Belman

TYPE 53 L

# TYPE 53 L
# RUBBER EXPANSION JOINT




**DN 20 to DN 300**
Type 53 L is a low-corrugated, highly elastic Rubber Expansion Joint. Its low corrugation helps to achieve very low flow resistance. It reduces up to 70% of the incoming energy. It is also characterise by very high movement absorption in all directions and variety of rubber qualities, which means that a suitable rubber compound is available for every application. Type 53 is used in building technology, plant engineering, water and wastewater technology, engine construction, shipbuilding, and in solar and wind plant engineering. It is especially used to absorb expansion and vibration, and to insulate sound.

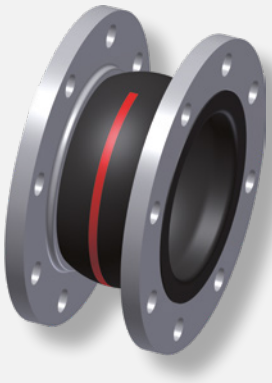
**Bellow design**
Low-corrugated Rubber Bellow with reinforcement and shaped sealing bead with core ring, self-sealing (no additional seals required). Suitable for accommodating swiveling flanges.

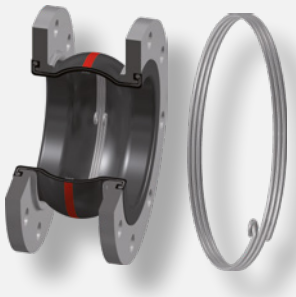
**Flange version**
Both sides with swiveling flange made of galvanized steel with clearance holes, drilled according to DIN PN 10 (standard). Other materials and dimensions are possible.

**Vacuum resistance**
- DN 20 to 50 vacuum-resistant without additional accessories
- DN 65 to 250 without additional accessories to -300 mbar and with vacuum supporting spiral for full vacuum
- DN 300 vacuumresistant with vacuum supporting ring

**Accessories**
- Guide sleeves
- Potential equalisation
- Flame-resistant protective covers
- Dust and splash protection covers
- Earth cover / sun protection hoods
- Segment tie rods

**Important information**
For aggressive media, please see the resistance table (can be requested separately). The Bellows should not be painted or insulated. Please refer to the installation instructions. which is available on request. We will be happy to send you further information on the individual types and designs.





**Vacuum support**

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# SPECIFICATIONS
# APPLICATION

| BELLOW | | BELLOW DESIGN | | | PERMISSIBLE OPERATING DATA | | | | SURFACE RESISTANCE RO |
|---|---|---|---|---|---|---|---|---|---|
| Colour code | Colour marking | Core (inner) | Rein-forcement | Cover (outer) | °C bar | °C bar | °C bar | Short-term °C | Ohm x cm |
| **Red EPDM** | | EPDM | Polyamide | EPDM | -30 10 | 70 12 | 90 10 | 100 | $3 \times 10^5$ |
| **Yellow NBR** | | NBR | Polyamide | CR | -20 10 | 70 12 | 90 10 | 100 | $2 \times 10^2$ |

Bursting pressure DN 20 - 300 > 48 bar

For pressure loss see technical appendix (which is available on request)

## APPLICATION

**Type 53 L Red EPDM**
For cold and hot water (up to 90 °C), also with the addition of chemicals for water treatment. Industrial water, acids, lyes, alcohols, esters and ketones. Not suitable for oil-related media.

**Type 53 L Yellow**
For oils, lubricants, gases, city and natural gas (not liquefied).

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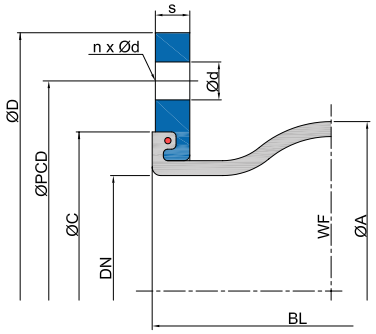
# DESIGN A
# WITHOUT TIE RODS

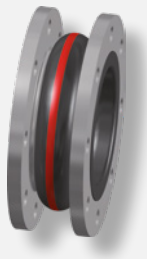


### DESIGN A - WITHOUT TIE RODS

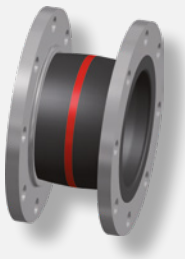
Can be used for movement absorption in any direction (for combined movements, see the movement diagram in the technical appendix, which is available on request), noise and vibration insulation.

The Expansion Joint's reaction force must be absorbed via suitable piping.

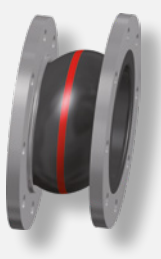


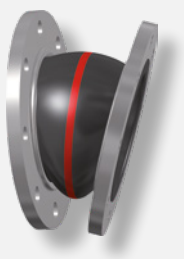
axial -



axial +



lateral +/-



angular +/-

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# DIMENSIONS FOR **DESIGN A (PN 10)**

| DN | LENGTH | BELLOW | | FLANGE PN 10*2 | | | | | | MOVEMENT ABSORPTION (POLYAMIDE CORD) | | | | WEIGHT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | BL mm | ØA mm | WF*1 mm² | ØD mm | ØPCD mm | Ød mm | n | s mm | ØC mm | AX + mm | AX - mm | LA +/- mm | AN +/- ∠° | kg |
| **20** | **130** | 81 | 1700 | 105 | 75 | 12 | 4 | 14 | 66 | 10 | 20 | 20 | 15 | 1.5 |
| **25** | **130** | 81 | 1700 | 115 | 85 | 14 | 4 | 14 | 66 | 10 | 20 | 20 | 15 | 1.9 |
| **32** | **130** | 81 | 1700 | 140 | 100 | 18 | 4 | 15 | 66 | 10 | 20 | 20 | 15 | 3.1 |
| **40** | **130** | 86 | 1800 | 150 | 110 | 18 | 4 | 15 | 74 | 10 | 20 | 20 | 15 | 3.5 |
| **50** | **130** | 96 | 3200 | 165 | 125 | 18 | 4 | 15 | 86 | 10 | 20 | 20 | 15 | 3.7 |
| **65** | **130** | 111 | 5300 | 185 | 145 | 18 | 8 | 15 | 106 | 10 | 20 | 20 | 15 | 5.3 |
| **80** | **130** | 122 | 8500 | 200 | 160 | 18 | 8 | 15 | 118 | 10 | 20 | 20 | 15 | 6.8 |
| **100** | **130** | 142 | 12800 | 220 | 180 | 18 | 8 | 15 | 138 | 10 | 20 | 20 | 10 | 7.9 |
| **125** | **130** | 168 | 18700 | 250 | 210 | 18 | 8 | 15 | 166 | 10 | 20 | 20 | 10 | 9.6 |
| **150** | **130** | 192 | 25900 | 285 | 240 | 22 | 8 | 15 | 192 | 10 | 20 | 20 | 10 | 12.9 |
| **200** | **130** | 252 | 41000 | 340 | 295 | 22 | 8 | 15 | 252 | 10 | 20 | 20 | 5 | 16.2 |
| **250** | **130** | 302 | 59600 | 395 | 350 | 22 | 12 | 18 | 304 | 10 | 20 | 20 | 5 | 21.5 |
| **300** | **130** | 354 | 82200 | 445 | 400 | 22 | 12 | 18 | 354 | 10 | 20 | 20 | 5 | 24.5 |

*1: WF = effective area

*2: Other standards/dimensions possible.

Permissible degree of utilisation for movement areas:

- up to 50°C: Utilisation ~ 100%
- up to 70°C: Utilisation ~ 75%
- up to 90°C: Utilisation ~ 60%

**Important information**
Please note the appropriate fix point constructions and plain bearings in your piping system!

For more information please refer to our installation instructions.
For information on the tie rods, please see the technical appendix (which is available on request)

We will be happy to send you further information on the individual types and designs.