

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following pipe expansion joints and expansion compensation devices for mechanical piping systems:
 1. Metal-bellows expansion joints.
 2. Flexible-hose expansion joints.
 3. Pipe bends and loops.
 4. Alignment guides and anchors.

1.2 SUBMITTALS

- A. Shop Drawings: Signed and sealed by a qualified professional Engineer.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Metal-bellows expansion joints: Multiple stainless steel bellows and stainless steel liner with shroud and end fittings. Keflex #311 series or approved equal.
- B. Flexible Expansion Joint/Seismic Connector for Steel Pipe: Stainless steel hose and braid, 180° return, CSA approved, and end fittings. Metraflex #Metraloop, Unisource V-SF21 Style, or approved equal.
- C. Flexible Connection for Steel Pipe (Piping and Equipment located outside the Building): Stainless steel hose and braid, with threaded or flanged ends. Metraflex #SST or approved equal. Provide a steel support to prevent sagging is required.
- D. Flexible Connection for Copper Pipe: Bronze hose and braid, copper tube ends. Metraflex #BBS, Unisource V-BF11 Style, or approved equal. Provide a steel support to prevent sagging is required.
- E. Pipe bends and loops: Provide field fabricated pipe expansion loops as detailed on the drawings or in place of mechanical expansion joints.
- F. Alignment guides and anchors: Provide pipe alignment guides on both sides of expansion joints, and elsewhere as indicated on drawings. Guide shall be of carbon steel construction with split guiding cylinder and integral anchor base and internal four finger two-piece spider. Cylinder wall thickness shall be equal to schedule 40 wall thickness of pipe being guided. Spider shall be capable of clamping directly to pipe and moving only in an axial direction while inside cylinder. Anchoring directly to building substrate. Metraflex #Style IV or equal.

PART 3 - EXECUTION

3.1 GENERAL

- A. As required by Engineer, manufacturer and code.

- B. Fabricate expansion loops as determined by installer for adequate expansion of installed piping system. Subject loop to cold spring which will absorb 50% of total expansion between hot and cold conditions. Provide pipe anchors and pipe alignment guides as indicated, and elsewhere as determined by installer to properly anchor piping in relationship to expansion loops.
- C. Spacing of guides or other pertinent information, install per manufacturer's recommendations.

END OF SECTION