,0                              | 470                              | 295            | 16,0                              |
| 65                                   | 2 ½"                                 | 75,0                                | 1,0                                     | 3,9                                | 800                              | 265            | 20,0                              | 620                              | 295            | 18,0                              |
| 65                                   | 2 ½"                                 | 100,0                               | 0,6                                     | 3,3                                | 950                              | 265            | 22,0                              | 770                              | 295            | 20,0                              |
| 65                                   | 2 ½"                                 | 150,0                               | 0,4                                     | 2,7                                | 1 150                            | 265            | 25,0                              | 970                              | 295            | 22,0                              |
| 80                                   | 3"                                   | 15,0                                | 10,8                                    | 9,1                                | 480                              | 280            | 19,0                              | 300                              | 310            | 17,0                              |
| 80                                   | 3"                                   | 25,0                                | 5,3                                     | 7,9                                | 560                              | 280            | 20,0                              | 380                              | 310            | 18,0                              |
| 80                                   | 3"                                   | 50,0                                | 2,3                                     | 6,3                                | 700                              | 280            | 22,0                              | 520                              | 310            | 20,0                              |
| 80                                   | 3"                                   | 75,0                                | 1,2                                     | 5,2                                | 860                              | 280            | 25,0                              | 680                              | 310            | 23,0                              |
| 80                                   | 3"                                   | 100,0                               | 0,8                                     | 4,6                                | 960                              | 280            | 26,0                              | 780                              | 310            | 24,0                              |
| 80                                   | 3"                                   | 150,0                               | 0,4                                     | 3,7                                | 1 210                            | 280            | 30,0                              | 1 030                            | 310            | 28,0                              |
| 100                                  | 4"                                   | 15,0                                | 34,8                                    | 14,0                               | 620                              | 335            | 33,0                              | 380                              | 375            | 26,0                              |
| 100                                  | 4"                                   | 25,0                                | 18,9                                    | 13,0                               | 700                              | 335            | 35,0                              | 460                              | 375            | 28,0                              |
| 100                                  | 4"                                   | 50,0                                | 8,4                                     | 11,0                               | 850                              | 335            | 38,0                              | 610                              | 375            | 31,0                              |
| 100                                  | 4"                                   | 75,0                                | 4,7                                     | 9,0                                | 1 000                            | 335            | 41,0                              | 760                              | 375            | 34,0                              |
| 100                                  | 4"                                   | 100,0                               | 3,2                                     | 8,0                                | 1 130                            | 335            | 44,0                              | 890                              | 375            | 37,0                              |
| 100                                  | 4"                                   | 150,0                               | 1,7                                     | 6,5                                | 1 400                            | 335            | 49,0                              | 1 160                            | 375            | 42,0                              |
| 125                                  | 5"                                   | 15,0                                | 93,0                                    | 20,0                               | 650                              | 370            | 42,0                              | 410                              | 410            | 34,0                              |
| 125                                  | 5"                                   | 25,0                                | 65,0                                    | 19,0                               | 700                              | 370            | 43,0                              | 460                              | 410            | 36,0                              |
| 125                                  | 5"                                   | 50,0                                | 29,0                                    | 16,0                               | 850                              | 370            | 47,0                              | 610                              | 410            | 40,0                              |
| 125                                  | 5"                                   | 75,0                                | 13,9                                    | 13,0                               | 1 050                            | 370            | 53,0                              | 810                              | 410            | 45,0                              |
| 125                                  | 5"                                   | 100,0                               | 10,2                                    | 11,0                               | 1 160                            | 370            | 56,0                              | 920                              | 410            | 48,0                              |
| 125                                  | 5"                                   | 150,0                               | 4,9                                     | 8,9                                | 1 500                            | 370            | 65,0                              | 1 260                            | 410            | 57,0                              |
| 150                                  | 6"                                   | 15,0                                | 162,0                                   | 32,0                               | 680                              | 420            | 60,0                              | 440                              | 470            | 48,0                              |
| 150                                  | 6"                                   | 25,0                                | 73,0                                    | 27,0                               | 810                              | 420            | 65,0                              | 570                              | 470            | 52,0                              |
| 150                                  | 6"                                   | 50,0                                | 42,9                                    | 24,0                               | 930                              | 420            | 70,0                              | 690                              | 470            | 57,0                              |
| 150                                  | 6"                                   | 75,0                                | 22,1                                    | 20,0                               | 1 130                            | 420            | 75,0                              | 890                              | 470            | 65,0                              |
| 150                                  | 6"                                   | 100,0                               | 15,1                                    | 17,0                               | 1 280                            | 420            | 80,0                              | 1 040                            | 470            | 70,0                              |
| 150                                  | 6"                                   | 150,0                               | 6,5                                     | 13,0                               | 1 730                            | 420            | 100,0                             | 1 490                            | 470            | 85,0                              |
| 200                                  | 8"                                   | 15,0                                | 191,0                                   | 56,0                               | 710                              | 510            | 95,0                              | 470                              | 565            | 70,0                              |
| 200                                  | 8"                                   | 25,0                                | 80,0                                    | 47,0                               | 860                              | 510            | 105,0                             | 620                              | 565            | 80,0                              |
| 200                                  | 8"                                   | 50,0                                | 36,6                                    | 38,0                               | 1 060                            | 510            | 115,0                             | 820                              | 565            | 90,0                              |
| 200                                  | 8"                                   | 75,0                                | 20,9                                    | 33,0                               | 1 260                            | 510            | 125,0                             | 1 020                            | 565            | 100,0                             |
| 200                                  | 8"                                   | 100,0                               | 13,5                                    | 28,0                               | 1 460                            | 510            | 135,0                             | 1 220                            | 565            | 110,0                             |
| 200                                  | 8"                                   | 150,0                               | 5,3                                     | 20,0                               | 2 060                            | 510            | 165,0                             | 1 820                            | 565            | 145,0                             |

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| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Laterálny pohyb<br>Lateral movement | Laterálna tuhosť<br>Lateral spring rate | Treći moment<br>Frictional moments | MWL                              |                |                                   | MFL                              |                |                                   |
|---------------------------------------|---------------------------------------|-------------------------------------|-----------------------------------------|------------------------------------|----------------------------------|----------------|-----------------------------------|----------------------------------|----------------|-----------------------------------|
| DN                                    | DN                                    |                                     |                                         |                                    | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
| mm                                    | inch                                  | ± mm                                | N/mm                                    | N.m/bar                            | mm                               | mm             | kg                                | mm                               | mm             | kg                                |
| 250                                   | 10"                                   | 15,0                                | 234,0                                   | 87,0                               | 760                              | 575            | 130,0                             | 520                              | 635            | 95,0                              |
| 250                                   | 10"                                   | 25,0                                | 107,0                                   | 74,0                               | 910                              | 575            | 140,0                             | 670                              | 635            | 105,0                             |
| 250                                   | 10"                                   | 50,0                                | 48,6                                    | 60,0                               | 1 130                            | 575            | 155,0                             | 890                              | 635            | 120,0                             |
| 250                                   | 10"                                   | 75,0                                | 25,8                                    | 50,0                               | 1 380                            | 575            | 175,0                             | 1 140                            | 635            | 140,0                             |
| 250                                   | 10"                                   | 100,0                               | 17,5                                    | 44,0                               | 1 580                            | 575            | 190,0                             | 1 340                            | 635            | 155,0                             |
| 250                                   | 10"                                   | 150,0                               | 7,4                                     | 32,0                               | 2 180                            | 575            | 230,0                             | 1 940                            | 635            | 200,0                             |
| 300                                   | 12"                                   | 15,0                                | 277,0                                   | 124,0                              | 800                              | 650            | 170,0                             | 560                              | 715            | 125,0                             |
| 300                                   | 12"                                   | 25,0                                | 133,0                                   | 106,0                              | 950                              | 650            | 185,0                             | 710                              | 715            | 140,0                             |
| 300                                   | 12"                                   | 50,0                                | 58,0                                    | 86,0                               | 1 200                            | 650            | 205,0                             | 960                              | 715            | 160,0                             |
| 300                                   | 12"                                   | 75,0                                | 24,2                                    | 65,0                               | 1 600                            | 650            | 240,0                             | 1 360                            | 715            | 195,0                             |
| 300                                   | 12"                                   | 100,0                               | 15,1                                    | 56,0                               | 1 900                            | 650            | 270,0                             | 1 660                            | 715            | 220,0                             |
| 300                                   | 12"                                   | 150,0                               | 8,3                                     | 44,0                               | 2 400                            | 650            | 315,0                             | 2 160                            | 715            | 265,0                             |
| 350                                   | 14"                                   | 15,0                                | 236,0                                   | 150,0                              | 860                              | 735            | 245,0                             | 620                              | 805            | 175,0                             |
| 350                                   | 14"                                   | 25,0                                | 114,0                                   | 129,0                              | 1 020                            | 735            | 265,0                             | 780                              | 805            | 190,0                             |
| 350                                   | 14"                                   | 50,0                                | 51,0                                    | 105,0                              | 1 280                            | 735            | 290,0                             | 1 040                            | 805            | 215,0                             |
| 350                                   | 14"                                   | 75,0                                | 20,1                                    | 79,0                               | 1 740                            | 735            | 335,0                             | 1 500                            | 805            | 260,0                             |
| 350                                   | 14"                                   | 100,0                               | 13,0                                    | 68,0                               | 2 040                            | 735            | 365,0                             | 1 800                            | 805            | 290,0                             |
| 350                                   | 14"                                   | 150,0                               | 6,7                                     | 53,0                               | 2 640                            | 735            | 425,0                             | 2 400                            | 805            | 350,0                             |
| 400                                   | 16"                                   | 15,0                                | 594,0                                   | 194,0                              | 960                              | 815            | 345,0                             | 680                              | 895            | 230,0                             |
| 400                                   | 16"                                   | 25,0                                | 278,0                                   | 166,0                              | 1 140                            | 815            | 365,0                             | 860                              | 895            | 250,0                             |
| 400                                   | 16"                                   | 50,0                                | 130,0                                   | 137,0                              | 1 400                            | 815            | 395,0                             | 1 120                            | 895            | 280,0                             |
| 400                                   | 16"                                   | 75,0                                | 47,3                                    | 101,0                              | 1 940                            | 815            | 455,0                             | 1 660                            | 895            | 340,0                             |
| 400                                   | 16"                                   | 100,0                               | 28,2                                    | 85,0                               | 2 340                            | 815            | 500,0                             | 2 060                            | 895            | 385,0                             |
| 400                                   | 16"                                   | 150,0                               | 15,7                                    | 68,0                               | 2 940                            | 815            | 570,0                             | 2 660                            | 895            | 455,0                             |
| 500                                   | 20"                                   | 15,0                                | 687,0                                   | 303,0                              | 1 060                            | 955            | 515,0                             | 780                              | 1 045          | 340,0                             |
| 500                                   | 20"                                   | 25,0                                | 393,0                                   | 269,0                              | 1 210                            | 955            | 540,0                             | 930                              | 1 045          | 365,0                             |
| 500                                   | 20"                                   | 50,0                                | 131,0                                   | 202,0                              | 1 660                            | 955            | 620,0                             | 1 380                            | 1 045          | 445,0                             |
| 500                                   | 20"                                   | 75,0                                | 69,0                                    | 166,0                              | 2 060                            | 955            | 690,0                             | 1 780                            | 1 045          | 515,0                             |
| 500                                   | 20"                                   | 100,0                               | 38,1                                    | 135,0                              | 2 560                            | 955            | 775,0                             | 2 280                            | 1 045          | 605,0                             |
| 500                                   | 20"                                   | 150,0                               | 19,2                                    | 104,0                              | 3 360                            | 955            | 915,0                             | 3 080                            | 1 045          | 745,0                             |
| 600                                   | 24"                                   | 15,0                                | 920,0                                   | 490,0                              | 1 110                            | 1 125          | 1 325,0                           | 830                              | 1 235          | 945,0                             |
| 600                                   | 24"                                   | 25,0                                | 510,0                                   | 434,0                              | 1 280                            | 1 125          | 1 370,0                           | 1 000                            | 1 235          | 990,0                             |
| 600                                   | 24"                                   | 50,0                                | 165,0                                   | 325,0                              | 1 780                            | 1 125          | 1 500,0                           | 1 500                            | 1 235          | 1 120,0                           |
| 600                                   | 24"                                   | 75,0                                | 72,0                                    | 250,0                              | 2 380                            | 1 125          | 1 655,0                           | 2 100                            | 1 235          | 1 275,0                           |
| 600                                   | 24"                                   | 100,0                               | 47,6                                    | 217,0                              | 2 780                            | 1 125          | 1 760,0                           | 2 500                            | 1 235          | 1 380,0                           |
| 600                                   | 24"                                   | 150,0                               | 22,2                                    | 162,0                              | 3 780                            | 1 125          | 2 015,0                           | 3 500                            | 1 235          | 1 640,0                           |
| 700                                   | 28"                                   | 15,0                                | 1 468,0                                 | 539,0                              | 1 160                            | 1 185          | 1 465,0                           | 880                              | 1 275          | 970,0                             |
| 700                                   | 28"                                   | 25,0                                | 670,0                                   | 452,0                              | 1 410                            | 1 185          | 1 530,0                           | 1 130                            | 1 275          | 1 040,0                           |
| 700                                   | 28"                                   | 50,0                                | 245,0                                   | 343,0                              | 1 910                            | 1 185          | 1 660,0                           | 1 630                            | 1 275          | 1 170,0                           |
| 700                                   | 28"                                   | 75,0                                | 113,0                                   | 265,0                              | 2 510                            | 1 185          | 1 820,0                           | 2 230                            | 1 275          | 1 325,0                           |
| 700                                   | 28"                                   | 100,0                               | 70,0                                    | 223,0                              | 3 010                            | 1 185          | 1 950,0                           | 2 730                            | 1 275          | 1 455,0                           |
| 700                                   | 28"                                   | 150,0                               | 32,6                                    | 166,0                              | 4 110                            | 1 185          | 2 235,0                           | 3 830                            | 1 275          | 1 745,0                           |
| 800                                   | 32"                                   | 15,0                                | 1 627,0                                 | 744,0                              | 1 230                            | 1 345          | 2 010,0                           | 950                              | 1 450          | 1 325,0                           |
| 800                                   | 32"                                   | 25,0                                | 786,0                                   | 633,0                              | 1 480                            | 1 345          | 2 090,0                           | 1 200                            | 1 450          | 1 400,0                           |
| 800                                   | 32"                                   | 50,0                                | 280,0                                   | 476,0                              | 2 030                            | 1 345          | 2 260,0                           | 1 750                            | 1 450          | 1 570,0                           |
| 800                                   | 32"                                   | 75,0                                | 135,0                                   | 375,0                              | 2 630                            | 1 345          | 2 445,0                           | 2 350                            | 1 450          | 1 755,0                           |
| 800                                   | 32"                                   | 100,0                               | 79,0                                    | 309,0                              | 3 230                            | 1 345          | 2 630,0                           | 2 950                            | 1 450          | 1 945,0                           |
| 800                                   | 32"                                   | 150,0                               | 38,7                                    | 234,0                              | 4 330                            | 1 345          | 2 970,0                           | 4 050                            | 1 450          | 2 285,0                           |
| 900                                   | 36"                                   | 15,0                                | 1 496,0                                 | 914,0                              | 1 990                            | 1 380          | 1 775,0                           | 1 940                            | 1 520          | 2 295,0                           |
| 900                                   | 36"                                   | 25,0                                | 792,0                                   | 770,0                              | 2 240                            | 1 380          | 1 880,0                           | 2 190                            | 1 520          | 2 405,0                           |
| 900                                   | 36"                                   | 50,0                                | 271,0                                   | 547,0                              | 2 890                            | 1 380          | 2 160,0                           | 2 840                            | 1 520          | 2 680,0                           |
| 900                                   | 36"                                   | 75,0                                | 155,0                                   | 447,0                              | 3 390                            | 1 380          | 2 370,0                           | 3 340                            | 1 520          | 2 895,0                           |
| 900                                   | 36"                                   | 100,0                               | 86,0                                    | 356,0                              | 4 090                            | 1 380          | 2 670,0                           | 4 040                            | 1 520          | 3 190,0                           |
| 900                                   | 36"                                   | 150,0                               | 44,2                                    | 270,0                              | 5 190                            | 1 380          | 3 135,0                           | 5 140                            | 1 520          | 3 660,0                           |

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| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Laterálny pohyb<br>Lateral movement | Laterálna tuhosť<br>Lateral spring rate | Treť moment<br>Frictional moments |
|---------------------------------------|---------------------------------------|-------------------------------------|-----------------------------------------|-----------------------------------|
| DN                                    | DN                                    | ± mm                                | N/mm                                    | N.m/bar                           |
| mm                                    | inch                                  |                                     |                                         |                                   |
| 1000                                  | 40"                                   | 15,0                                | 2 168,0                                 | 1 168,0                           |
| 1000                                  | 40"                                   | 25,0                                | 1 105,0                                 | 974,0                             |
| 1000                                  | 40"                                   | 50,0                                | 374,0                                   | 688,0                             |
| 1000                                  | 40"                                   | 75,0                                | 203,0                                   | 550,0                             |
| 1000                                  | 40"                                   | 100,0                               | 118,0                                   | 446,0                             |
| 1000                                  | 40"                                   | 150,0                               | 60,0                                    | 336,0                             |
| 1100                                  | 44"                                   | 15,0                                | 2 490,0                                 | 1 309,0                           |
| 1100                                  | 44"                                   | 25,0                                | 1 342,0                                 | 1 105,0                           |
| 1100                                  | 44"                                   | 50,0                                | 383,0                                   | 731,0                             |
| 1100                                  | 44"                                   | 75,0                                | 208,0                                   | 581,0                             |
| 1100                                  | 44"                                   | 100,0                               | 126,0                                   | 475,0                             |
| 1100                                  | 44"                                   | 150,0                               | 58,0                                    | 342,0                             |
| 1200                                  | 48"                                   | 15,0                                | 2 402,0                                 | 1 601,0                           |
| 1200                                  | 48"                                   | 25,0                                | 1 084,0                                 | 1 279,0                           |
| 1200                                  | 48"                                   | 50,0                                | 351,0                                   | 874,0                             |
| 1200                                  | 48"                                   | 75,0                                | 191,0                                   | 693,0                             |
| 1200                                  | 48"                                   | 100,0                               | 120,0                                   | 575,0                             |
| 1200                                  | 48"                                   | 150,0                               | 55,0                                    | 413,0                             |
| 1300                                  | 52"                                   | 15,0                                | 4 559,0                                 | 1 726,0                           |
| 1300                                  | 52"                                   | 25,0                                | 2 098,0                                 | 1 382,0                           |
| 1300                                  | 52"                                   | 50,0                                | 640,0                                   | 921,0                             |
| 1300                                  | 52"                                   | 75,0                                | 385,0                                   | 758,0                             |
| 1300                                  | 52"                                   | 100,0                               | 215,0                                   | 599,0                             |
| 1300                                  | 52"                                   | 150,0                               | 99,0                                    | 429,0                             |
| 1400                                  | 56"                                   | 15,0                                | 6 387,0                                 | 2 032,0                           |
| 1400                                  | 56"                                   | 25,0                                | 3 175,0                                 | 1 662,0                           |
| 1400                                  | 56"                                   | 50,0                                | 932,0                                   | 1 094,0                           |
| 1400                                  | 56"                                   | 75,0                                | 573,0                                   | 908,0                             |
| 1400                                  | 56"                                   | 100,0                               | 310,0                                   | 707,0                             |
| 1400                                  | 56"                                   | 150,0                               | 142,0                                   | 506,0                             |
| 1500                                  | 60"                                   | 15,0                                | 6 939,0                                 | 2 080,0                           |
| 1500                                  | 60"                                   | 25,0                                | 3 566,0                                 | 1 711,0                           |
| 1500                                  | 60"                                   | 50,0                                | 1 040,0                                 | 1 116,0                           |
| 1500                                  | 60"                                   | 75,0                                | 609,0                                   | 906,0                             |
| 1500                                  | 60"                                   | 100,0                               | 341,0                                   | 714,0                             |
| 1500                                  | 60"                                   | 150,0                               | 156,0                                   | 509,0                             |
| 1600                                  | 64"                                   | 15,0                                | 7 493,0                                 | 2 441,0                           |
| 1600                                  | 64"                                   | 25,0                                | 3 968,0                                 | 2 023,0                           |
| 1600                                  | 64"                                   | 50,0                                | 1 150,0                                 | 1 315,0                           |
| 1600                                  | 64"                                   | 75,0                                | 644,0                                   | 1 048,0                           |
| 1600                                  | 64"                                   | 100,0                               | 373,0                                   | 836,0                             |
| 1600                                  | 64"                                   | 150,0                               | 170,0                                   | 595,0                             |



## MWL

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 2 130                            | 1 530          | 2 165,0                           |
| 2 410                            | 1 530          | 2 300,0                           |
| 3 110                            | 1 530          | 2 635,0                           |
| 3 710                            | 1 530          | 2 920,0                           |
| 4 410                            | 1 530          | 3 255,0                           |
| 5 610                            | 1 530          | 3 830,0                           |
| 2 230                            | 1 610          | 2 660,0                           |
| 2 490                            | 1 610          | 2 800,0                           |
| 3 340                            | 1 610          | 3 255,0                           |
| 3 990                            | 1 610          | 3 600,0                           |
| 4 690                            | 1 610          | 3 970,0                           |
| 6 190                            | 1 610          | 4 770,0                           |
| 2 330                            | 1 740          | 3 325,0                           |
| 2 700                            | 1 740          | 3 600,0                           |
| 3 550                            | 1 740          | 4 225,0                           |
| 4 250                            | 1 740          | 4 745,0                           |
| 4 950                            | 1 740          | 5 260,0                           |
| 6 550                            | 1 740          | 6 445,0                           |
| 2 470                            | 1 820          | 4 865,0                           |
| 2 840                            | 1 820          | 5 175,0                           |
| 3 770                            | 1 820          | 5 945,0                           |
| 4 370                            | 1 820          | 6 440,0                           |
| 5 270                            | 1 820          | 7 185,0                           |
| 6 970                            | 1 820          | 8 590,0                           |



## MFL

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 2 090                            | 1 685          | 2 900,0                           |
| 2 370                            | 1 685          | 3 035,0                           |
| 3 070                            | 1 685          | 3 370,0                           |
| 3 670                            | 1 685          | 3 660,0                           |
| 4 370                            | 1 685          | 3 995,0                           |
| 5 570                            | 1 685          | 4 570,0                           |
| 2 200                            | 1 765          | 3 475,0                           |
| 2 460                            | 1 765          | 3 610,0                           |
| 3 310                            | 1 765          | 4 065,0                           |
| 3 960                            | 1 765          | 4 410,0                           |
| 4 660                            | 1 765          | 4 785,0                           |
| 6 160                            | 1 765          | 5 580,0                           |
| 2 310                            | 1 895          | 4 390,0                           |
| 2 680                            | 1 895          | 4 665,0                           |
| 3 530                            | 1 895          | 5 290,0                           |
| 4 230                            | 1 895          | 5 810,0                           |
| 4 930                            | 1 895          | 6 325,0                           |
| 6 530                            | 1 895          | 7 510,0                           |
| 2 450                            | 1 980          | 5 890,0                           |
| 2 820                            | 1 980          | 6 200,0                           |
| 3 750                            | 1 980          | 6 965,0                           |
| 4 350                            | 1 980          | 7 465,0                           |
| 5 250                            | 1 980          | 8 210,0                           |
| 6 950                            | 1 980          | 9 615,0                           |
| 2 580                            | 2 120          | 7 060,0                           |
| 2 930                            | 2 120          | 7 435,0                           |
| 3 930                            | 2 120          | 8 515,0                           |
| 4 530                            | 2 120          | 9 165,0                           |
| 5 530                            | 2 120          | 10 245,0                          |
| 7 330                            | 2 120          | 12 190,0                          |
| 2 700                            | 2 200          | 8 335,0                           |
| 3 050                            | 2 200          | 8 745,0                           |
| 4 100                            | 2 200          | 9 975,0                           |
| 4 800                            | 2 200          | 10 795,0                          |
| 5 800                            | 2 200          | 11 965,0                          |
| 7 700                            | 2 200          | 14 190,0                          |
| 2 800                            | 2 340          | 9 240,0                           |
| 3 150                            | 2 340          | 9 685,0                           |
| 4 250                            | 2 340          | 11 090,0                          |
| 5 050                            | 2 340          | 12 110,0                          |
| 6 050                            | 2 340          | 13 380,0                          |
| 8 050                            | 2 340          | 15 930,0                          |

PN 40

| Menovitá svetlost'<br>Nominal diameter | Menovitá svetlost'<br>Nominal diameter | Laterálny pohyb<br>Lateral movement | Laterálna tuhosť<br>Lateral spring rate | Treći moment<br>Frictional moments | MWL                              |                |                                   | MFL                              |                |                                   |
|----------------------------------------|----------------------------------------|-------------------------------------|-----------------------------------------|------------------------------------|----------------------------------|----------------|-----------------------------------|----------------------------------|----------------|-----------------------------------|
| DN                                     | DN                                     |                                     |                                         |                                    | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
| mm                                     | inch                                   | ± mm                                | N/mm                                    | N.m/bar                            | mm                               | mm             | kg                                | mm                               | mm             | kg                                |
| 32                                     | 1 ¼"                                   | 25,0                                | 23,0                                    | 2,3                                | 440                              | 220            | 10,0                              | 260                              | 250            | 7,9                               |
| 32                                     | 1 ¼"                                   | 50,0                                | 0,8                                     | 1,9                                | 540                              | 220            | 11,0                              | 360                              | 250            | 8,6                               |
| 32                                     | 1 ¼"                                   | 75,0                                | 0,6                                     | 1,8                                | 580                              | 220            | 11,0                              | 400                              | 250            | 8,8                               |
| 32                                     | 1 ¼"                                   | 100,0                               | 0,3                                     | 1,5                                | 690                              | 220            | 12,0                              | 510                              | 250            | 9,6                               |
| 32                                     | 1 ¼"                                   | 150,0                               | 0,1                                     | 1,2                                | 890                              | 220            | 13,0                              | 710                              | 250            | 11,0                              |
| 40                                     | 1 ½"                                   | 15,0                                | 4,0                                     | 2,9                                | 430                              | 230            | 11,0                              | 250                              | 260            | 8,5                               |
| 40                                     | 1 ½"                                   | 25,0                                | 3,0                                     | 2,8                                | 450                              | 230            | 11,0                              | 270                              | 260            | 8,7                               |
| 40                                     | 1 ½"                                   | 50,0                                | 1,1                                     | 2,2                                | 560                              | 230            | 12,0                              | 380                              | 260            | 9,5                               |
| 40                                     | 1 ½"                                   | 75,0                                | 0,6                                     | 1,9                                | 650                              | 230            | 13,0                              | 470                              | 260            | 10,0                              |
| 40                                     | 1 ½"                                   | 100,0                               | 0,4                                     | 1,7                                | 730                              | 230            | 13,0                              | 550                              | 260            | 11,0                              |
| 40                                     | 1 ½"                                   | 150,0                               | 0,2                                     | 1,3                                | 950                              | 230            | 15,0                              | 770                              | 260            | 12,0                              |
| 50                                     | 2"                                     | 15,0                                | 11,8                                    | 4,8                                | 440                              | 245            | 13,0                              | 260                              | 275            | 11,0                              |
| 50                                     | 2"                                     | 25,0                                | 6,7                                     | 4,3                                | 490                              | 245            | 14,0                              | 310                              | 275            | 11,0                              |
| 50                                     | 2"                                     | 50,0                                | 2,2                                     | 3,3                                | 640                              | 245            | 15,0                              | 460                              | 275            | 12,0                              |
| 50                                     | 2"                                     | 75,0                                | 1,3                                     | 2,9                                | 740                              | 245            | 16,0                              | 560                              | 275            | 13,0                              |
| 50                                     | 2"                                     | 100,0                               | 0,9                                     | 2,5                                | 840                              | 245            | 17,0                              | 660                              | 275            | 14,0                              |
| 50                                     | 2"                                     | 150,0                               | 0,5                                     | 2,1                                | 1 040                            | 245            | 18,0                              | 860                              | 275            | 16,0                              |
| 65                                     | 2 ½"                                   | 15,0                                | 14,1                                    | 7,9                                | 460                              | 285            | 18,0                              | 280                              | 325            | 16,0                              |
| 65                                     | 2 ½"                                   | 25,0                                | 6,3                                     | 6,8                                | 540                              | 285            | 19,0                              | 360                              | 325            | 17,0                              |
| 65                                     | 2 ½"                                   | 50,0                                | 2,8                                     | 5,7                                | 660                              | 285            | 21,0                              | 480                              | 325            | 19,0                              |
| 65                                     | 2 ½"                                   | 75,0                                | 1,4                                     | 4,7                                | 810                              | 285            | 23,0                              | 630                              | 325            | 21,0                              |
| 65                                     | 2 ½"                                   | 100,0                               | 0,8                                     | 4,0                                | 960                              | 285            | 25,0                              | 780                              | 325            | 23,0                              |
| 65                                     | 2 ½"                                   | 150,0                               | 0,5                                     | 3,3                                | 1 160                            | 285            | 28,0                              | 980                              | 325            | 26,0                              |
| 80                                     | 3"                                     | 15,0                                | 14,2                                    | 11,0                               | 490                              | 300            | 21,0                              | 310                              | 340            | 19,0                              |
| 80                                     | 3"                                     | 25,0                                | 7,0                                     | 9,4                                | 570                              | 300            | 23,0                              | 390                              | 340            | 21,0                              |
| 80                                     | 3"                                     | 50,0                                | 3,0                                     | 7,6                                | 710                              | 300            | 25,0                              | 530                              | 340            | 23,0                              |
| 80                                     | 3"                                     | 75,0                                | 1,5                                     | 6,3                                | 870                              | 300            | 28,0                              | 690                              | 340            | 26,0                              |
| 80                                     | 3"                                     | 100,0                               | 1,1                                     | 5,7                                | 970                              | 300            | 29,0                              | 790                              | 340            | 27,0                              |
| 80                                     | 3"                                     | 150,0                               | 0,6                                     | 4,6                                | 1 220                            | 300            | 33,0                              | 1 040                            | 340            | 32,0                              |
| 100                                    | 4"                                     | 15,0                                | 42,6                                    | 17,0                               | 620                              | 355            | 37,0                              | 380                              | 405            | 30,0                              |
| 100                                    | 4"                                     | 25,0                                | 23,3                                    | 15,0                               | 700                              | 355            | 39,0                              | 460                              | 405            | 31,0                              |
| 100                                    | 4"                                     | 50,0                                | 10,4                                    | 12,0                               | 850                              | 355            | 42,0                              | 610                              | 405            | 35,0                              |
| 100                                    | 4"                                     | 75,0                                | 5,9                                     | 11,0                               | 1 000                            | 355            | 46,0                              | 760                              | 405            | 38,0                              |
| 100                                    | 4"                                     | 100,0                               | 4,0                                     | 9,4                                | 1 130                            | 355            | 49,0                              | 890                              | 405            | 41,0                              |
| 100                                    | 4"                                     | 150,0                               | 2,1                                     | 7,6                                | 1 400                            | 355            | 55,0                              | 1 160                            | 405            | 48,0                              |
| 125                                    | 5"                                     | 15,0                                | 114,0                                   | 23,0                               | 670                              | 390            | 51,0                              | 430                              | 440            | 39,0                              |
| 125                                    | 5"                                     | 25,0                                | 80,0                                    | 21,0                               | 720                              | 390            | 52,0                              | 480                              | 440            | 40,0                              |
| 125                                    | 5"                                     | 50,0                                | 36,1                                    | 18,0                               | 870                              | 390            | 56,0                              | 630                              | 440            | 45,0                              |
| 125                                    | 5"                                     | 75,0                                | 17,4                                    | 15,0                               | 1 070                            | 390            | 60,0                              | 830                              | 440            | 50,0                              |
| 125                                    | 5"                                     | 100,0                               | 12,8                                    | 13,0                               | 1 180                            | 390            | 65,0                              | 940                              | 440            | 54,0                              |
| 125                                    | 5"                                     | 150,0                               | 6,1                                     | 10,0                               | 1 520                            | 390            | 75,0                              | 1 280                            | 440            | 65,0                              |
| 150                                    | 6"                                     | 15,0                                | 198,0                                   | 34,0                               | 700                              | 435            | 70,0                              | 460                              | 490            | 53,0                              |
| 150                                    | 6"                                     | 25,0                                | 90,0                                    | 29,0                               | 830                              | 435            | 75,0                              | 590                              | 490            | 58,0                              |
| 150                                    | 6"                                     | 50,0                                | 53,0                                    | 26,0                               | 950                              | 435            | 80,0                              | 710                              | 490            | 60,0                              |
| 150                                    | 6"                                     | 75,0                                | 27,6                                    | 21,0                               | 1 150                            | 435            | 85,0                              | 910                              | 490            | 70,0                              |
| 150                                    | 6"                                     | 100,0                               | 18,9                                    | 19,0                               | 1 300                            | 435            | 90,0                              | 1 060                            | 490            | 75,0                              |
| 150                                    | 6"                                     | 150,0                               | 8,1                                     | 14,0                               | 1 750                            | 435            | 110,0                             | 1 510                            | 490            | 90,0                              |
| 200                                    | 8"                                     | 15,0                                | 233,0                                   | 65,0                               | 720                              | 540            | 115,0                             | 480                              | 605            | 90,0                              |
| 200                                    | 8"                                     | 25,0                                | 98,0                                    | 55,0                               | 870                              | 540            | 120,0                             | 630                              | 605            | 100,0                             |
| 200                                    | 8"                                     | 50,0                                | 45,4                                    | 45,0                               | 1 070                            | 540            | 135,0                             | 830                              | 605            | 110,0                             |
| 200                                    | 8"                                     | 75,0                                | 26,0                                    | 39,0                               | 1 270                            | 540            | 145,0                             | 1 030                            | 605            | 120,0                             |
| 200                                    | 8"                                     | 100,0                               | 16,8                                    | 34,0                               | 1 470                            | 540            | 155,0                             | 1 230                            | 605            | 130,0                             |
| 200                                    | 8"                                     | 150,0                               | 6,7                                     | 24,0                               | 2 070                            | 540            | 190,0                             | 1 830                            | 605            | 165,0                             |

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## MWL



## MFL

| Menovitá svetlosť<br>Nominal diametr | Menovitá svetlosť<br>Nominal diametr | Laterálny pohyb<br>Lateral movement | Laterálna tuhosť<br>Lateral spring rate | Treći moment<br>Frictional moments | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|--------------------------------------|--------------------------------------|-------------------------------------|-----------------------------------------|------------------------------------|----------------------------------|----------------|-----------------------------------|----------------------------------|----------------|-----------------------------------|
| DN                                   | DN                                   | ± mm                                | N/mm                                    | N.m/bar                            | mm                               | mm             | kg                                | mm                               | mm             | kg                                |
| 250                                  | 10"                                  | 15,0                                | 286,0                                   | 98,0                               | 780                              | 630            | 165,0                             | 540                              | 700            | 130,0                             |
| 250                                  | 10"                                  | 25,0                                | 132,0                                   | 84,0                               | 930                              | 630            | 175,0                             | 690                              | 700            | 140,0                             |
| 250                                  | 10"                                  | 50,0                                | 60,0                                    | 69,0                               | 1 150                            | 630            | 195,0                             | 910                              | 700            | 160,0                             |
| 250                                  | 10"                                  | 75,0                                | 32,2                                    | 58,0                               | 1 400                            | 630            | 210,0                             | 1 160                            | 700            | 180,0                             |
| 250                                  | 10"                                  | 100,0                               | 21,8                                    | 51,0                               | 1 600                            | 630            | 230,0                             | 1 360                            | 700            | 195,0                             |
| 250                                  | 10"                                  | 150,0                               | 9,3                                     | 38,0                               | 2 200                            | 630            | 275,0                             | 1 960                            | 700            | 240,0                             |
| 300                                  | 12"                                  | 15,0                                | 384,0                                   | 136,0                              | 840                              | 710            | 240,0                             | 600                              | 790            | 185,0                             |
| 300                                  | 12"                                  | 25,0                                | 187,0                                   | 118,0                              | 990                              | 710            | 255,0                             | 750                              | 790            | 200,0                             |
| 300                                  | 12"                                  | 50,0                                | 82,0                                    | 96,0                               | 1 240                            | 710            | 280,0                             | 1 000                            | 790            | 225,0                             |
| 300                                  | 12"                                  | 75,0                                | 34,6                                    | 74,0                               | 1 640                            | 710            | 320,0                             | 1 400                            | 790            | 265,0                             |
| 300                                  | 12"                                  | 100,0                               | 21,6                                    | 64,0                               | 1 940                            | 710            | 350,0                             | 1 700                            | 790            | 295,0                             |
| 300                                  | 12"                                  | 150,0                               | 11,9                                    | 51,0                               | 2 440                            | 710            | 400,0                             | 2 200                            | 790            | 345,0                             |
| 350                                  | 14"                                  | 15,0                                | 326,0                                   | 164,0                              | 890                              | 790            | 335,0                             | 650                              | 875            | 245,0                             |
| 350                                  | 14"                                  | 25,0                                | 160,0                                   | 143,0                              | 1 050                            | 790            | 355,0                             | 810                              | 875            | 265,0                             |
| 350                                  | 14"                                  | 50,0                                | 72,0                                    | 117,0                              | 1 310                            | 790            | 385,0                             | 1 070                            | 875            | 295,0                             |
| 350                                  | 14"                                  | 75,0                                | 28,6                                    | 89,0                               | 1 770                            | 790            | 440,0                             | 1 530                            | 875            | 350,0                             |
| 350                                  | 14"                                  | 100,0                               | 18,6                                    | 77,0                               | 2 070                            | 790            | 475,0                             | 1 830                            | 875            | 385,0                             |
| 350                                  | 14"                                  | 150,0                               | 9,6                                     | 61,0                               | 2 670                            | 790            | 550,0                             | 2 430                            | 875            | 460,0                             |
| 400                                  | 16"                                  | 15,0                                | 717,0                                   | 220,0                              | 990                              | 900            | 485,0                             | 710                              | 995            | 340,0                             |
| 400                                  | 16"                                  | 25,0                                | 339,0                                   | 191,0                              | 1 170                            | 900            | 515,0                             | 890                              | 995            | 370,0                             |
| 400                                  | 16"                                  | 50,0                                | 160,0                                   | 160,0                              | 1 430                            | 900            | 555,0                             | 1 150                            | 995            | 410,0                             |
| 400                                  | 16"                                  | 75,0                                | 58,0                                    | 119,0                              | 1 970                            | 900            | 635,0                             | 1 690                            | 995            | 495,0                             |
| 400                                  | 16"                                  | 100,0                               | 34,8                                    | 101,0                              | 2 370                            | 900            | 700,0                             | 2 090                            | 995            | 555,0                             |
| 400                                  | 16"                                  | 150,0                               | 19,4                                    | 81,0                               | 2 970                            | 900            | 790,0                             | 2 690                            | 995            | 645,0                             |
| 500                                  | 20"                                  | 15,0                                | 983,0                                   | 293,0                              | 1 100                            | 980            | 1 075,0                           | 820                              | 1 070          | 845,0                             |
| 500                                  | 20"                                  | 25,0                                | 570,0                                   | 262,0                              | 1 250                            | 980            | 1 110,0                           | 970                              | 1 070          | 880,0                             |
| 500                                  | 20"                                  | 50,0                                | 192,0                                   | 198,0                              | 1 700                            | 980            | 1 215,0                           | 1 420                            | 1 070          | 985,0                             |
| 500                                  | 20"                                  | 75,0                                | 102,0                                   | 163,0                              | 2 100                            | 980            | 1 310,0                           | 1 820                            | 1 070          | 1 080,0                           |
| 500                                  | 20"                                  | 100,0                               | 57,0                                    | 133,0                              | 2 600                            | 980            | 1 430,0                           | 2 320                            | 1 070          | 1 200,0                           |
| 500                                  | 20"                                  | 150,0                               | 28,6                                    | 103,0                              | 3 400                            | 980            | 1 620,0                           | 3 120                            | 1 070          | 1 390,0                           |
| 600                                  | 24"                                  | 15,0                                | 1 312,0                                 | 420,0                              | 1 150                            | 1 130          | 1 520,0                           | 870                              | 1 225          | 1 180,0                           |
| 600                                  | 24"                                  | 25,0                                | 736,0                                   | 372,0                              | 1 320                            | 1 130          | 1 580,0                           | 1 040                            | 1 225          | 1 235,0                           |
| 600                                  | 24"                                  | 50,0                                | 242,0                                   | 279,0                              | 1 820                            | 1 130          | 1 740,0                           | 1 540                            | 1 225          | 1 400,0                           |
| 600                                  | 24"                                  | 75,0                                | 106,0                                   | 214,0                              | 2 420                            | 1 130          | 1 935,0                           | 2 140                            | 1 225          | 1 595,0                           |
| 600                                  | 24"                                  | 100,0                               | 70,0                                    | 185,0                              | 2 820                            | 1 130          | 2 065,0                           | 2 540                            | 1 225          | 1 725,0                           |
| 600                                  | 24"                                  | 150,0                               | 32,9                                    | 139,0                              | 3 820                            | 1 130          | 2 390,0                           | 3 540                            | 1 225          | 2 050,0                           |
| 700                                  | 28"                                  | 15,0                                | 1 709,0                                 | 495,0                              | 1 190                            | 1 205          | 1 800,0                           | 910                              | 1 290          | 1 325,0                           |
| 700                                  | 28"                                  | 25,0                                | 786,0                                   | 417,0                              | 1 440                            | 1 205          | 1 900,0                           | 1 160                            | 1 290          | 1 425,0                           |
| 700                                  | 28"                                  | 50,0                                | 289,0                                   | 316,0                              | 1 940                            | 1 205          | 2 105,0                           | 1 660                            | 1 290          | 1 625,0                           |
| 700                                  | 28"                                  | 75,0                                | 133,0                                   | 245,0                              | 2 540                            | 1 205          | 2 345,0                           | 2 260                            | 1 290          | 1 865,0                           |
| 700                                  | 28"                                  | 100,0                               | 83,0                                    | 206,0                              | 3 040                            | 1 205          | 2 545,0                           | 2 760                            | 1 290          | 2 065,0                           |
| 700                                  | 28"                                  | 150,0                               | 38,6                                    | 153,0                              | 4 140                            | 1 205          | 2 990,0                           | 3 860                            | 1 290          | 2 510,0                           |
| 800                                  | 32"                                  | 15,0                                | 2 182,0                                 | 734,0                              | 2 010                            | 1 365          | 2 155,0                           | 1 990                            | 1 455          | 2 820,0                           |
| 800                                  | 32"                                  | 25,0                                | 1 066,0                                 | 611,0                              | 2 260                            | 1 365          | 2 270,0                           | 2 240                            | 1 455          | 2 940,0                           |
| 800                                  | 32"                                  | 50,0                                | 384,0                                   | 447,0                              | 2 810                            | 1 365          | 2 520,0                           | 2 790                            | 1 455          | 3 190,0                           |
| 800                                  | 32"                                  | 75,0                                | 186,0                                   | 345,0                              | 3 410                            | 1 365          | 2 800,0                           | 3 390                            | 1 455          | 3 470,0                           |
| 800                                  | 32"                                  | 100,0                               | 109,0                                   | 281,0                              | 4 010                            | 1 365          | 3 075,0                           | 3 990                            | 1 455          | 3 745,0                           |
| 800                                  | 32"                                  | 150,0                               | 54,0                                    | 210,0                              | 5 110                            | 1 365          | 3 585,0                           | 5 090                            | 1 455          | 4 250,0                           |
| 900                                  | 36"                                  | 15,0                                | 2 023,0                                 | 808,0                              | 2 210                            | 1 450          | 2 970,0                           | 2 200                            | 1 545          | 3 810,0                           |
| 900                                  | 36"                                  | 25,0                                | 1 081,0                                 | 680,0                              | 2 460                            | 1 450          | 3 115,0                           | 2 450                            | 1 545          | 3 960,0                           |
| 900                                  | 36"                                  | 50,0                                | 373,0                                   | 481,0                              | 3 110                            | 1 450          | 3 495,0                           | 3 100                            | 1 545          | 4 335,0                           |
| 900                                  | 36"                                  | 75,0                                | 215,0                                   | 393,0                              | 3 610                            | 1 450          | 3 785,0                           | 3 600                            | 1 545          | 4 630,0                           |
| 900                                  | 36"                                  | 100,0                               | 120,0                                   | 313,0                              | 4 310                            | 1 450          | 4 195,0                           | 4 300                            | 1 545          | 5 035,0                           |
| 900                                  | 36"                                  | 150,0                               | 61,0                                    | 237,0                              | 5 410                            | 1 450          | 4 835,0                           | 5 400                            | 1 545          | 5 675,0                           |

**PN 40**

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Laterálny pohyb<br>Lateral movement | Laterálna tuhosť<br>Lateral spring rate | Treći moment<br>Frictional moments |
|---------------------------------------|---------------------------------------|-------------------------------------|-----------------------------------------|------------------------------------|
| DN                                    | DN                                    | ± mm                                | N/mm                                    | N.m/bar                            |
| mm                                    | inch                                  |                                     |                                         |                                    |
| 1000                                  | 40"                                   | 15,0                                | 5 516,0                                 | 1 094,0                            |
| 1000                                  | 40"                                   | 25,0                                | 2 811,0                                 | 910,0                              |
| 1000                                  | 40"                                   | 50,0                                | 952,0                                   | 640,0                              |
| 1000                                  | 40"                                   | 75,0                                | 516,0                                   | 511,0                              |
| 1000                                  | 40"                                   | 100,0                               | 301,0                                   | 413,0                              |
| 1000                                  | 40"                                   | 150,0                               | 153,0                                   | 311,0                              |
| 1100                                  | 44"                                   | 15,0                                | 6 295,0                                 | 1 385,0                            |
| 1100                                  | 44"                                   | 25,0                                | 3 394,0                                 | 1 172,0                            |
| 1100                                  | 44"                                   | 50,0                                | 968,0                                   | 779,0                              |
| 1100                                  | 44"                                   | 75,0                                | 526,0                                   | 620,0                              |
| 1100                                  | 44"                                   | 100,0                               | 319,0                                   | 508,0                              |
| 1100                                  | 44"                                   | 150,0                               | 147,0                                   | 367,0                              |
| 1200                                  | 48"                                   | 15,0                                | 2 759,0                                 | 1 601,0                            |
| 1200                                  | 48"                                   | 25,0                                | 2 402,0                                 | 1 356,0                            |
| 1200                                  | 48"                                   | 50,0                                | 894,0                                   | 931,0                              |
| 1200                                  | 48"                                   | 75,0                                | 487,0                                   | 740,0                              |
| 1200                                  | 48"                                   | 100,0                               | 306,0                                   | 614,0                              |
| 1200                                  | 48"                                   | 150,0                               | 141,0                                   | 442,0                              |


**MWL**

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 2 330                            | 1 590          | 3 780,0                           |
| 2 610                            | 1 590          | 3 970,0                           |
| 3 310                            | 1 590          | 4 440,0                           |
| 3 910                            | 1 590          | 4 845,0                           |
| 4 610                            | 1 590          | 5 320,0                           |
| 5 810                            | 1 590          | 6 130,0                           |
| 2 450                            | 1 735          | 4 890,0                           |
| 2 710                            | 1 735          | 5 125,0                           |
| 3 560                            | 1 735          | 5 880,0                           |
| 4 210                            | 1 735          | 6 460,0                           |
| 4 910                            | 1 735          | 7 085,0                           |
| 6 410                            | 1 735          | 8 425,0                           |
| 2 330                            | 1 740          | 3 325,0                           |
| 2 960                            | 1 855          | 5 880,0                           |
| 3 810                            | 1 855          | 6 720,0                           |
| 4 510                            | 1 855          | 7 410,0                           |
| 5 210                            | 1 855          | 8 105,0                           |
| 6 810                            | 1 855          | 9 685,0                           |


**MFL**

| Stavebná dĺžka<br>Overall length | Šírka<br>Width | Približná hmotnosť<br>App. weight |
|----------------------------------|----------------|-----------------------------------|
| mm                               | mm             | kg                                |
| 2 340                            | 1 695          | 4 980,0                           |
| 2 620                            | 1 695          | 5 170,0                           |
| 3 320                            | 1 695          | 5 640,0                           |
| 3 920                            | 1 695          | 6 045,0                           |
| 4 620                            | 1 695          | 6 515,0                           |
| 5 820                            | 1 695          | 7 325,0                           |
| 2 310                            | 1 895          | 4 390,0                           |
| 2 980                            | 1 965          | 7 665,0                           |
| 3 830                            | 1 965          | 8 505,0                           |
| 4 530                            | 1 965          | 9 195,0                           |
| 5 230                            | 1 965          | 9 890,0                           |
| 6 830                            | 1 965          | 11 465,0                          |



ZÁKLADNÉ TECHNICKÉ ÚDAJE  
UNIVERZÁLNÝCH KOMPENZÁTOROV

**MWD - MFD**

DATA SHEETS FOR  
**UNIVERSAL**  
**UN-TIED**  
EXPANSION JOINTS



## PN 1

| Menovitá svetlost'<br>Nominal diametr | Menovitá svetlost'<br>Nominal diametr | Axiálny pohyb<br>Axial movement | Laterálny pohyb<br>Lateral movement | Axiálna tuhosť<br>Spring rate | Laterálna tuhosť<br>Lateral spring rate | Efektívny prierez<br>Effective area | MWD                              |                                   | MFD                              |                                   |
|---------------------------------------|---------------------------------------|---------------------------------|-------------------------------------|-------------------------------|-----------------------------------------|-------------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|
| DN                                    | DN                                    |                                 |                                     |                               |                                         |                                     | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight |
| mm                                    | inch                                  | ± mm                            | ± mm                                | N/mm                          | N/mm                                    | cm <sup>2</sup>                     | mm                               | kg                                | mm                               | kg                                |
| 15                                    | ½"                                    | 25,0                            | 15,0                                | 8                             | 0,1                                     | 5                                   | 400                              | 0,4                               | 240                              | 1,1                               |
| 15                                    | ½"                                    | 25,0                            | 25,0                                | 8                             | 0,1                                     | 5                                   | 420                              | 0,5                               | 260                              | 1,1                               |
| 15                                    | ½"                                    | 25,0                            | 50,0                                | 8                             | 0,1                                     | 5                                   | 470                              | 0,5                               | 290                              | 1,2                               |
| 15                                    | ½"                                    | 25,0                            | 75,0                                | 8                             | 0,1                                     | 5                                   | 450                              | 0,5                               | 310                              | 1,2                               |
| 15                                    | ½"                                    | 25,0                            | 100,0                               | 8                             | 0,1                                     | 5                                   | 520                              | 0,6                               | 360                              | 1,3                               |
| 15                                    | ½"                                    | 25,0                            | 150,0                               | 8                             | 0,1                                     | 5                                   | 670                              | 0,8                               | 510                              | 1,5                               |
| 20                                    | ¾"                                    | 25,0                            | 15,0                                | 7                             | 0,2                                     | 8                                   | 370                              | 0,5                               | 210                              | 1,4                               |
| 20                                    | ¾"                                    | 25,0                            | 25,0                                | 7                             | 0,1                                     | 8                                   | 400                              | 0,6                               | 240                              | 1,4                               |
| 20                                    | ¾"                                    | 25,0                            | 50,0                                | 7                             | 0,1                                     | 8                                   | 460                              | 0,7                               | 300                              | 1,5                               |
| 20                                    | ¾"                                    | 25,0                            | 75,0                                | 7                             | 0,1                                     | 8                                   | 540                              | 0,8                               | 380                              | 1,7                               |
| 20                                    | ¾"                                    | 25,0                            | 100,0                               | 7                             | 0,1                                     | 8                                   | 590                              | 0,9                               | 430                              | 1,8                               |
| 20                                    | ¾"                                    | 25,0                            | 150,0                               | 7                             | 0,1                                     | 8                                   | 690                              | 1,1                               | 530                              | 1,9                               |
| 25                                    | 1"                                    | 25,0                            | 15,0                                | 9                             | 0,3                                     | 11                                  | 390                              | 0,8                               | 230                              | 1,7                               |
| 25                                    | 1"                                    | 25,0                            | 25,0                                | 9                             | 0,3                                     | 11                                  | 410                              | 0,8                               | 250                              | 1,8                               |
| 25                                    | 1"                                    | 25,0                            | 50,0                                | 9                             | 0,1                                     | 11                                  | 500                              | 1,0                               | 340                              | 2,0                               |
| 25                                    | 1"                                    | 25,0                            | 75,0                                | 9                             | 0,1                                     | 11                                  | 570                              | 1,2                               | 410                              | 2,2                               |
| 25                                    | 1"                                    | 25,0                            | 100,0                               | 9                             | 0,1                                     | 11                                  | 630                              | 1,4                               | 470                              | 2,3                               |
| 25                                    | 1"                                    | 25,0                            | 150,0                               | 9                             | 0,1                                     | 11                                  | 750                              | 1,7                               | 590                              | 2,6                               |
| 32                                    | 1 ¼"                                  | 25,0                            | 15,0                                | 8                             | 0,4                                     | 17                                  | 390                              | 1,1                               | 230                              | 2,9                               |
| 32                                    | 1 ¼"                                  | 25,0                            | 25,0                                | 8                             | 0,3                                     | 17                                  | 430                              | 1,2                               | 270                              | 3,0                               |
| 32                                    | 1 ¼"                                  | 25,0                            | 50,0                                | 8                             | 0,1                                     | 17                                  | 550                              | 1,6                               | 390                              | 3,4                               |
| 32                                    | 1 ¼"                                  | 25,0                            | 75,0                                | 8                             | 0,1                                     | 17                                  | 590                              | 1,7                               | 430                              | 3,6                               |
| 32                                    | 1 ¼"                                  | 25,0                            | 100,0                               | 8                             | 0,1                                     | 17                                  | 700                              | 2,1                               | 540                              | 4,0                               |
| 32                                    | 1 ¼"                                  | 25,0                            | 150,0                               | 8                             | 0,1                                     | 17                                  | 850                              | 2,6                               | 690                              | 4,5                               |
| 40                                    | 1 ½"                                  | 25,0                            | 15,0                                | 10                            | 0,6                                     | 22                                  | 410                              | 1,3                               | 250                              | 3,4                               |
| 40                                    | 1 ½"                                  | 25,0                            | 25,0                                | 10                            | 0,4                                     | 22                                  | 430                              | 1,4                               | 270                              | 3,5                               |
| 40                                    | 1 ½"                                  | 25,0                            | 50,0                                | 10                            | 0,1                                     | 22                                  | 560                              | 2,0                               | 400                              | 4,0                               |
| 40                                    | 1 ½"                                  | 25,0                            | 75,0                                | 10                            | 0,1                                     | 22                                  | 650                              | 2,3                               | 490                              | 4,4                               |
| 40                                    | 1 ½"                                  | 25,0                            | 100,0                               | 10                            | 0,1                                     | 22                                  | 730                              | 2,7                               | 570                              | 4,7                               |
| 40                                    | 1 ½"                                  | 25,0                            | 150,0                               | 10                            | 0,1                                     | 22                                  | 850                              | 3,2                               | 690                              | 5,2                               |
| 50                                    | 2"                                    | 25,0                            | 15,0                                | 19                            | 1,4                                     | 36                                  | 440                              | 2,0                               | 280                              | 4,1                               |
| 50                                    | 2"                                    | 25,0                            | 25,0                                | 19                            | 0,9                                     | 36                                  | 480                              | 2,2                               | 320                              | 4,3                               |
| 50                                    | 2"                                    | 25,0                            | 50,0                                | 19                            | 0,4                                     | 36                                  | 610                              | 2,9                               | 450                              | 5,0                               |
| 50                                    | 2"                                    | 25,0                            | 75,0                                | 19                            | 0,3                                     | 36                                  | 660                              | 3,2                               | 500                              | 5,3                               |
| 50                                    | 2"                                    | 25,0                            | 100,0                               | 19                            | 0,1                                     | 36                                  | 860                              | 4,3                               | 700                              | 6,4                               |
| 50                                    | 2"                                    | 25,0                            | 150,0                               | 19                            | 0,1                                     | 36                                  | 1 060                            | 5,4                               | 900                              | 7,5                               |
| 65                                    | 2 ½"                                  | 25,0                            | 15,0                                | 13                            | 1,2                                     | 53                                  | 460                              | 3,0                               | 300                              | 5,4                               |
| 65                                    | 2 ½"                                  | 25,0                            | 25,0                                | 13                            | 0,8                                     | 53                                  | 500                              | 3,4                               | 340                              | 5,8                               |
| 65                                    | 2 ½"                                  | 25,0                            | 50,0                                | 13                            | 0,3                                     | 53                                  | 650                              | 4,7                               | 490                              | 7,1                               |
| 65                                    | 2 ½"                                  | 25,0                            | 75,0                                | 13                            | 0,2                                     | 53                                  | 730                              | 5,4                               | 570                              | 7,8                               |
| 65                                    | 2 ½"                                  | 25,0                            | 100,0                               | 13                            | 0,1                                     | 53                                  | 880                              | 6,7                               | 720                              | 9,1                               |
| 65                                    | 2 ½"                                  | 25,0                            | 150,0                               | 13                            | 0,1                                     | 53                                  | 1 080                            | 8,4                               | 920                              | 11,0                              |
| 80                                    | 3"                                    | 25,0                            | 15,0                                | 12                            | 1,4                                     | 76                                  | 480                              | 4,3                               | 320                              | 7,8                               |
| 80                                    | 3"                                    | 25,0                            | 25,0                                | 12                            | 1,0                                     | 76                                  | 520                              | 4,8                               | 360                              | 8,2                               |
| 80                                    | 3"                                    | 25,0                            | 50,0                                | 12                            | 0,3                                     | 76                                  | 700                              | 6,8                               | 540                              | 10,0                              |
| 80                                    | 3"                                    | 25,0                            | 75,0                                | 12                            | 0,3                                     | 76                                  | 750                              | 7,4                               | 590                              | 11,0                              |
| 80                                    | 3"                                    | 25,0                            | 100,0                               | 12                            | 0,1                                     | 76                                  | 1 000                            | 10,0                              | 840                              | 14,0                              |
| 80                                    | 3"                                    | 25,0                            | 150,0                               | 12                            | 0,1                                     | 76                                  | 1 100                            | 11,0                              | 940                              | 15,0                              |
| 100                                   | 4"                                    | 25,0                            | 15,0                                | 24                            | 2,4                                     | 122                                 | 650                              | 7,9                               | 450                              | 10,0                              |
| 100                                   | 4"                                    | 25,0                            | 25,0                                | 24                            | 1,9                                     | 122                                 | 690                              | 8,5                               | 490                              | 11,0                              |
| 100                                   | 4"                                    | 25,0                            | 50,0                                | 24                            | 0,8                                     | 122                                 | 870                              | 11,0                              | 670                              | 14,0                              |
| 100                                   | 4"                                    | 25,0                            | 75,0                                | 24                            | 0,6                                     | 122                                 | 920                              | 12,0                              | 720                              | 15,0                              |
| 100                                   | 4"                                    | 25,0                            | 100,0                               | 24                            | 0,5                                     | 122                                 | 970                              | 13,0                              | 770                              | 16,0                              |
| 100                                   | 4"                                    | 25,0                            | 150,0                               | 24                            | 0,4                                     | 122                                 | 1 070                            | 15,0                              | 870                              | 17,0                              |

PN 1

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Axiálny pohyb<br>Axial movement | Laterálny pohyb<br>Lateral movement | Axiálna tuhosť<br>Spring rate | Laterálna tuhosť<br>Lateral spring rate | Efektívny prierez<br>Effective area | MWD                              |                                   | MFD                              |                                   |
|---------------------------------------|---------------------------------------|---------------------------------|-------------------------------------|-------------------------------|-----------------------------------------|-------------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|
| DN                                    | DN                                    |                                 |                                     |                               |                                         |                                     | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight |
| mm                                    | inch                                  | ± mm                            | ± mm                                | N/mm                          | N/mm                                    | cm <sup>2</sup>                     | mm                               | kg                                | mm                               | kg                                |
| 125                                   | 5"                                    | 25,0                            | 15,0                                | 58                            | 12,9                                    | 181                                 | 650                              | 12,0                              | 450                              | 15,0                              |
| 125                                   | 5"                                    | 25,0                            | 25,0                                | 58                            | 10,0                                    | 181                                 | 690                              | 13,0                              | 490                              | 16,0                              |
| 125                                   | 5"                                    | 25,0                            | 50,0                                | 58                            | 2,7                                     | 181                                 | 870                              | 15,0                              | 670                              | 18,0                              |
| 125                                   | 5"                                    | 25,0                            | 75,0                                | 58                            | 1,9                                     | 181                                 | 970                              | 17,0                              | 770                              | 20,0                              |
| 125                                   | 5"                                    | 25,0                            | 100,0                               | 58                            | 1,6                                     | 181                                 | 1 020                            | 18,0                              | 820                              | 21,0                              |
| 125                                   | 5"                                    | 25,0                            | 150,0                               | 58                            | 1,1                                     | 181                                 | 1 170                            | 22,0                              | 970                              | 25,0                              |
| 150                                   | 6"                                    | 25,0                            | 15,0                                | 77                            | 12,7                                    | 257                                 | 700                              | 14,0                              | 500                              | 17,0                              |
| 150                                   | 6"                                    | 25,0                            | 25,0                                | 77                            | 9,6                                     | 257                                 | 750                              | 15,0                              | 550                              | 18,0                              |
| 150                                   | 6"                                    | 25,0                            | 50,0                                | 77                            | 4,9                                     | 257                                 | 900                              | 19,0                              | 700                              | 22,0                              |
| 150                                   | 6"                                    | 25,0                            | 75,0                                | 77                            | 2,9                                     | 257                                 | 1 050                            | 23,0                              | 850                              | 26,0                              |
| 150                                   | 6"                                    | 25,0                            | 100,0                               | 77                            | 2,5                                     | 257                                 | 1 100                            | 24,0                              | 900                              | 27,0                              |
| 150                                   | 6"                                    | 25,0                            | 150,0                               | 77                            | 1,4                                     | 257                                 | 1 350                            | 30,0                              | 1 150                            | 33,0                              |
| 200                                   | 8"                                    | 37,5                            | 15,0                                | 58                            | 14,4                                    | 433                                 | 730                              | 19,0                              | 530                              | 23,0                              |
| 200                                   | 8"                                    | 37,5                            | 25,0                                | 58                            | 11,1                                    | 433                                 | 780                              | 21,0                              | 580                              | 25,0                              |
| 200                                   | 8"                                    | 37,5                            | 50,0                                | 58                            | 5,2                                     | 433                                 | 960                              | 27,0                              | 760                              | 31,0                              |
| 200                                   | 8"                                    | 37,5                            | 75,0                                | 58                            | 3,1                                     | 433                                 | 1 130                            | 32,0                              | 930                              | 36,0                              |
| 200                                   | 8"                                    | 37,5                            | 100,0                               | 58                            | 1,9                                     | 433                                 | 1 330                            | 39,0                              | 1 130                            | 43,0                              |
| 200                                   | 8"                                    | 37,5                            | 150,0                               | 58                            | 1,3                                     | 433                                 | 1 530                            | 45,0                              | 1 330                            | 49,0                              |
| 250                                   | 10"                                   | 37,5                            | 15,0                                | 61                            | 18,8                                    | 659                                 | 7 802                            | 6,0                               | 580                              | 30,0                              |
| 250                                   | 10"                                   | 37,5                            | 25,0                                | 61                            | 14,1                                    | 659                                 | 840                              | 28,0                              | 640                              | 33,0                              |
| 250                                   | 10"                                   | 37,5                            | 50,0                                | 61                            | 7,3                                     | 659                                 | 1 010                            | 35,0                              | 810                              | 40,0                              |
| 250                                   | 10"                                   | 37,5                            | 75,0                                | 61                            | 4,1                                     | 659                                 | 1 210                            | 43,0                              | 1 010                            | 48,0                              |
| 250                                   | 10"                                   | 37,5                            | 100,0                               | 61                            | 2,6                                     | 659                                 | 1 410                            | 51,0                              | 1 210                            | 56,0                              |
| 250                                   | 10"                                   | 37,5                            | 150,0                               | 61                            | 1,7                                     | 659                                 | 1 660                            | 60,0                              | 1 460                            | 65,0                              |
| 300                                   | 12"                                   | 37,5                            | 15,0                                | 61                            | 24,1                                    | 916                                 | 810                              | 32,0                              | 610                              | 44,0                              |
| 300                                   | 12"                                   | 37,5                            | 25,0                                | 61                            | 16,8                                    | 916                                 | 890                              | 36,0                              | 690                              | 48,0                              |
| 300                                   | 12"                                   | 37,5                            | 50,0                                | 61                            | 9,2                                     | 916                                 | 1 060                            | 44,0                              | 860                              | 56,0                              |
| 300                                   | 12"                                   | 37,5                            | 75,0                                | 61                            | 4,9                                     | 916                                 | 1 290                            | 55,0                              | 1 090                            | 65,0                              |
| 300                                   | 12"                                   | 37,5                            | 100,0                               | 61                            | 3,3                                     | 916                                 | 1 490                            | 65,0                              | 1 290                            | 75,0                              |
| 300                                   | 12"                                   | 37,5                            | 150,0                               | 61                            | 1,7                                     | 916                                 | 1 890                            | 85,0                              | 1 690                            | 95,0                              |
| 350                                   | 14"                                   | 37,5                            | 15,0                                | 51                            | 19,2                                    | 1 106                               | 870                              | 38,0                              | 670                              | 56,0                              |
| 350                                   | 14"                                   | 37,5                            | 25,0                                | 51                            | 12,9                                    | 1 106                               | 970                              | 43,0                              | 770                              | 60,0                              |
| 350                                   | 14"                                   | 37,5                            | 50,0                                | 51                            | 7,9                                     | 1 106                               | 1 120                            | 51,0                              | 920                              | 70,0                              |
| 350                                   | 14"                                   | 37,5                            | 75,0                                | 51                            | 3,8                                     | 1 106                               | 1 420                            | 65,0                              | 1 220                            | 85,0                              |
| 350                                   | 14"                                   | 37,5                            | 100,0                               | 51                            | 2,6                                     | 1 106                               | 1 620                            | 75,0                              | 1 420                            | 95,0                              |
| 350                                   | 14"                                   | 37,5                            | 150,0                               | 51                            | 1,5                                     | 1 106                               | 2 020                            | 100,0                             | 1 820                            | 115,0                             |
| 400                                   | 16"                                   | 37,5                            | 15,0                                | 154                           | 61,0                                    | 1 451                               | 1 000                            | 70,0                              | 760                              | 85,0                              |
| 400                                   | 16"                                   | 37,5                            | 25,0                                | 154                           | 43,0                                    | 1 451                               | 1 100                            | 75,0                              | 860                              | 90,0                              |
| 400                                   | 16"                                   | 37,5                            | 50,0                                | 154                           | 27,4                                    | 1 451                               | 1 250                            | 85,0                              | 1 010                            | 100,0                             |
| 400                                   | 16"                                   | 37,5                            | 75,0                                | 154                           | 13,8                                    | 1 451                               | 1 550                            | 100,0                             | 1 310                            | 120,0                             |
| 400                                   | 16"                                   | 37,5                            | 100,0                               | 154                           | 9,7                                     | 1 451                               | 1 750                            | 115,0                             | 1 510                            | 130,0                             |
| 400                                   | 16"                                   | 37,5                            | 150,0                               | 154                           | 5,5                                     | 1 451                               | 2 150                            | 135,0                             | 1 910                            | 155,0                             |
| 500                                   | 20"                                   | 50,0                            | 15,0                                | 170                           | 86,0                                    | 2 226                               | 1 050                            | 90,0                              | 810                              | 110,0                             |
| 500                                   | 20"                                   | 50,0                            | 25,0                                | 170                           | 68,0                                    | 2 226                               | 1 120                            | 95,0                              | 880                              | 115,0                             |
| 500                                   | 20"                                   | 50,0                            | 50,0                                | 170                           | 40,7                                    | 2 226                               | 1 300                            | 110,0                             | 1 060                            | 130,0                             |
| 500                                   | 20"                                   | 50,0                            | 75,0                                | 170                           | 21,3                                    | 2 226                               | 1 600                            | 130,0                             | 1 360                            | 155,0                             |
| 500                                   | 20"                                   | 50,0                            | 100,0                               | 170                           | 14,0                                    | 2 226                               | 1 850                            | 150,0                             | 1 610                            | 170,0                             |
| 500                                   | 20"                                   | 50,0                            | 150,0                               | 170                           | 7,4                                     | 2 226                               | 2 350                            | 190,0                             | 2 110                            | 210,0                             |
| 600                                   | 24"                                   | 50,0                            | 15,0                                | 181                           | 131,0                                   | 3 167                               | 1 050                            | 110,0                             | 810                              | 135,0                             |
| 600                                   | 24"                                   | 50,0                            | 25,0                                | 181                           | 81,0                                    | 3 167                               | 1 200                            | 125,0                             | 960                              | 150,0                             |
| 600                                   | 24"                                   | 50,0                            | 50,0                                | 181                           | 43,5                                    | 3 167                               | 1 450                            | 145,0                             | 1 210                            | 175,0                             |
| 600                                   | 24"                                   | 50,0                            | 75,0                                | 181                           | 24,8                                    | 3 167                               | 1 750                            | 175,0                             | 1 510                            | 200,0                             |
| 600                                   | 24"                                   | 50,0                            | 100,0                               | 181                           | 16,0                                    | 3 167                               | 2 050                            | 200,0                             | 1 810                            | 230,0                             |
| 600                                   | 24"                                   | 50,0                            | 150,0                               | 181                           | 9,0                                     | 3 167                               | 2 550                            | 245,0                             | 2 310                            | 275,0                             |

## PN 1

| Menovitá svetlosť<br>Nominal diameter | Menovitá svetlosť<br>Nominal diameter | Axiálny pohyb<br>Axial movement | Laterálny pohyb<br>Lateral movement | Axiálna tuhosť<br>Spring rate | Laterálna tuhosť<br>Lateral spring rate | Efektívny prierez<br>Effective area | MWD                              |                                   | MFD                              |                                   |
|---------------------------------------|---------------------------------------|---------------------------------|-------------------------------------|-------------------------------|-----------------------------------------|-------------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|
| DN                                    | DN                                    | ± mm                            | ± mm                                | N/mm                          | N/mm                                    | cm <sup>2</sup>                     | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight |
| mm                                    | inch                                  |                                 |                                     |                               |                                         |                                     | mm                               | kg                                | mm                               | kg                                |
| 700                                   | 28"                                   | 50,0                            | 15,0                                | 132                           | 120,0                                   | 4 266                               | 1 070                            | 110,0                             | 830                              | 140,0                             |
| 700                                   | 28"                                   | 50,0                            | 25,0                                | 132                           | 69,0                                    | 4 266                               | 1 250                            | 130,0                             | 1 010                            | 160,0                             |
| 700                                   | 28"                                   | 50,0                            | 50,0                                | 132                           | 34,9                                    | 4 266                               | 1 550                            | 160,0                             | 1 310                            | 195,0                             |
| 700                                   | 28"                                   | 50,0                            | 75,0                                | 132                           | 18,1                                    | 4 266                               | 1 950                            | 200,0                             | 1 710                            | 235,0                             |
| 700                                   | 28"                                   | 50,0                            | 100,0                               | 132                           | 12,3                                    | 4 266                               | 2 250                            | 235,0                             | 2 010                            | 265,0                             |
| 700                                   | 28"                                   | 50,0                            | 150,0                               | 132                           | 6,8                                     | 4 266                               | 2 850                            | 300,0                             | 2 610                            | 330,0                             |
| 800                                   | 32"                                   | 50,0                            | 15,0                                | 136                           | 144,0                                   | 5 536                               | 1 100                            | 130,0                             | 860                              | 175,0                             |
| 800                                   | 32"                                   | 50,0                            | 25,0                                | 136                           | 72,0                                    | 5 536                               | 1 350                            | 160,0                             | 1 110                            | 205,0                             |
| 800                                   | 32"                                   | 50,0                            | 50,0                                | 136                           | 38,6                                    | 5 536                               | 1 650                            | 195,0                             | 1 410                            | 240,0                             |
| 800                                   | 32"                                   | 50,0                            | 75,0                                | 136                           | 18,5                                    | 5 536                               | 2 150                            | 255,0                             | 1 910                            | 300,0                             |
| 800                                   | 32"                                   | 50,0                            | 100,0                               | 136                           | 13,1                                    | 5 536                               | 2 450                            | 295,0                             | 2 210                            | 335,0                             |
| 800                                   | 32"                                   | 50,0                            | 150,0                               | 136                           | 6,5                                     | 5 536                               | 3 250                            | 390,0                             | 3 010                            | 435,0                             |
| 900                                   | 36"                                   | 50,0                            | 15,0                                | 137                           | 157,0                                   | 6 972                               | 1 150                            | 155,0                             | 910                              | 200,0                             |
| 900                                   | 36"                                   | 50,0                            | 25,0                                | 137                           | 73,0                                    | 6 972                               | 1 450                            | 195,0                             | 1 210                            | 240,0                             |
| 900                                   | 36"                                   | 50,0                            | 50,0                                | 137                           | 41,6                                    | 6 972                               | 1 750                            | 235,0                             | 1 510                            | 285,0                             |
| 900                                   | 36"                                   | 50,0                            | 75,0                                | 137                           | 18,7                                    | 6 972                               | 2 350                            | 315,0                             | 2 110                            | 365,0                             |
| 900                                   | 36"                                   | 50,0                            | 100,0                               | 137                           | 13,8                                    | 6 972                               | 2 650                            | 360,0                             | 2 410                            | 405,0                             |
| 900                                   | 36"                                   | 50,0                            | 150,0                               | 137                           | 6,8                                     | 6 972                               | 3 550                            | 480,0                             | 3 310                            | 530,0                             |
| 1000                                  | 40"                                   | 50,0                            | 15,0                                | 126                           | 152,0                                   | 8 573                               | 1 200                            | 210,0                             | 960                              | 250,0                             |
| 1000                                  | 40"                                   | 50,0                            | 25,0                                | 126                           | 67,0                                    | 8 573                               | 1 550                            | 280,0                             | 1 310                            | 320,0                             |
| 1000                                  | 40"                                   | 50,0                            | 50,0                                | 126                           | 39,9                                    | 8 573                               | 1 850                            | 340,0                             | 1 610                            | 380,0                             |
| 1000                                  | 40"                                   | 50,0                            | 75,0                                | 126                           | 17,0                                    | 8 573                               | 2 550                            | 485,0                             | 2 310                            | 520,0                             |
| 1000                                  | 40"                                   | 50,0                            | 100,0                               | 126                           | 12,9                                    | 8 573                               | 2 850                            | 545,0                             | 2 610                            | 585,0                             |
| 1000                                  | 40"                                   | 50,0                            | 150,0                               | 126                           | 6,7                                     | 8 573                               | 3 750                            | 725,0                             | 3 510                            | 765,0                             |
| 1100                                  | 44"                                   | 50,0                            | 15,0                                | 126                           | 170,0                                   | 10 383                              | 1 230                            | 240,0                             | 990                              | 280,0                             |
| 1100                                  | 44"                                   | 50,0                            | 25,0                                | 126                           | 74,0                                    | 10 383                              | 1 600                            | 320,0                             | 1 360                            | 360,0                             |
| 1100                                  | 44"                                   | 50,0                            | 50,0                                | 126                           | 41,9                                    | 10 383                              | 1 950                            | 400,0                             | 1 710                            | 440,0                             |
| 1100                                  | 44"                                   | 50,0                            | 75,0                                | 126                           | 18,8                                    | 10 383                              | 2 650                            | 555,0                             | 2 410                            | 595,0                             |
| 1100                                  | 44"                                   | 50,0                            | 100,0                               | 126                           | 13,3                                    | 10 383                              | 3 050                            | 645,0                             | 2 810                            | 685,0                             |
| 1100                                  | 44"                                   | 50,0                            | 150,0                               | 126                           | 7,6                                     | 10 383                              | 3 850                            | 825,0                             | 3 610                            | 865,0                             |
| 1200                                  | 48"                                   | 50,0                            | 15,0                                | 115                           | 174,0                                   | 12 307                              | 1 250                            | 270,0                             | 1 010                            | 310,0                             |
| 1200                                  | 48"                                   | 50,0                            | 25,0                                | 115                           | 73,0                                    | 12 307                              | 1 650                            | 365,0                             | 1 410                            | 410,0                             |
| 1200                                  | 48"                                   | 50,0                            | 50,0                                | 115                           | 39,6                                    | 12 307                              | 2 050                            | 465,0                             | 1 810                            | 505,0                             |
| 1200                                  | 48"                                   | 50,0                            | 75,0                                | 115                           | 15,6                                    | 12 307                              | 2 950                            | 685,0                             | 2 710                            | 725,0                             |
| 1200                                  | 48"                                   | 50,0                            | 100,0                               | 115                           | 13,3                                    | 12 307                              | 3 150                            | 730,0                             | 2 910                            | 775,0                             |
| 1200                                  | 48"                                   | 50,0                            | 150,0                               | 115                           | 8,3                                     | 12 307                              | 3 850                            | 900,0                             | 3 610                            | 945,0                             |
| 1300                                  | 52"                                   | 50,0                            | 15,0                                | 85                            | 134,0                                   | 14 565                              | 1 340                            | 325,0                             | 1 100                            | 370,0                             |
| 1300                                  | 52"                                   | 50,0                            | 25,0                                | 85                            | 59,0                                    | 14 565                              | 1 740                            | 430,0                             | 1 500                            | 475,0                             |
| 1300                                  | 52"                                   | 50,0                            | 50,0                                | 85                            | 32,6                                    | 14 565                              | 2 140                            | 535,0                             | 1 900                            | 585,0                             |
| 1300                                  | 52"                                   | 50,0                            | 75,0                                | 85                            | 13,1                                    | 14 565                              | 3 040                            | 775,0                             | 2 800                            | 820,0                             |
| 1300                                  | 52"                                   | 50,0                            | 100,0                               | 85                            | 11,2                                    | 14 565                              | 3 240                            | 825,0                             | 3 000                            | 875,0                             |
| 1300                                  | 52"                                   | 50,0                            | 150,0                               | 85                            | 7,0                                     | 14 565                              | 3 940                            | 1 010,0                           | 3 700                            | 1 060,0                           |
| 1400                                  | 56"                                   | 50,0                            | 15,0                                | 91                            | 146,0                                   | 16 783                              | 1 390                            | 365,0                             | 1 150                            | 415,0                             |
| 1400                                  | 56"                                   | 50,0                            | 25,0                                | 91                            | 67,0                                    | 16 783                              | 1 790                            | 480,0                             | 1 550                            | 525,0                             |
| 1400                                  | 56"                                   | 50,0                            | 50,0                                | 91                            | 35,7                                    | 16 783                              | 2 240                            | 605,0                             | 2 000                            | 655,0                             |
| 1400                                  | 56"                                   | 50,0                            | 75,0                                | 91                            | 15,0                                    | 16 783                              | 3 140                            | 860,0                             | 2 900                            | 910,0                             |
| 1400                                  | 56"                                   | 50,0                            | 100,0                               | 91                            | 9,8                                     | 16 783                              | 3 740                            | 1 030,0                           | 3 500                            | 1 080,0                           |
| 1400                                  | 56"                                   | 50,0                            | 150,0                               | 91                            | 7,3                                     | 16 783                              | 4 240                            | 1 175,0                           | 4 000                            | 1 225,0                           |
| 1500                                  | 60"                                   | 50,0                            | 15,0                                | 98                            | 159,0                                   | 19 158                              | 1 440                            | 405,0                             | 1 200                            | 470,0                             |
| 1500                                  | 60"                                   | 50,0                            | 25,0                                | 98                            | 75,0                                    | 19 158                              | 1 840                            | 530,0                             | 1 600                            | 590,0                             |
| 1500                                  | 60"                                   | 50,0                            | 50,0                                | 98                            | 38,7                                    | 19 158                              | 2 340                            | 680,0                             | 2 100                            | 745,0                             |
| 1500                                  | 60"                                   | 50,0                            | 75,0                                | 98                            | 15,7                                    | 19 158                              | 3 340                            | 985,0                             | 3 100                            | 1 050,0                           |
| 1500                                  | 60"                                   | 50,0                            | 100,0                               | 98                            | 10,6                                    | 19 158                              | 3 940                            | 1 165,0                           | 3 700                            | 1 230,0                           |
| 1500                                  | 60"                                   | 50,0                            | 150,0                               | 98                            | 7,6                                     | 19 158                              | 4 540                            | 1 350,0                           | 4 300                            | 1 415,0                           |

PN 1

| Menovitá svetlost'<br>Nominal diametr | Menovitá svetlost'<br>Nominal diametr | Axiálny pohyb<br>Axial movement | Laterálny pohyb<br>Lateral movement | Axiálna tuhosť<br>Spring rate | Laterálna tuhosť<br>Lateral spring rate | Efektívny prierez<br>Effective area | MWD                              |                                   | MFD                              |                                   |
|---------------------------------------|---------------------------------------|---------------------------------|-------------------------------------|-------------------------------|-----------------------------------------|-------------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|
| DN                                    | DN                                    |                                 |                                     |                               |                                         |                                     | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight |
| mm                                    | inch                                  | ± mm                            | ± mm                                | N/mm                          | N/mm                                    | cm <sup>2</sup>                     | mm                               | kg                                | mm                               | kg                                |
| 1600                                  | 64"                                   | 50,0                            | 15,0                                | 104                           | 172,0                                   | 21 689                              | 1 490                            | 450,0                             | 1 250                            | 515,0                             |
| 1600                                  | 64"                                   | 50,0                            | 25,0                                | 104                           | 84,0                                    | 21 689                              | 1 890                            | 580,0                             | 1 650                            | 645,0                             |
| 1600                                  | 64"                                   | 50,0                            | 50,0                                | 104                           | 37,6                                    | 21 689                              | 2 540                            | 790,0                             | 2 300                            | 860,0                             |
| 1600                                  | 64"                                   | 50,0                            | 75,0                                | 104                           | 16,5                                    | 21 689                              | 3 540                            | 1 115,0                           | 3 300                            | 1 180,0                           |
| 1600                                  | 64"                                   | 50,0                            | 100,0                               | 104                           | 11,4                                    | 21 689                              | 4 140                            | 1 310,0                           | 3 900                            | 1 375,0                           |
| 1600                                  | 64"                                   | 50,0                            | 150,0                               | 104                           | 7,9                                     | 21 689                              | 4 840                            | 1 535,0                           | 4 600                            | 1 605,0                           |
|                                       |                                       |                                 |                                     |                               |                                         |                                     |                                  |                                   |                                  |                                   |
| 1800                                  | 72"                                   | 50,0                            | 15,0                                | 116                           | 217,0                                   | 27 224                              | 1 540                            | 525,0                             | 1 300                            | 640,0                             |
| 1800                                  | 72"                                   | 50,0                            | 25,0                                | 116                           | 109,0                                   | 27 224                              | 1 940                            | 670,0                             | 1 700                            | 785,0                             |
| 1800                                  | 72"                                   | 50,0                            | 50,0                                | 116                           | 47,9                                    | 27 224                              | 2 640                            | 925,0                             | 2 400                            | 1 040,0                           |
| 1800                                  | 72"                                   | 50,0                            | 75,0                                | 116                           | 20,3                                    | 27 224                              | 3 740                            | 1 325,0                           | 3 500                            | 1 440,0                           |
| 1800                                  | 72"                                   | 50,0                            | 100,0                               | 116                           | 15,1                                    | 27 224                              | 4 240                            | 1 505,0                           | 4 000                            | 1 625,0                           |
| 1800                                  | 72"                                   | 50,0                            | 150,0                               | 116                           | 9,3                                     | 27 224                              | 5 240                            | 1 870,0                           | 5 000                            | 1 990,0                           |
|                                       |                                       |                                 |                                     |                               |                                         |                                     |                                  |                                   |                                  |                                   |
| 2000                                  | 80"                                   | 50,0                            | 15,0                                | 129                           | 267,0                                   | 33 387                              | 1 590                            | 600,0                             | 1 350                            | 730,0                             |
| 2000                                  | 80"                                   | 50,0                            | 25,0                                | 129                           | 149,0                                   | 33 387                              | 1 940                            | 745,0                             | 1 700                            | 870,0                             |
| 2000                                  | 80"                                   | 50,0                            | 50,0                                | 129                           | 59,0                                    | 33 387                              | 2 740                            | 1 065,0                           | 2 500                            | 1 195,0                           |
| 2000                                  | 80"                                   | 50,0                            | 75,0                                | 129                           | 25,9                                    | 33 387                              | 3 840                            | 1 510,0                           | 3 600                            | 1 640,0                           |
| 2000                                  | 80"                                   | 50,0                            | 100,0                               | 129                           | 18,5                                    | 33 387                              | 4 440                            | 1 755,0                           | 4 200                            | 1 880,0                           |
| 2000                                  | 80"                                   | 50,0                            | 150,0                               | 129                           | 10,3                                    | 33 387                              | 5 740                            | 2 280,0                           | 5 500                            | 2 410,0                           |
|                                       |                                       |                                 |                                     |                               |                                         |                                     |                                  |                                   |                                  |                                   |
| 2200                                  | 88"                                   | 50,0                            | 15,0                                | 141                           | 247,0                                   | 40 179                              | 1 790                            | 750,0                             | 1 550                            | 910,0                             |
| 2200                                  | 88"                                   | 50,0                            | 25,0                                | 141                           | 171,0                                   | 40 179                              | 2 040                            | 860,0                             | 1 800                            | 1 025,0                           |
| 2200                                  | 88"                                   | 50,0                            | 50,0                                | 141                           | 86,0                                    | 40 179                              | 2 640                            | 1 130,0                           | 2 400                            | 1 290,0                           |
| 2200                                  | 88"                                   | 50,0                            | 75,0                                | 141                           | 32,2                                    | 40 179                              | 3 940                            | 1 705,0                           | 3 700                            | 1 870,0                           |
| 2200                                  | 88"                                   | 50,0                            | 100,0                               | 141                           | 23,2                                    | 40 179                              | 4 540                            | 1 975,0                           | 4 300                            | 2 135,0                           |
| 2200                                  | 88"                                   | 50,0                            | 150,0                               | 141                           | 10,6                                    | 40 179                              | 6 440                            | 2 820,0                           | 6 200                            | 2 980,0                           |
|                                       |                                       |                                 |                                     |                               |                                         |                                     |                                  |                                   |                                  |                                   |
| 2400                                  | 96"                                   | 50,0                            | 15,0                                | 127                           | 243,0                                   | 47 715                              | 1 840                            | 850,0                             | 1 600                            | 1 025,0                           |
| 2400                                  | 96"                                   | 50,0                            | 25,0                                | 127                           | 159,0                                   | 47 715                              | 2 140                            | 995,0                             | 1 900                            | 1 170,0                           |
| 2400                                  | 96"                                   | 50,0                            | 50,0                                | 127                           | 83,0                                    | 47 715                              | 2 740                            | 1 285,0                           | 2 500                            | 1 460,0                           |
| 2400                                  | 96"                                   | 50,0                            | 75,0                                | 127                           | 28,9                                    | 47 715                              | 4 240                            | 2 010,0                           | 4 000                            | 2 190,0                           |
| 2400                                  | 96"                                   | 50,0                            | 100,0                               | 127                           | 22,4                                    | 47 715                              | 4 740                            | 2 255,0                           | 4 500                            | 2 430,0                           |
| 2400                                  | 96"                                   | 50,0                            | 150,0                               | 127                           | 9,6                                     | 47 715                              | 6 940                            | 3 320,0                           | 6 700                            | 3 495,0                           |
|                                       |                                       |                                 |                                     |                               |                                         |                                     |                                  |                                   |                                  |                                   |
| 2600                                  | 104"                                  | 50,0                            | 15,0                                | 247                           | 668,0                                   | 55 772                              | 1 580                            | 805,0                             | 1 340                            | 995,0                             |
| 2600                                  | 104"                                  | 50,0                            | 25,0                                | 247                           | 392,0                                   | 55 772                              | 1 930                            | 990,0                             | 1 690                            | 1 175,0                           |
| 2600                                  | 104"                                  | 50,0                            | 50,0                                | 247                           | 200,0                                   | 55 772                              | 2 530                            | 1 305,0                           | 2 290                            | 1 490,0                           |
| 2600                                  | 104"                                  | 50,0                            | 75,0                                | 247                           | 121,0                                   | 55 772                              | 3 130                            | 1 620,0                           | 2 890                            | 1 805,0                           |
| 2600                                  | 104"                                  | 50,0                            | 100,0                               | 247                           | 49,9                                    | 55 772                              | 4 630                            | 2 405,0                           | 4 390                            | 2 595,0                           |
| 2600                                  | 104"                                  | 50,0                            | 150,0                               | 247                           | 19,6                                    | 55 772                              | 7 130                            | 3 720,0                           | 6 890                            | 3 910,0                           |
|                                       |                                       |                                 |                                     |                               |                                         |                                     |                                  |                                   |                                  |                                   |
| 2800                                  | 112"                                  | 50,0                            | 15,0                                | 179                           | 398,0                                   | 64 323                              | 1 940                            | 1 040,0                           | 1 700                            | 1 365,0                           |
| 2800                                  | 112"                                  | 50,0                            | 25,0                                | 179                           | 238,0                                   | 64 323                              | 2 340                            | 1 265,0                           | 2 100                            | 1 590,0                           |
| 2800                                  | 112"                                  | 50,0                            | 50,0                                | 179                           | 122,0                                   | 64 323                              | 3 040                            | 1 660,0                           | 2 800                            | 1 990,0                           |
| 2800                                  | 112"                                  | 50,0                            | 75,0                                | 179                           | 79,0                                    | 64 323                              | 3 640                            | 2 000,0                           | 3 400                            | 2 325,0                           |
| 2800                                  | 112"                                  | 50,0                            | 100,0                               | 179                           | 35,4                                    | 64 323                              | 5 140                            | 2 850,0                           | 4 900                            | 3 175,0                           |
| 2800                                  | 112"                                  | 50,0                            | 150,0                               | 179                           | 13,6                                    | 64 323                              | 7 940                            | 4 430,0                           | 7 700                            | 4 760,0                           |
|                                       |                                       |                                 |                                     |                               |                                         |                                     |                                  |                                   |                                  |                                   |
| 3000                                  | 120"                                  | 50,0                            | 15,0                                | 158                           | 350,0                                   | 73 772                              | 2 040                            | 1 180,0                           | 1 800                            | 1 530,0                           |
| 3000                                  | 120"                                  | 50,0                            | 25,0                                | 158                           | 216,0                                   | 73 772                              | 2 440                            | 1 425,0                           | 2 200                            | 1 770,0                           |
| 3000                                  | 120"                                  | 50,0                            | 50,0                                | 158                           | 105,0                                   | 73 772                              | 3 240                            | 1 905,0                           | 3 000                            | 2 255,0                           |
| 3000                                  | 120"                                  | 50,0                            | 75,0                                | 158                           | 66,0                                    | 73 772                              | 3 940                            | 2 330,0                           | 3 700                            | 2 680,0                           |
| 3000                                  | 120"                                  | 50,0                            | 100,0                               | 158                           | 32,9                                    | 73 772                              | 5 340                            | 3 180,0                           | 5 100                            | 3 530,0                           |
| 3000                                  | 120"                                  | 50,0                            | 150,0                               | 158                           | 13,0                                    | 73 772                              | 8 140                            | 4 875,0                           | 7 900                            | 5 225,0                           |
|                                       |                                       |                                 |                                     |                               |                                         |                                     |                                  |                                   |                                  |                                   |
| 3200                                  | 128"                                  | 50,0                            | 15,0                                | 168                           | 327,0                                   | 83 715                              | 2 240                            | 1 390,0                           | 2 000                            | 1 760,0                           |
| 3200                                  | 128"                                  | 50,0                            | 25,0                                | 168                           | 213,0                                   | 83 715                              | 2 640                            | 1 645,0                           | 2 400                            | 2 020,0                           |
| 3200                                  | 128"                                  | 50,0                            | 50,0                                | 168                           | 110,0                                   | 83 715                              | 3 440                            | 2 165,0                           | 3 200                            | 2 535,0                           |
| 3200                                  | 128"                                  | 50,0                            | 75,0                                | 168                           | 71,0                                    | 83 715                              | 4 140                            | 2 615,0                           | 3 900                            | 2 985,0                           |
| 3200                                  | 128"                                  | 50,0                            | 100,0                               | 168                           | 38,1                                    | 83 715                              | 5 440                            | 3 455,0                           | 5 200                            | 3 825,0                           |
| 3200                                  | 128"                                  | 50,0                            | 150,0                               | 168                           | 16,6                                    | 83 715                              | 7 940                            | 5 070,0                           | 7 700                            | 5 440,0                           |

## PN 1

| Menovitá svetlost'<br>Nominal diameter | Menovitá svetlost'<br>Nominal diameter | Axiálny pohyb<br>Axial movement | Laterálny pohyb<br>Lateral movement | Axiálna tuhosť<br>Spring rate | Laterálna tuhosť<br>Lateral spring rate | Efektívny prierez<br>Effective area | MWD                              |                                   | MFD                              |                                   |
|----------------------------------------|----------------------------------------|---------------------------------|-------------------------------------|-------------------------------|-----------------------------------------|-------------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|
| DN                                     | DN                                     |                                 |                                     |                               |                                         |                                     | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight | Stavebná dĺžka<br>Overall length | Približná hmotnosť<br>App. weight |
| mm                                     | inch                                   | ± mm                            | ± mm                                | N/mm                          | N/mm                                    | cm <sup>2</sup>                     | mm                               | kg                                | mm                               | kg                                |
| 3400                                   | 136"                                   | 50,0                            | 15,0                                | 158                           | 308,0                                   | 94 340                              | 2 340                            | 1 830,0                           | 2 100                            | 2 180,0                           |
| 3400                                   | 136"                                   | 50,0                            | 25,0                                | 158                           | 187,0                                   | 94 340                              | 2 840                            | 2 255,0                           | 2 600                            | 2 610,0                           |
| 3400                                   | 136"                                   | 50,0                            | 50,0                                | 158                           | 96,0                                    | 94 340                              | 3 740                            | 3 030,0                           | 3 500                            | 3 380,0                           |
| 3400                                   | 136"                                   | 50,0                            | 75,0                                | 158                           | 67,0                                    | 94 340                              | 4 340                            | 3 545,0                           | 4 100                            | 3 895,0                           |
| 3400                                   | 136"                                   | 50,0                            | 100,0                               | 158                           | 37,2                                    | 94 340                              | 5 640                            | 4 655,0                           | 5 400                            | 5 010,0                           |
| 3400                                   | 136"                                   | 50,0                            | 150,0                               | 158                           | 16,2                                    | 94 340                              | 8 240                            | 6 885,0                           | 8 000                            | 7 235,0                           |
| 3600                                   | 144"                                   | 50,0                            | 15,0                                | 279                           | 546,0                                   | 105 583                             | 2 440                            | 2 185,0                           | 2 200                            | 2 585,0                           |
| 3600                                   | 144"                                   | 50,0                            | 25,0                                | 279                           | 312,0                                   | 105 583                             | 3 040                            | 2 730,0                           | 2 800                            | 3 130,0                           |
| 3600                                   | 144"                                   | 50,0                            | 50,0                                | 279                           | 158,0                                   | 105 583                             | 4 040                            | 3 635,0                           | 3 800                            | 4 040,0                           |
| 3600                                   | 144"                                   | 50,0                            | 75,0                                | 279                           | 120,0                                   | 105 583                             | 4 540                            | 4 090,0                           | 4 300                            | 4 490,0                           |
| 3600                                   | 144"                                   | 50,0                            | 100,0                               | 279                           | 68,0                                    | 105 583                             | 5 840                            | 5 270,0                           | 5 600                            | 5 670,0                           |
| 3600                                   | 144"                                   | 50,0                            | 150,0                               | 279                           | 29,7                                    | 105 583                             | 8 540                            | 7 720,0                           | 8 300                            | 8 120,0                           |
| 3800                                   | 152"                                   | 50,0                            | 15,0                                | 294                           | 576,0                                   | 117 416                             | 2 540                            | 2 400,0                           | 2 300                            | 2 950,0                           |
| 3800                                   | 152"                                   | 50,0                            | 25,0                                | 294                           | 313,0                                   | 117 416                             | 3 240                            | 3 075,0                           | 3 000                            | 3 620,0                           |
| 3800                                   | 152"                                   | 50,0                            | 50,0                                | 294                           | 156,0                                   | 117 416                             | 4 340                            | 4 125,0                           | 4 100                            | 4 675,0                           |
| 3800                                   | 152"                                   | 50,0                            | 75,0                                | 294                           | 122,0                                   | 117 416                             | 4 840                            | 4 605,0                           | 4 600                            | 5 155,0                           |
| 3800                                   | 152"                                   | 50,0                            | 100,0                               | 294                           | 71,0                                    | 117 416                             | 6 140                            | 5 850,0                           | 5 900                            | 6 400,0                           |
| 3800                                   | 152"                                   | 50,0                            | 150,0                               | 294                           | 33,1                                    | 117 416                             | 8 740                            | 8 340,0                           | 8 500                            | 8 890,0                           |
| 4000                                   | 160"                                   | 50,0                            | 15,0                                | 309                           | 552,0                                   | 129 813                             | 2 740                            | 3 140,0                           | 2 500                            | 3 665,0                           |
| 4000                                   | 160"                                   | 50,0                            | 25,0                                | 309                           | 315,0                                   | 129 813                             | 3 440                            | 3 985,0                           | 3 200                            | 4 515,0                           |
| 4000                                   | 160"                                   | 50,0                            | 50,0                                | 309                           | 156,0                                   | 129 813                             | 4 640                            | 5 435,0                           | 4 400                            | 5 965,0                           |
| 4000                                   | 160"                                   | 50,0                            | 75,0                                | 309                           | 124,0                                   | 129 813                             | 5 140                            | 6 040,0                           | 4 900                            | 6 570,0                           |
| 4000                                   | 160"                                   | 50,0                            | 100,0                               | 309                           | 75,0                                    | 129 813                             | 6 440                            | 7 610,0                           | 6 200                            | 8 140,0                           |
| 4000                                   | 160"                                   | 50,0                            | 150,0                               | 309                           | 36,7                                    | 129 813                             | 8 940                            | 10 635,0                          | 8 700                            | 11 160,0                          |
| 4200                                   | 168"                                   | 50,0                            | 15,0                                | 324                           | 534,0                                   | 142 899                             | 2 940                            | 3 550,0                           |                                  |                                   |
| 4200                                   | 168"                                   | 50,0                            | 25,0                                | 324                           | 317,0                                   | 142 899                             | 3 640                            | 4 440,0                           |                                  |                                   |
| 4200                                   | 168"                                   | 50,0                            | 50,0                                | 324                           | 156,0                                   | 142 899                             | 4 940                            | 6 090,0                           |                                  |                                   |
| 4200                                   | 168"                                   | 50,0                            | 75,0                                | 324                           | 126,0                                   | 142 899                             | 5 440                            | 6 725,0                           |                                  |                                   |
| 4200                                   | 168"                                   | 50,0                            | 100,0                               | 324                           | 78,0                                    | 142 899                             | 6 740                            | 8 375,0                           |                                  |                                   |
| 4200                                   | 168"                                   | 50,0                            | 150,0                               | 324                           | 38,6                                    | 142 899                             | 9 340                            | 11 670,0                          |                                  |                                   |
| 4500                                   | 180"                                   | 50,0                            | 15,0                                | 347                           | 515,0                                   | 163 707                             | 3 240                            | 4 210,0                           |                                  |                                   |
| 4500                                   | 180"                                   | 50,0                            | 25,0                                | 347                           | 343,0                                   | 163 707                             | 3 840                            | 5 025,0                           |                                  |                                   |
| 4500                                   | 180"                                   | 50,0                            | 50,0                                | 347                           | 168,0                                   | 163 707                             | 5 240                            | 6 930,0                           |                                  |                                   |
| 4500                                   | 180"                                   | 50,0                            | 75,0                                | 347                           | 137,0                                   | 163 707                             | 5 740                            | 7 610,0                           |                                  |                                   |
| 4500                                   | 180"                                   | 50,0                            | 100,0                               | 347                           | 87,0                                    | 163 707                             | 7 040                            | 9 380,0                           |                                  |                                   |
| 4500                                   | 180"                                   | 50,0                            | 150,0                               | 347                           | 41,4                                    | 163 707                             | 9 940                            | 13 320,0                          |                                  |                                   |
| 5000                                   | 200"                                   | 50,0                            | 15,0                                | 385                           | 568,0                                   | 201 528                             | 3 540                            | 5 130,0                           |                                  |                                   |
| 5000                                   | 200"                                   | 50,0                            | 25,0                                | 385                           | 416,0                                   | 201 528                             | 4 040                            | 5 885,0                           |                                  |                                   |
| 5000                                   | 200"                                   | 50,0                            | 50,0                                | 385                           | 202,0                                   | 201 528                             | 5 540                            | 8 150,0                           |                                  |                                   |
| 5000                                   | 200"                                   | 50,0                            | 75,0                                | 385                           | 161,0                                   | 201 528                             | 6 140                            | 9 060,0                           |                                  |                                   |
| 5000                                   | 200"                                   | 50,0                            | 100,0                               | 385                           | 109,0                                   | 201 528                             | 7 340                            | 10 870,0                          |                                  |                                   |
| 5000                                   | 200"                                   | 50,0                            | 150,0                               | 385                           | 53,0                                    | 201 528                             | 10 240                           | 15 250,0                          |                                  |                                   |
| 5500                                   | 220"                                   | 50,0                            | 15,0                                | 423                           | 705,0                                   | 243 275                             | 3 640                            | 5 810,0                           |                                  |                                   |
| 5500                                   | 220"                                   | 50,0                            | 25,0                                | 423                           | 492,0                                   | 243 275                             | 4 240                            | 6 805,0                           |                                  |                                   |
| 5500                                   | 220"                                   | 50,0                            | 50,0                                | 423                           | 238,0                                   | 243 275                             | 5 840                            | 9 465,0                           |                                  |                                   |
| 5500                                   | 220"                                   | 50,0                            | 75,0                                | 423                           | 185,0                                   | 243 275                             | 6 540                            | 10 625,0                          |                                  |                                   |
| 5500                                   | 220"                                   | 50,0                            | 100,0                               | 423                           | 132,0                                   | 243 275                             | 7 640                            | 12 455,0                          |                                  |                                   |
| 5500                                   | 220"                                   | 50,0                            | 150,0                               | 423                           | 66,0                                    | 243 275                             | 10 540                           | 17 270,0                          |                                  |                                   |
| 6000                                   | 240"                                   | 50,0                            | 15,0                                | 461                           | 757,0                                   | 288 950                             | 3 940                            | 6 880,0                           |                                  |                                   |
| 6000                                   | 240"                                   | 50,0                            | 25,0                                | 461                           | 573,0                                   | 288 950                             | 4 440                            | 7 785,0                           |                                  |                                   |
| 6000                                   | 240"                                   | 50,0                            | 50,0                                | 461                           | 276,0                                   | 288 950                             | 6 140                            | 10 865,0                          |                                  |                                   |
| 6000                                   | 240"                                   | 50,0                            | 75,0                                | 461                           | 211,0                                   | 288 950                             | 6 940                            | 12 315,0                          |                                  |                                   |
| 6000                                   | 240"                                   | 50,0                            | 100,0                               | 461                           | 157,0                                   | 288 950                             | 7 940                            | 14 130,0                          |                                  |                                   |
| 6000                                   | 240"                                   | 50,0                            | 150,0                               | 461                           | 79,0                                    | 288 950                             | 10 940                           | 19 565,0                          |                                  |                                   |



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**DOPYTOVÝ FORMULÁR pre kovové kompenzátory**

|                                                                                                                                                                                       |                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| Spoločnosť:                                                                                                                                                                           |                                    |
| Adresa:                                                                                                                                                                               |                                    |
| Meno:                                                                                                                                                                                 | Oddelenie:                         |
| Telefón:                                                                                                                                                                              | Fax/e-mail:                        |
| Dopyt č.:                                                                                                                                                                             | Dátum:                             |
| <b>ŠPECIFIKÁCIA</b>                                                                                                                                                                   |                                    |
| Typ:                                                                                                                                                                                  | Počet ks:                          |
| Menovitá svetlosť (DN):                                                                                                                                                               | Menovitý tlak (PN):                |
| Max. prevádzkový tlak (bar):                                                                                                                                                          | Parametre kolísania tlaku (bar):   |
| Skušobný tlak (bar):                                                                                                                                                                  | Max. prev. teplota (°C):           |
| Pretekajúce médium:                                                                                                                                                                   | Parametre kolísania teploty (°C):  |
| Maximálna stavebná dĺžka (pokiaľ je potrebné dodržať):                                                                                                                                |                                    |
| Dilatácia axiálna (mm): ±                                                                                                                                                             |                                    |
| Angulárna výchylka (°): ±                                                                                                                                                             |                                    |
| Dilatácia laterálna (mm): ±                                                                                                                                                           |                                    |
| Počet predpokladaných pracovných cyklov:                                                                                                                                              |                                    |
| Vnútorne ochranné potrubie (a/n):                                                                                                                                                     | Vonkajšie ochranné potrubie (a/n): |
| Napojenie na nadväzujúce potrubie:                                                                                                                                                    |                                    |
| Vstup                                                                                                                                                                                 | Prírubové - príruha PN:            |
|                                                                                                                                                                                       | Navarovacie - Tr. Ø D x t:         |
|                                                                                                                                                                                       | Materiál:                          |
| Výstup                                                                                                                                                                                | Prírubové - príruha PN:            |
|                                                                                                                                                                                       | Navarovacie - Tr. Ø D x t:         |
|                                                                                                                                                                                       | Materiál:                          |
| Ďalšie upresňujúce údaje (umiestnenie, tlakové rázy alebo iné negatívne a neštandardné vplyvy, požiadavky na dokumentáciu a pod.):                                                    |                                    |
| Prílohy (výkresy, schéma umiestnenia a pod.)                                                                                                                                          |                                    |
| Podpis:                                                                                                                                                                               |                                    |
| <b>Poznámka:</b> Prosíme o čo najstarostlivejšie vyplnenie tohto formulára, pretože akékoľvek nesprávne alebo neúplné údaje môžu mať negatívny vplyv na funkčnosť ponúkaného výrobku. |                                    |