

EXPANSION FITTINGS AND LOOPS FOR HVAC PIPING

1. GENERAL

1.1 Scope

- .1 Flexible pipe connections.
- .2 Expansion joints and compensators in pipe systems.
- .3 Pipe loops, offsets, and swing joints.

1.2 Reference Standard

- .1 Conform to current standards of Expansion Joint Manufacturers Association (EJMA) and Manufacturer's recommendations.

1.3 Shop Drawings

- .1 Provide Shop Drawings for all equipment in this Section.
- .2 Flexible pipe connector shop drawing data shall include maximum allowable temperature and pressure rating, overall face-to-face length, live length, hose wall thickness, hose convolutions per 300 mm and per assembly, fundamental frequency of assembly, braid structure and total number of wires in braid.
- .3 Expansion joint Shop Drawings shall include maximum allowable temperature and pressure rating, and maximum expansion compensation.

1.4 Inspection

- .1 Provide inspection services by flexible pipe Manufacturer's Representative for final installation and certify installation is in accordance with Manufacturer's recommendations and connectors are performing satisfactorily.

2. PRODUCTS

2.1 Flexible Pipe Connectors

- .1 Braided Spools for Copper Piping: Stainless steel inner core and braid braided to copper tube ends, suitable for 1035 kPa (150 psi) at 120°C (250°F).
- .2 Braided Spools for Steel Piping: Stainless steel inner core and braid welded to steel pipe nipples, threaded for pipe up to 50 mm diameter, flanged for 65 mm diameter pipe and over. Suitable for service at 1035 kPa (150 psi) at 120°C (250°F).

2.2 Expansion Joints

- .1 Copper Piping: Laminated stainless steel bellows brazed to copper tube ends, internal guide, stainless steel external shroud. Suitable for 1035 kPa (150 psi) at 260°C (500°F).

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- .2 Steel Piping up to 100 mm: Laminated stainless steel bellows welded to steel pipe nipples. Anti-torque device and threaded ends for sizes to 50 mm, flanged ends for sizes 65 mm and over. Internal guide and carbon steel shroud suitable for 1035 kPa (150 psi) at 260°C (500°F).
- .3 Steel Piping 100 mm and over: Guided externally pressurised laminated stainless steel bellows, flanged ends, internal guide tube and ring, external shroud and guide ring. Suitable for 1035 kPa (150 psi) at 260°C (500°F).

2.3 Pipe Guides

- .1 Four finger "spider" inside a guiding sleeve formed of two halves suitable for clamping onto pipe.
- .2 Guided sleeve formed of two parts, suitable to be bolted to supporting structure.
- .3 Guide length to be minimum 300 mm.

3. EXECUTION

3.1 Application

- .1 Provide flexible pipe connectors on pipes connected to equipment supported by vibration isolation and where indicated on the Drawing.
- .2 Provide structural Work and equipment required to control expansion and contraction of piping, loops, pipe offsets, and swing joints and provide expansion joints where indicated or required. Where deemed necessary by the Contract Administrator the Contractor shall, at his own cost, employ a structural engineer to design pipe anchors to control piping expansion and contraction.
- .3 Provide pipe guides as required to ensure correct pipe alignment for expansion joints.

3.2 Installation

- .1 Install as indicated.
- .2 Install flexible connectors at right angles to displacement. Install one end immediately adjacent to isolated equipment and anchor other end.
- .3 Rigidly anchor pipe to building structure at points shown, and where necessary provide pipe guides so that movement takes place along axis of pipe only.
- .4 Install flexible connectors and expansion joints in accordance with Manufacturer's instructions.
- .5 Do not compress or expand connector during installation.

END OF SECTION