Sealing Sleeves
Compenseal® and Type KMR 4 pipes
Compenseal® 4 pipes

Product information
Special flexible sealing collar made out of high quality EPDM elastomer for wall penetrations at pipelines which are exposed to movements. The seal is excellently suitable for axial and radial pipe movement as well as settlements and tight against pressing water.

Usage
As a compensator the sealing collar can be used excellently for preinsulated pipe penetration through walls and ceilings on buildings.
- Water pressure tight up to 1,0 bar.

Advantages
- Suitable for axial and radial pipe movement up to +/- 40 mm
- Suitable for settlements depending on outside pipe diameter and core hole sizes up to 40 mm
- Ideal movement compensator

Dimensions
Standard for outside pipe diameter 75 mm up to 800 mm and core bores 150 mm up to 900 mm.

Complete Set:
The seal is supplied with one component PU-Sealant, stainless steel straps, 12 mm stainless steel hexhead screws and 14 mm dowels as a complete set.

The 4 pipes warranty is limited to the replacement of faulty material. The user is fully responsible for the individual application he is using the product for.

<table>
<thead>
<tr>
<th>Product Data</th>
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<tbody>
<tr>
<td>Material</td>
</tr>
<tr>
<td>Pressure plate</td>
</tr>
<tr>
<td>Operating temperature</td>
</tr>
<tr>
<td>Thickness</td>
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<tr>
<td>Durometer Shore A</td>
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<tr>
<td>Elongation at break</td>
</tr>
</tbody>
</table>

Dimensions 4 pipes Compenseal

<table>
<thead>
<tr>
<th>HDPE jacket outer diameter in mm</th>
<th>max. core drilled hole Ø mm</th>
<th>OD wall flange mm</th>
<th>Art.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-90-110</td>
<td>150 / 200</td>
<td>350</td>
<td>20050</td>
</tr>
<tr>
<td>125-140-160</td>
<td>200 / 250</td>
<td>400</td>
<td>20051</td>
</tr>
<tr>
<td>180-200-225</td>
<td>300</td>
<td>450</td>
<td>20052</td>
</tr>
<tr>
<td>250-280-315</td>
<td>350 / 400</td>
<td>565</td>
<td>20053</td>
</tr>
<tr>
<td>355-400</td>
<td>450 / 500</td>
<td>650</td>
<td>20054</td>
</tr>
<tr>
<td>450-500</td>
<td>550 / 600</td>
<td>750</td>
<td>20055</td>
</tr>
<tr>
<td>560-630</td>
<td>650 / 700</td>
<td>880</td>
<td>20056</td>
</tr>
<tr>
<td>670</td>
<td>800</td>
<td>1050</td>
<td>20058</td>
</tr>
<tr>
<td>710-800</td>
<td>800 / 900</td>
<td>1050</td>
<td>20057</td>
</tr>
</tbody>
</table>

Other dimensions on request

Tightened 4 pipes-clamping straps with TOX connection technology. No welding for optimised corrosion protection. (Used for pipe sizes ≥ DN 300)
1. Centre and support media pipe in core bore.

2. Apply pressure plate centered to core bore and mark boreholes at wall/ceiling. After that drill into marks and put dowel inside.

3. Apply sealing compound material on the wall with a hand pistole circular around every screw bore as well as the complete core bore range.

4. If necessary, cut down the seals nozzle to the correct pipe dimension. Pull Compenseal® over the pipe’s end and cut off the seal with a sharp knife along the edge. The edges in the nozzle are not the cutting marks.

5. Push the side of the Compenseal® with flange bore holes first over the media pipe, collar facing the wall. After that interlock Compenseal® with pressure plate and spread emergent sealing compound.

Advice:
- You have to consider that media pipe, the wall/ceiling and Compenseal® are dry during the application as well as fat- and dust-free.
- When laid into the ground the Compenseal® must be covered before backfilling with an expansion cushion to ensure that the seal can move in all directions.
- For media pipe size of 355 mm and bigger, a tightening tool for a 19 mm stainless steel band has to be used.
- The pipe must be supported in front of and behind the wall to avoid setting.

Subject to technical changes
Pipe movements and settings are the big challenges for a pipeline wall penetration seal, especially at pre-isolated warm-going pipelines. The Sealing sleeve type KMR 4 pipes fulfills the high technical requirements to seal wall penetrations secure and permanently, especially in larger dimensions. Necessary for the versatility of the PIP-sealing sleeve is a casing pipe on which a sleeve can be mounted. The sealing system consists of a sealing sleeve made of synthetic elastomer with a thickness of about 5 mm. A one-component special-sealing adhesive has to be injected under the sleeve on both sides. Two high-quality stainless steel straps press the sleeve on and hold the sealing adhesive in position under stress. A pressure tightness of up to 1,0 bar can be reached up to an annular space of 75 mm. For larger annular spaces please consult us at 4 pipes.

Place a compensation cushion in front of the sleeve before the trench will be backfilled. So a stretching zone is created if an eventual expansion happens. Sealing sleeve type KMR are available up to a size of 2000 mm medium pipe diameter. The sealing sleeves are manufactured individually and have to be ordered under exact specification of pipe diameters and the expected expansion.

The maximum permanent operating temperature for these sealing sleeves is 55°C. For special needs please contact us at 4 pipes.

The sealing sleeve comes in a set ready to mount with sufficient fasting straps and sealing adhesive in a 310 ml cartridge.

For retrofit applications, we can find a suitable installation partner for on-site welding with special equipment. Costs therefore accord. to efforts. Fix arrangements in time.

The pipe must be supported in front of and behind the wall to avoid setting or lowering.

Find the technical datasheet for KMR type under ASTM-seals at page 29.

The 4 pipes warranty is limited only to the delivered materials. For the individual application the user is responsible on this own.

Tightened 4 pipes-clamping straps with TOX connection technology. No welding for optimised corrosion protection. (Used for pipe sizes ≥ DN 300)
Sealing Sleeve Type KMR 4 pipes

Application

1. Slide sealing sleeve over the pipe and casing
2. Fit the supplied steel-strap with max. 10 Nm at the front end of the sleeve on the casing pipe
3. Fill the sealant all around under the sleeve
4. Fix second strap with max. 10 Nm (smoothen escaping sealant).
   Repeat step 2 to step 4 on the media pipe
5. Fully assembled sealing sleeve type KMR

Expansion direction S-shape mounting

Expansion direction stretched mounting

Before backfilling protect sealing sleeves with expansion-pads
Certificate Sealing Sleeves 4 pipes

MFPA Leipzig GmbH
Testing, inspection and certification tools for building materials, building products, and building systems

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I.A.F. - Radiologie GmbH
Radiological Laboratory | Radiation Safety | Radiological Consultants

Determination of the Radon Diffusion Coefficient and Radon Diffusion Length of a sample material

Client: 4 pipes GmbH
Sigmundstraße 182
D-90431 Nuremberg

Project: Determination of the Radon Diffusion Coefficient and Radon Diffusion Length of the sample material "sealing sleeve 4 pipes type KMR" for the sealing type "sealing sleeve 4 pipes type KMR"

Project number: H40007-G8

Contractor: I.A.F. Radiologie GmbH

Prepared by: Dipl. Ing. (BA) R. Buremout

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