



## The Tri Loop Seismic Connector System

meet the requirements of Chapter 17.1.2 of ASCE Standard 7-05 code for total displacement.

2009 International Building Code (IBC) & ASCE Standard 7-05 are requiring architects, engineers and building owners to adapt to new building requirements related to seismic regulations. Easyflex Tri Loop Seismic Connector design meets the displacement requirements as defined by Chapter 17.1.2 of the ASCE 7-05 code. It's three flexible sections allow it to compensate movement in six degrees of freedom (three coordinates axes, plus rotation about those axes simultaneously from random seismic shifts).

2009 International Building Code (IBC) Section 1613-Earthquake Loads 1613.1 Scope. Every structure, and portion thereof, including nonstructural components that are permanently attached to structures and their supports and attachments, shall be designed and constructed to resist the effects of earthquake motions in accordance with ASCE 7, excluding Chapter 14 and Appendix 11A. The seismic design category for a structure is permitted to be determined in accordance with Section 1613 or ASCE.

Easyflex Inc.'s patented Tri Loop Seismic Connector provides the most complete engineering solution for the IBC's most stringent specifications.

### Standard Sizes 0.47" to 14" I.D.

Custom sizes available 0.47" to 14" I.D. Other alloys and custom styles available. Please consult factory.

### Applications

Easyflex Tri Loop Seismic Connectors are approved for flammable and combustible gases and liquids. Other common applications for the Tri Loop Seismic Connector include steam, condenser water, hot water, domestic hot water and chilled water. Tri Loop Seismic Connector multi-plane movement simplifies piping design and reduces system installation cost by eliminating mechanical pipe loops, expansion joints, pipe alignment guides and reducing anchor loads by 93%. The multi-plane design can reduce expansion devices required in a piping system by 50% and Tri Loop Seismic Connector makes a world of difference in your critical piping connections

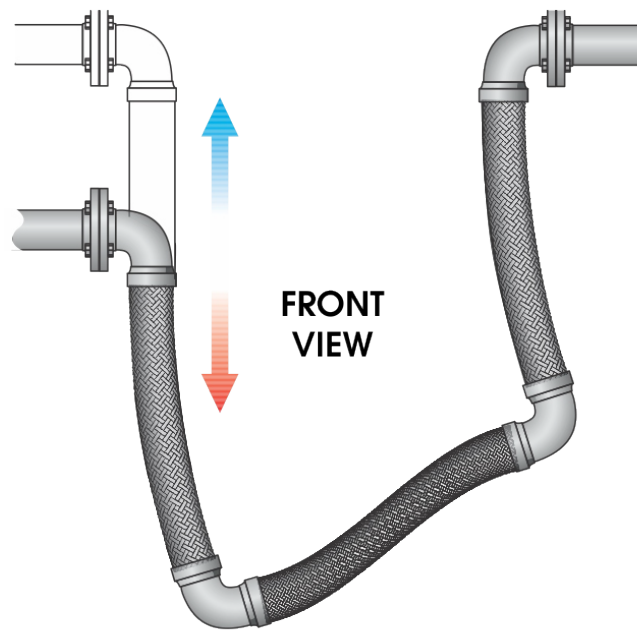
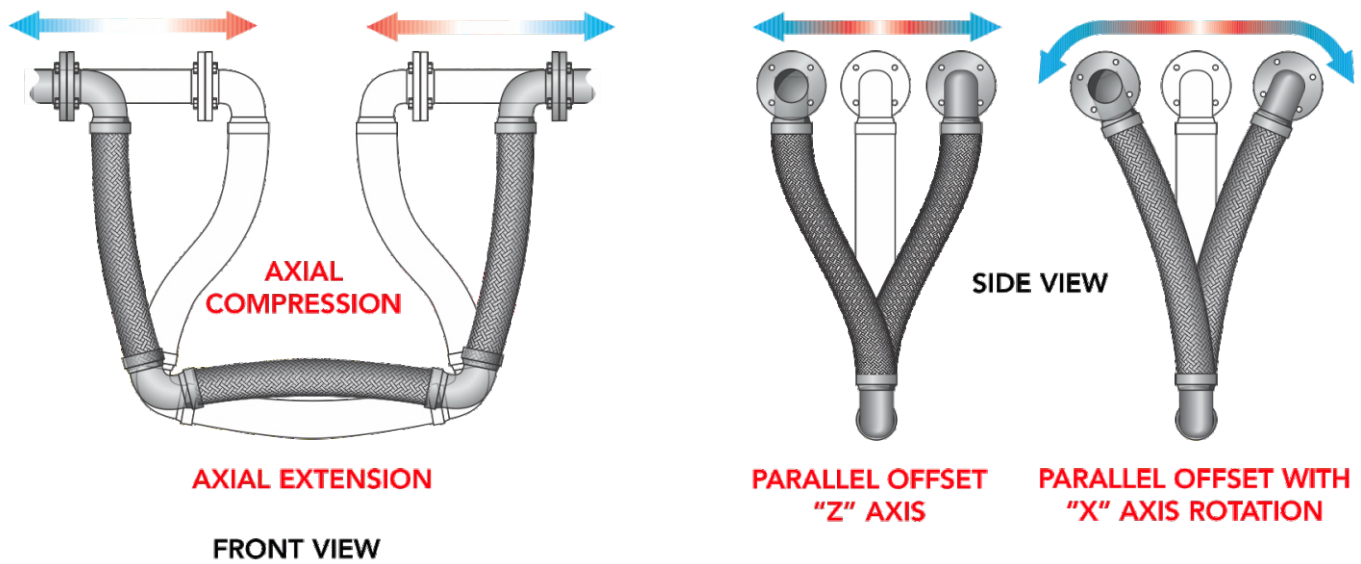




Tri Loop Connector reduces system costs! It's multi-plane design reduces expansion devices required in a piping system by 50% and significantly reduces structural anchors saving you money!

**Tri Loop Seismic Connector Movement Capabilities**

Tri Loop Seismic Connector design is capable of handling the following movements simultaneously:



**NON-PARALLEL OFFSET "Y" AXIS**

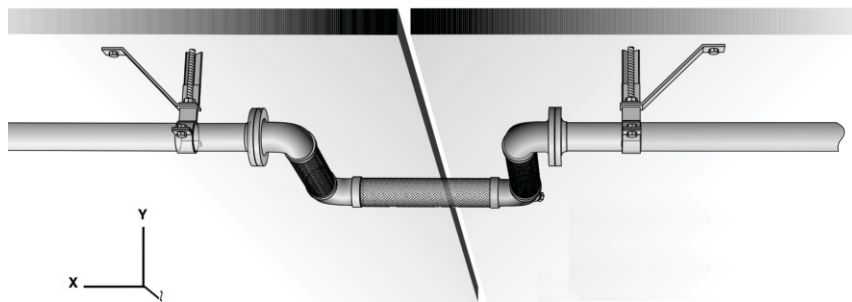


## Horizontal Pipe Run Spanning a Building Seismic Joint

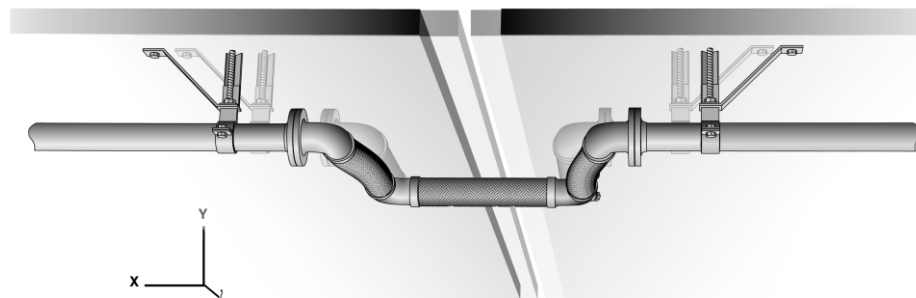
The Tri Loop's Seismic Connector design of three flexible sections allow it to compensate pipe movement in six degrees of freedom (three coordinates axes, plus rotation about those axes simultaneously). It is the safest and most reliable means of absorbing movement resulting from random seismic shift.

The Tri Loop Seismic Connector is capable of accommodating seismic displacements for vertical piping between floors of the building, where pipes pass through or bridge building seismic joints or building expansion joints. They are also used for horizontal piping across building seismic and building expansion joints to accommodate the resultant drift of each building unit, or where rigidly supported pipes connect to equipment mounted on vibration isolators.

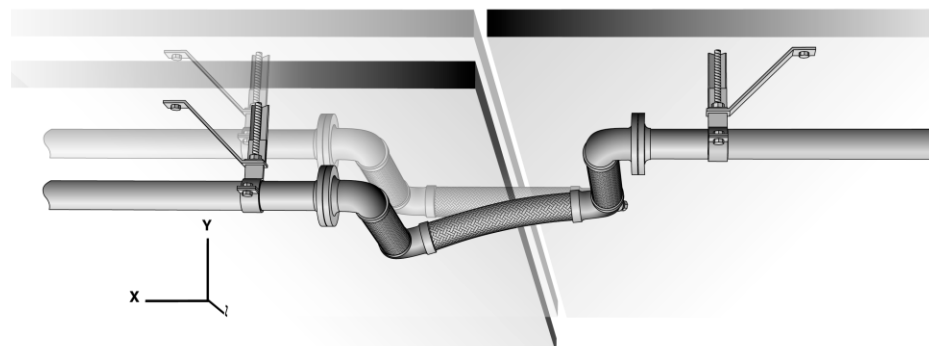
### Seismic Horizontal Displacement



### Seismic Vertical Displacement



### Seismic Angular Displacement





## Pressures

**Maximum Working Pressure:** Maximum operating pressure to which the hose should be subjected. It is established at 25% of the nominal design burst pressure.

**Maximum Proof Pressure:** Maximum test pressure to which the hose should be subjected. It is established at 150% of the maximum working pressure with the hose installed straight. No harmful deformation shall occur.

Hydrostatic field tests of hose assemblies installed in varying degrees of radial bend or parallel offset should be limited to 120% of maximum rated working pressure at 70°F, or 150% of the actual operating pressure, whichever is the lesser.

**Nominal Design Burst Pressure:** The pressure at which the hose can be expected to rupture, based on the minimum annealed ultimate tensile strength of the braid wire and the corrugated hose alloys at 70°F with the hose installed straight.

## Motion Classifications

Easyflex Tri Loop Seismic Connector design is the only flexible pipe loop that absorbs and compensates pipe movement in six degrees of freedom. (three coordinates axes, plus rotation about those axes simultaneously.)

The multiplane movement design can reduce expansion devices required in a piping system by up to 50%.

**Offset Motion:** Motion that occurs when one end of the hose assembly is deflected in a plane perpendicular to the longitudinal axis with the ends remaining parallel. Offset is measured as displacement of the free end centerline from the fixed end centerline.

Intermittent Offset is motion that occurs on a regular or irregular cyclic basis. It is normally the result of thermal expansion and contraction or other non-continuous actions.

## NOTES:

Easyflex Tri Loop Seismic Connector manufactured with a 4:1 safety factor

Model No.	Pipe ID (inch)	Length A (inch)	Length B (inch)	Working Pressure	Compression Movement (inch)	Extension Movement (inch)	Parallel Movement (inch)
EFTLS020	0.75	30	28	30 Bar	12	12	12
EFTLS025	1	30	28	30 Bar	12	12	12
EFTLS032	1.25	34	30	30 Bar	12	12	12
EFTLS040	1.50	34	30	30 Bar	12	12	12
EFTLS050	2	40	36	30 Bar	12	12	12
EFTLS065	2.50	44	38	20 Bar	12	12	12
EFTLS080	3	52	42	18 Bar	12	12	12
EFTLS100	4	60	50	18 Bar	12	12	12
EFTLS125	5	66	52	16 Bar	12	12	12
EFTLS150	6	74	58	11 Bar	12	12	12
EFTLS200	8	88	70	10 Bar	12	12	12
EFTLS250	10	104	82	6 Bar	12	12	12
EFTLS300	12	116	90	6 Bar	12	12	12
EFTLS350	14	130	98	6 Bar	12	12	12

# Tri Loop Seismic Connector Design Specifications

