Steel Mains

# STEPOVERS
## TECHNICAL DATA

SINTAKOTE® STEEL PIPELINE SYSTEMS

Steel Mains Steel Pipeline System is available across a full size range and can be tailor-made to suit specific design parameters.

Pipe Stepovers are generally manufactured from pipe depending on diameter and wall thickness required.

The fabricated fitting is 100% non-destructively tested and complies to AS 1579.

SINTAKOTE is the recommended coating for pipe and fittings for the Steel Mains Steel Pipeline System and complies to AS 4321. Alternative coatings are offered where reduced operating life of the pipeline is permissible.

Cement Mortar Lining (CML) is the recommended lining for the Steel Pipeline System pipe and fittings, and complies to AS 1281. Alternative lining systems are available where required.

Special considerations to the jointing and the pipeline system's capabilities need to be confirmed with Pentair prior to proceeding with design.

- Consult the Steel Mains Steel Pipeline Systems Design manual for design information.
- Check withSteel Mains on material availability prior to placing orders.

## GENERAL APPLICATION

Steel Mains Pipe Stepovers for Steel Pipeline Systems are suitable for use with potable water and waste water in above and below ground applications.*

For special application requirements, beyond what is specified in this datasheet, please contact Steel Mains.

*Only applies to Steel Mains recommended coating and lining systems. Please consult the design manual for further details.

## TECHNICAL DATA

**Size Range**
114mm to 2500mm diameter

**Operating Pressures**
Maximum 3500kPa

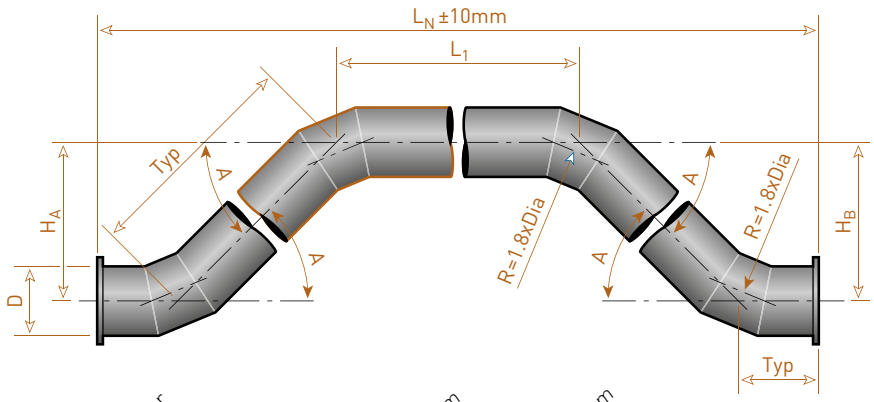
**Maximum Velocities**
6m/s for cement mortar lined fittings

**Operating Temperatures**
-40°C to 70°C

**Certifications:**

AS/NZS ISO 9001
AS/NZS 4020
AS 1579 Standards Mark

## IDENTIFICATION OF STEPOVERS




| Steel fitting | Pipe Stepover | End 'A' type | End 'B' type | Bend angle | Pipe diameter mm | Height. B | Wall thickness mm | Height. A | Step length | Coating | Lining |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Y | P S | 1 | 1 | A | 4 0 6 | 0 | 5 | 5 | 9 | S | C |

**End types**

| | |
|---|---|
| P | Plain end |
| S | Slip-in joint – SO[1] |
| T | Slip-in joint – SP[2] |
| R | Rubber ring joint – SO |
| U | Rubber ring joint – SP |
| B | Ball & Socket – SO |
| A | Ball & Socket ball |
| X | Coupling end |
| C | AS2129-Table C |
| D | AS2129-Table D |
| E | AS2129-Table E |
| F | AS2129-Table F |
| H | AS2129-Table H |
| 1 | AS4087 – Class 14 |
| 2 | AS4087 – Class 21 |
| 3 | AS4087 – Class 35 |

**Bend angle. *A***

| | |
|---|---|
| A | 45 degrees |
| B | 22.5 degrees |
| C | 30 degrees |
| D | 60 degrees |

1 - Socket
2 - Spigot

**Height. $H_B$ mm**

| | |
|---|---|
| 0 | Equal to $H_A$ |
| 1 | 100 |
| 2 | 200 |
| 3 | 300 |
| 4 | 400 |
| 5 | 500 |
| 6 | 600 |
| 7 | 700 |
| 8 | 800 |
| 9 | 900 |
| A | 1000 |
| B | 1100 |
| C | 1200 |
| D | 1300 |
| E | 1400 |
| F | 1500 |

**Wall thickness**

| | |
|---|---|
| 5 | 5mm wall |
| 6 | 6mm wall |
| 8 | 8mm wall |
| A | 10mm wall |
| B | 12mm wall |

**Height. $H_A$ mm**

| | |
|---|---|
| 1 | 100 |
| 2 | 200 |
| 3 | 300 |
| 4 | 400 |
| 5 | 500 |
| 6 | 600 |
| 7 | 700 |
| 8 | 800 |
| 9 | 900 |
| A | 1000 |
| B | 1100 |
| C | 1200 |
| D | 1300 |
| E | 1400 |
| F | 1500 |

**Length. *L***

| | |
|---|---|
| 1 | 1m |
| 2 | 2m |
| 3 | 3m |
| 4 | 4m |
| 5 | 5m |
| 6 | 6m |
| 7 | 7m |
| 8 | 8m |
| 9 | 9m |
| A | 10m |
| B | 11m |
| C | 12m |

**External coating**

| | |
|---|---|
| S | Sintakote |
| U | Uncoated |
| P | Painted |
| G | Galvanised |

**Internal coating**

| | |
|---|---|
| C | Cement mortar |
| S | Sintakote |
| U | Uncoated |
| P | Painted |
| G | Galvanised |

## SPECIFYING STEPOVERS

**1 - End type**

Specify the end types ('A' and 'B') on the Pipe Stepover. Plain or flange is the most commonly used

Specify the paint system for flanges, if applicable. Inorganic zinc paint is included as standard

**2 - Bend angle. *A***

Specify the preferred bend angles for the Pipe Stepover to be used. This is generally determined by the required step height. 45° is most commonly used

**3 - Diameter**

Nominate the steel pipe shell outside diameter required

**4 - Wall thickness**

Nominate the wall thickness of the Pipe Stepover (normally to match the pipeline). Hoop stress at the bends can decrease the operating pressure of the pipe used to manufacture the Stepover (stress concentration factors need to be taklen into consideration)

**5 - Height. $H_A$ and $H_B$**

Specify the step heights at ends 'A' and 'B'

**6 - Length. $L_1$**

Specify the length required for bridging

**7 - Length. $L_N$**

The overall length of the Pipe Stepover is calculated by the following equation

$L_N = L_1+2x(500+½D) + (H_A+H_B)/\tan A$

**8 - Pressure**

Determine the pressure requirements for the Pipe Stepover – PN rating, (eg, PN 16 is equivalent to 1600KPa, 16 bar or approximately 160 metres of head)

**9 - External coating**

Specify the external coating of the Pipe Stepover. SINTAKOTE® is the recommended external coating

**10 - Internal lining**

Specify the internal lining of the Pipe Stepover. Cement mortar lining is the recommended internal lining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