



## Flexible Hose Expansion Loops for Fuel applications.

### 1.0 General

- A. Provide flexible hose expansion loop(s) as indicated on the contract drawings or as required to accommodate any thermal expansion, contraction, building settlement, or seismic movement of the piping system.
- B. Flexible hose expansion loops shall be manufactured complete with two parallel sections of corrugated metal hose, compatible braid, 180 deg return bend, with inlet and outlet connections. Field fabricated loops shall not be acceptable.
- C. Flexible loops shall be capable of movement in the  $\pm X$ ,  $\pm Y$ , and  $\pm Z$  planes.
- D. Flexible hose expansion loops shall impart no thrust loads to system support, anchors or building structure.
- E. All flexible hose expansion loops shall be manufactured in accordance with the documented manufacturers weld procedure specifications. The procedure qualification record shall be used to document the execution of this procedure and shall follow the general "guidelines" of ASME Section IX. Each individual welder shall conform to the in-house procedure qualification record and be qualified prior to each production lot. The testing of each individual welder shall be documented in a welding procedure qualification record.

### 2.0 Products

- A. Flexible hose expansion loops to be "**Gas Metraloop®**" as manufactured by The Metraflex Company®, Chicago, IL.
- B. Materials;
  - a. Fittings shall be standard weight, Carbon Steel conforming to ASTM A234 / ASME B16.9
  - b. Corrugated Hose; Stainless Steel, Type 321
  - c. Braid; 304 Stainless Steel.
  - d. End fittings shall carbon steel plate flanges with 150 lb. drilling.
- C. Flexible hose expansion loops for flammable liquid or gas service up to 4" shall be CSA / AGA listed and be in conformance with UL-536.

### 3.0 Execution

- A. Install and guide per manufacturers' installation instructions and Mechanical Contractors Association of America "Guidelines for Quality Piping Installations".
- B. Flexible hose expansion loop return fitting shall be supported to allow movement.