



Pipe Seal

A penetration seal system
for thermoplastic pipes of all types
and sizes up to 500mm Diameter

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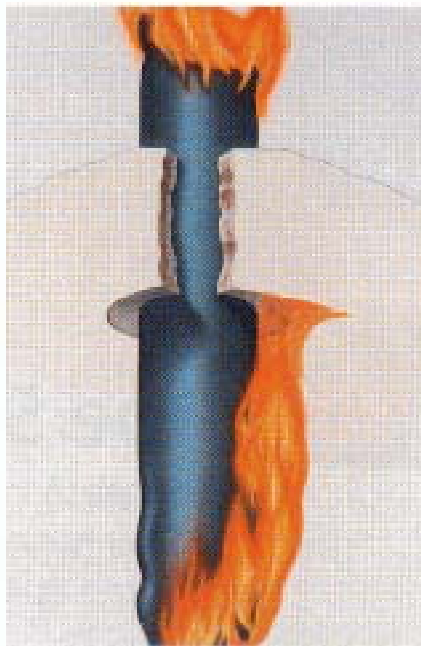
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General Information

To an increasing extent, plastic pipes are replacing steel pipes in modern structures, in industrial facilities as well as in residential buildings. However, despite the many advantages gained through the use of plastic pipes, their one draw-back is that they are **combustible**.



Unsealed - rapid flame spread

Two groups of **thermoplastic pipes** are used today:

- ↑ Propagating ones, such as PE, HDPE, ABS/ASA, PP and
- ↑ Non propagating ones, such as PVC, PVC-C and special PP.

They ignite at rather low temperatures and melt, the propagating ones,, in addition, allow rapid flamespread. Both types permit the passage of fire, hot gases and smoke through wall

and ceiling penetrations after collapsing. They also contribute to the spread of fire horizontally, as melted, burning plastic runs along the floor. The corrosive gases emitted by burning PVC combine with the smoke gases, disseminating rapidly throughout a structure, causing unrepairable damage to electrical and electronic installations.

KBS Pipe Seals are rated 2 hours

The **KBS Pipe Seal** consists, basically, of a round steel casing, supplied in two halves with a heat-expanding inner shell and, in the case of special type M, an additional mechanical strangling device.



Sealed - 2 hours fire resistance

Under heat exposure, the softening pipe is squeezed together by the pressure of the expanding intumescent material and, in case of type M, the double action of the additional mechanical device, preventing the passage of heat, smoke or gases. The continuing expansion of the inner sleeve produces a thick, strong foam, eventually filling the entire penetration in the wall or ceiling for an absolutely tight seal.

KBS Pipe Seal S (standard)

Low cost, small dimension Pipe Seal for pipes up to 250 mm diameter and 23.6 mm wall thickness.



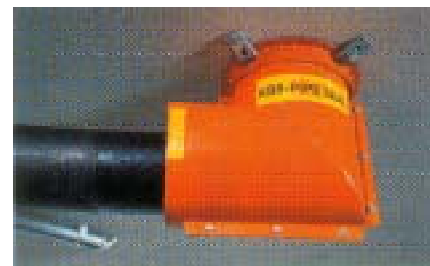
KBS Pipe Seal S and M

KBS Pipe Seal M

The double-action Pipe Seal with the added mechanical strangling device. Basically developed for large diameter pipes – up to 500 mm (!), **KBS Pipe Seal M** can also be used on pipe bundles or pipes with smaller diameters passing at small diagonal angles. The spring-loaded mechanical device, when released by pulling the safety bolts, closes the remaining space between the pipe and seal with a fibre-glass curtain. **KBS Pipe Seal M** has also been tested and rated 2 hours for **one side only** wall penetrations of non-propagating pipes up to 16 mm.

KBS Pipe Seal M-AN

For pipes with 90° elbow bends. **KBS Pipe Seal M-AN** allows installation where the bend is at close distance from the wall or ceiling (consult Installation Instructions for detail).



KBS Pipe Seal M-AN

KBS Pipe Seal M-DI

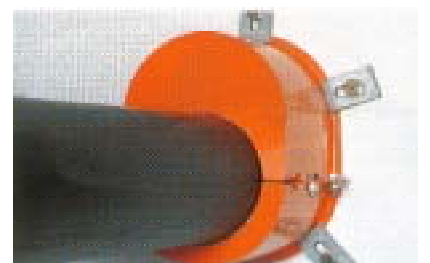
For pipes passing walls or ceilings diagonally. By using a larger diameter **KBS Pipe Seal M-DI**, various exit angles of pipes can be accommodated.



KBS Pipe Seal M-DI

KBS Pipe Seal OSI

For **One Side Installation** in walls. Most pipe seal devices on the market today must be installed on both sides of the wall as a fire may occur on either side. However, there are cases where only one side is accessible. Here **KBS Pipe Seal OSI** is the only solution for propagating pipes up to 200 mm.



KBS Pipe Seal OSI

Installation

KBS Pipe Seals are easily installed. The two halves are positioned over the pipe and joined with the supplied nuts and bolts. Separate mounting brackets allow the choice of suitable positions for the placement of the supplied fire resistant plugs. Detailed instructions with packaging.

- ↑ Tested and rated for pipes up to 500 mm diameter.
- ↑ Small outer dimensions requiring minimum space for installation
- ↑ One seal, type M, can be used for multi-pipe bundles
- ↑ Tested and rated on pneumatic tubes with control and power cable attached
- ↑ Tested and rated on penetrations in light-weight plasterboard walls as well as on penetrations through KBS Panel Seals, KBS Mortar Seals or KBS Sealbag Seals.
- ↑ Only one **KBS Pipe Seal** needed for all ceiling penetrations
- ↑ Tested and rated for diagonal penetrations at various angles
- ↑ Tested and rated on 90° elbow pipes at close distance to ceiling or wall

One wall-side installation

Rated 2 hours for...

- ↑ **KBS Pipe Seal M** with non-propagating pipes up to 110 mm diameter.
- ↑ **KBS Pipe Seal OSI** with non-propagating pipes and **propagating pipes** up to 200 mm diameter.



KBS Pipe Seal M installed on 500mm diameter pipe

KBS Pipe Seal M-DI



Pipe bundle in KBS Pipe Seal M



Pneumatic tube with cables in KBS Pipe Seal M



KBS Pipe Seal M in KBS Sealbag penetration seal

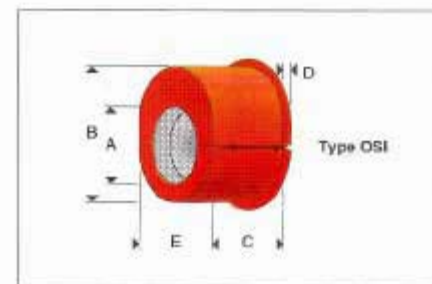
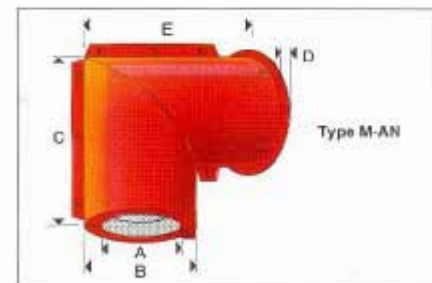
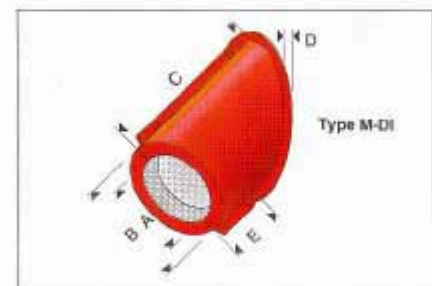
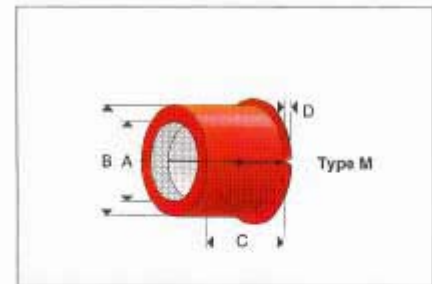
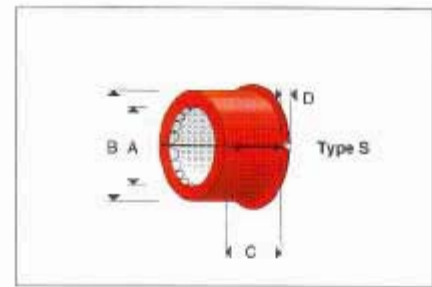
| Type | For pipes up to outside D. | Dimensions | | | | |
|-------|----------------------------------|------------|-----|-----|----|---|
| | | A | B | C | D | E |
| S 050 | 50mm | 53 | 75 | 50 | 10 | - |
| S 063 | 63mm | 66 | 88 | 60 | 10 | - |
| S 075 | 75mm | 78 | 100 | 70 | 10 | - |
| S 090 | 90mm | 93 | 125 | 80 | 10 | - |
| S 110 | 110mm | 113 | 155 | 90 | 10 | - |
| S 125 | 125mm | 128 | 170 | 100 | 10 | - |
| S 140 | 140mm | 143 | 185 | 110 | 10 | - |
| S 160 | 160mm | 163 | 205 | 120 | 10 | - |
| S 180 | 180mm | 183 | 225 | 160 | 15 | - |
| S 200 | 200mm | 203 | 245 | 200 | 15 | - |
| S 250 | 250mm | 253 | 295 | 250 | 15 | - |

| | | | | | | |
|-------|-------|-----|-----|-----|----|---|
| M 050 | 50mm | 53 | 75 | 65 | 10 | - |
| M 063 | 63mm | 66 | 88 | 75 | 10 | - |
| M 075 | 75mm | 78 | 100 | 85 | 10 | - |
| M 090 | 90mm | 93 | 125 | 105 | 10 | - |
| M 110 | 110mm | 113 | 155 | 115 | 10 | - |
| M 125 | 125mm | 128 | 170 | 125 | 10 | - |
| M 140 | 140mm | 143 | 185 | 140 | 10 | - |
| M 160 | 160mm | 163 | 205 | 150 | 10 | - |
| M 180 | 180mm | 183 | 225 | 190 | 15 | - |
| M 200 | 200mm | 203 | 245 | 230 | 15 | - |
| M 225 | 225mm | 228 | 270 | 255 | 15 | - |
| M 250 | 250mm | 253 | 295 | 285 | 15 | - |
| M 280 | 280mm | 283 | 325 | 315 | 15 | - |
| M 315 | 315mm | 318 | 360 | 335 | 15 | - |
| M 355 | 355mm | 358 | 420 | 390 | 15 | - |
| M 400 | 400mm | 403 | 475 | 440 | 15 | - |
| M 500 | 500mm | 505 | 590 | 680 | 20 | - |

| | | | | | | |
|----------|-------|-----|-----|-----|----|-----|
| M-DI 110 | 110mm | 113 | 155 | 185 | 25 | 95 |
| M-DI 200 | 200mm | 203 | 245 | 290 | 25 | 150 |

| | | | | | | |
|----------|-------|-----|-----|-----|----|-----|
| M-AN 075 | 75mm | 90 | 112 | 177 | 20 | 212 |
| M-AN 110 | 110mm | 130 | 172 | 262 | 20 | 292 |
| M-AN 160 | 160mm | 190 | 232 | 352 | 20 | 382 |
| M-AN 200 | 200mm | 240 | 282 | 462 | 25 | 512 |

| | | | | | | |
|---------|-------|-----|-----|-----|----|-----|
| OSI 050 | 50mm | 53 | 107 | 65 | 10 | 75 |
| OSI 063 | 63mm | 66 | 126 | 75 | 10 | 88 |
| OSI 075 | 75mm | 78 | 140 | 85 | 10 | 100 |
| OSI 090 | 90mm | 93 | 167 | 105 | 10 | 125 |
| OSI 110 | 110mm | 113 | 199 | 115 | 10 | 155 |
| OSI 125 | 125mm | 128 | 227 | 125 | 10 | 170 |
| OSI 140 | 140mm | 143 | 252 | 140 | 10 | 185 |
| OSI 160 | 160mm | 163 | 289 | 150 | 10 | 205 |
| OSI 180 | 180mm | 183 | 323 | 190 | 15 | 225 |
| OSI 200 | 200mm | 203 | 359 | 230 | 15 | 245 |





Pipe Seal Selection of International Test Results and Approvals

| KBS Pipe Seal type | Fire and temp. rating (min) | Max. pipe diameter (mm) | | KBS Pipe Seals need for | |
|--------------------|-----------------------------|-------------------------|-----------------|-------------------------|-------------------|
| | | Propagating plastic | Non-propagating | Wall penetrations | Floor penetration |
| S | 120 | | 110 | one side only* | one side only* |
| | 120 | 250 | 250 | both sides | both sides |
| M | 90 | 110 | 200 | one side only* | one side only* |
| | 120 | | 160 | one side only* | one side only* |
| | 120 | 400 | 400 | both sides | underside only |
| | 30 | 500 | 500 | both sides | underside only |
| M-AN | 120 | 200 | 200 | both sides | underside only |
| M-DI | 120 | 200 | 200 | both sides | underside only |
| OSI | 120 | 200 | 200 | one side only* | - |

*Optional

The above data, particularly the recommendations for the application and use of our products are based on our knowledge and experience. Due to different materials and conditions of application, which are beyond our control, we recommend in any case to carry out sufficient tests in order to ensure that our products are suitable for the intended processes and applications. Therefore, any liability for such recommendations or any oral advice is expressly excluded unless we have acted wilfully or by gross negligence.