Pipe Clamps are Not Sway Brace Fittings

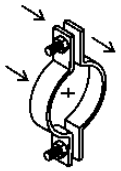
Correctly Install Listed Product

AFCON

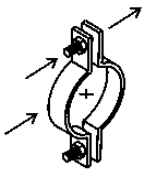
2010 NFPA 13 Chapter 9 section A.9.1.1 identifies a pipe clamp as a hanger component. Using a pipe clamp as a sway brace fitting is in violation of NFPA 13. Chapter 9 section 9.3.5.10.2.1 specifies the use of listed sway brace fittings in sway brace assemblies. Accordingly, lateral and longitudinal sway brace assemblies are composed of listed components whose geometry and ability is unique to their orientation and function. Any manufacturer who advises using a pipe clamp in their sway brace assembly is in violation of NFPA 13.

Pipe clamps are listed per UL 203 as hanger components to support NFPA 13 hanger loads in tension. Sway brace fittings are listed per UL 203A to resist seismic loads in tension and compression in conformance to NFPA 13. This article will explain the important structural ability of the fastener flange of a listed clamp type sway brace fitting.

Longitudinal sway brace fittings look similar to pipe clamps. In spite of some basic similarities, longitudinal sway brace fittings are structurally and functionally different. Their UL 203A listing specifies assembly as part of a longitudinal sway brace. This requires alignment of the fitting to resist seismic force parallel through the fastener flange. The fastener flanges are structurally stronger and more able to resist force applied against their edge, see drawing A. The fastener flanges are more susceptible to bending and deformation, when force is applied against their flat, see drawing B.



Drawing A



Drawing B

In my opinion, it is very problematic for a lateral sway brace fitting to look similar to a pipe clamp for three reasons. Firstly, there is potential rotation on the system pipe. Secondly, the fastener flange is more susceptible to eccentric loading against its flat. Thirdly, an additional fitting is required to transition brace pipe attachment not required when using a lateral sway brace fitting.

NFPA 13 Chapter 9 is very specific about the use, features and characteristics necessary of listed fittings used in sway brace assemblies. Follow listings, watch out for misinformation, and be very careful to avoid misapplication of listed sway brace fittings.

Kraig Kirschner is a third generation fire sprinkler contractor and a journeyman fitter. He is a Principal Member of NFPA 13 - Hanging and Bracing Technical Committee and serves on Standard Technical Panels of UL 203, UL 203A and FM 1950. Kraig is a Life Member of the National Fire Protection Association and was named Person of the Year in 2009 Fire Protection Contractor Magazine. He holds dozens of patents that enhance the installation and application of hangers and sway braces.