

Rubber expansion Joints are flexible unions for pipes and rigid systems whose main purpose is no other than protect equipment, avoiding rigid systems and pipe work rupture by thermal expansion and contraction, to absorb vibrations and noise generated by pressure pumping stations and also to assist with pipe alignment and being used as dismantling joints. They are consisting of synthetic rubber convolution fitted with metallic connectors at their ends, being flanges or threaded unions and are designed to perform axial movements and lateral and angular deflections.

- Spherical design for better strength and efficiency.
- Light and easy to install, little installation space required, easy maintenance of replaceable bellows
- Different allowable movements: axial compression and expansion, lateral and angular deflection.
- Loose flanges for easy assembly, specially machined to accept the full turned rubber, with standard execution in zinc plated steel.
- Full turned rubber design, self-sealing, no additional gaskets are required; it prevents electrolytic corrosion.

- Precision injection moulded of synthetic rubber and nylon.
- Outer layer protects the bellows surface from eventual ozone attack, strikes and other environmental aggressions.
- Rugged design with high burst pressure, to absorb noise and vibration and withstand water hammers to a certain extent by:
  - Inner Reinforcement placed in between the outer and inner layers. Made of Nylon braided fabrics as standard, which provide high shell moulding resistance.
  - End Bellows Reinforcement. Hardened steel wires to provide a greater consistence to the bellows outer neck.



Lot number punched for full traceability purpose.



Rubber material identification and maximum service temperature.

Designed and manufactured in accordance with good Engineering Sound Practice (ESP)\* Patterns available for diverse convolution shape – single and double sphere – with sizes from DN 32 up to DN 1200\* Rating: PN 6/10/16\* MAWT: depending on rubber grade <EPDM: -20°C..+130°C (CE Rules restrict working temperature to 110°C); NBR: -20°C...+100°C; HYPALON: -20°C...+90°C>\* Bursting pressure: 60 barg up to DN 200 and 40 bar on larger sizes\* Flanged ends to EN 1092-1 PN 10, PN 16 or ASME B.16.5 ANSI 150 – loose flat flanges \* Testing Standard: EN 12266-1 \* Marking Standard: EN 19 \* PED 97/23/CE according to Art. 3 – Paragraph 3 (Art.1.3 – 15) – Excluded from marking.

#### Main Parts and Materials

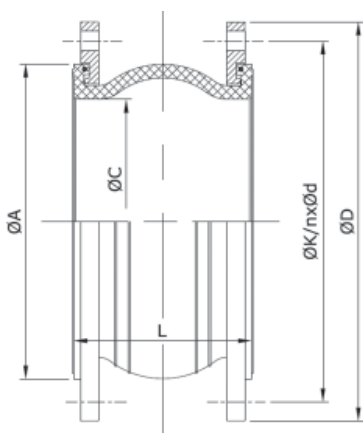


- 1- Vulcanised Rubber Bellow:**
- 1.1 Rubber core (inner)
  - 1.2 Nylon tire cord
  - 1.3 Rubber cover (outer)
  - 1.4 Hard Steel Wire

Rubber options: EPDM, NBR, Hypalon, Neoprene, Viton, Butyl Rubber, Natural Rubber

- 2- Loose Flanges:**
- Standard Material: Carbon Steel Zinc Plated S235JR to EN10025 (old St 37-2 to DIN 17100)
- Flange Options: Stainless Steel AISI 304, AISI 316, Galvanised, etc.

#### Main Valve Dimensions (mm)



| DN     | BUILDING LENGTH (mm) | MAX. MOVEMENTS ALLOWED FROM INITIAL POSITION* |                               |                        |                      |                         | ΦA (mm) | ΦC (mm) |                    |
|--------|----------------------|---|-------------------------------|------------------------|----------------------|-------------------------|---------|---------|--------------------|
|        |                      | INITIAL (L)                                   | TOLERANCE INSTALLED (min-max) | AXIAL COMPRESSION (mm) | AXIAL EXPANSION (mm) | LATERAL DEFLECTION (mm) |         |         | ANGULAR DEFLECTION |
| 1"     | 25                   | 130   | 122-133                       | 30                     | 20                   | 30                      | 35°     | 60      | 25                 |
| 1.1/4" | 32                   | 130   | 122-133                       | 30                     | 20                   | 30                      | 35°     | 68      | 35                 |
| 1.1/2" | 40                   | 130   | 122-133                       | 30                     | 20                   | 30                      | 35°     | 68      | 37                 |
| 2"     | 50                   | 130   | 122-133                       | 30                     | 20                   | 30                      | 35°     | 86      | 50                 |
| 2.1/2" | 65                   | 130   | 122-133                       | 30                     | 20                   | 30                      | 30°     | 106     | 65                 |
| 3"     | 80                   | 130   | 122-133                       | 30                     | 20                   | 30                      | 30°     | 118     | 72                 |
| 4"     | 100                  | 130   | 122-133                       | 30                     | 20                   | 30                      | 25°     | 152     | 98                 |
| 5"     | 125                  | 130   | 122-133                       | 30                     | 20                   | 30                      | 25°     | 182     | 122                |
| 6"     | 150                  | 130   | 122-133                       | 30                     | 20                   | 30                      | 15°     | 213     | 146                |
| 8"     | 200                  | 130   | 122-133                       | 30                     | 20                   | 30                      | 15°     | 262     | 194                |
| 10"    | 250                  | 130   | 122-133                       | 30                     | 20                   | 30                      | 10°     | 323     | 245                |
| 12"    | 300                  | 130   | 122-133                       | 30                     | 20                   | 30                      | 10°     | 372     | 295                |

\* The stated movements are solely valid with the joint subject to a single movement direction. Values are proportionally reduced along with the movement combination.  
 \* Increasing temperatures reduce the permissible movements capacity and number of cycles.

#### Options

Limit rods \* Extra Inner reinforcements\* Root Rings for double sphere joints\* Diverse flange materials\* Other rubber grades\*

#### Main Duties

Marine, Water Works and Environmental Industry, HVAC, Power and Process Industry. Media: water, Air Compressed, Lubricants and fluids compatible with the used rubber.