

Combination Lateral / Longitudinal Sway Braces

They Are Not Four-Way Braces

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The component parts of a sway brace, except for the brace pipe itself, are required by NFPA to be listed. Many contractors seem to be unaware that there are installation restrictions dictated by these components' listings. This is evident by the fact that we see *too* many lateral sway brace assemblies installed contrary to their UL listing by incorrectly cross bracing them to form a longitudinal brace combination. (See Figure 1.) Due to the nature of their design, these modified lateral sway braces have limited ability at any installation orientation other than lateral. They are not UL listed for longitudinal applications on sprinkler pipe size greater than 4" by any manufacturer. They are not UL listed for longitudinal application on **any** pipe size by most manufacturers. So, the objective of this article is a warning: **CONTRACTOR BEWARE.**

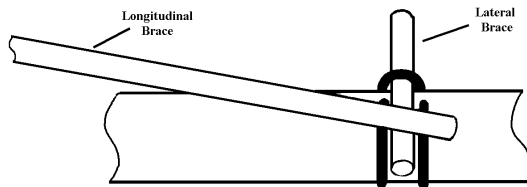


Figure 1

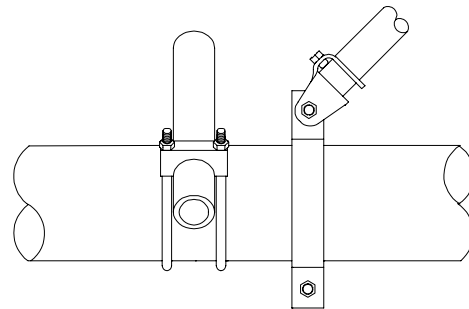


Figure 2

AFCON believes that separate lateral and longitudinal assemblies avoid confusion and misapplication. Reasons for AFCON's position against combination to a lateral (see Figure 1) preferring instead a separate longitudinal (see Figure 2) brace are listed below:

- Longitudinal sway braces are specifically designed for this application
- Longitudinal sway braces are UL listed for all pipe sizes.
- Uniform installation strategy avoids confusion when installing, designing and reviewing.

AFCON further believes this methodology violates NFPA 13, consider the following:

- NFPA 13 defines bracing installed to resist horizontal seismic force on vertical sprinkler pipe as a four-way.
- NFPA 13 defines sway bracing installed to resist horizontal seismic force on horizontal sprinkler pipe as lateral or longitudinal.
- NFPA 13 – 9.3.5.8.4 "All parts and fittings of a brace shall lie in straight line to avoid eccentric loadings on fittings and fasteners."
- NFPA 13 – 9.3.5.11.1 "Bracing shall be attached directly to feed and cross mains."

AFCON's engineering sheets have never supported this installation configuration on horizontal piping nor the use of the word four-way to describe it.

Please call AFCON to discuss this article, or any comments you may have.