

NFPA 13 Pipe Sway Braces

Provide Desirable Features And Practical Advantages

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The text of NFPA 13 Chapter 9 purposefully separates the subject and criteria of sway braces from that of hangers. Addressing each separately allows specific standardization to augment clarification of intent and application, thus enhancing the performance required of each type of assembly. Separating requirements allows specifications to target function, placement and mounting unique to the function of each assembly. Uniformity of each methodology is enhanced which simplifies quality control and makes installation and accurate inspection easier. Without separation the ability of the products in one assembly may be compromised by possible unintended consequences due to interaction with the products in the other assembly.

Separation in the standard is particularly advantageous to sway brace criteria which must address more variables than hanger criteria. Examples include geographic location, specific seismic force, system pipe weight subject to size and type, system pipe deflection, sway brace mounting location influenced by sprinkler piping and building structure circumstances and the variables in sway brace component combinations including sway brace geometry.

Let's discuss the advantages to sway brace design unique to pipe as the common rigid brace element. Since fire sprinkler systems are piping systems, it naturally follows that pipe is the preferred contractor component of choice in sway brace assemblies.

Chapter 9 specifically defines the NFPA 13 sprinkler system as an emergency system with an importance factor of 1.5. Accordingly, conservative simplifying assumptions are the hallmark of NFPA 13 sway bracing and this simplification is enhanced by rigid sway braces. Pipe sway brace elements are simple, versatile, efficient and conservative in nature. A single pipe sway brace assembly with its single point of attachment allows a variety of placement options from multiple potential locations and positions. Pipe has known ability in compression and never requires interaction with any hanger assembly. Further, pipe allows resistance to vertical seismic force just as easily as it does to horizontal seismic force. The sway brace configuration is the same; just orient the pipe sway brace at 0° thru 60° for vertical rather than 30° thru 90° for horizontal. Simply mount and install where logical, practical or convenient without regard to hanger location.



Pipe sway brace components, including the methodology of their installation, are well developed, well understood and very familiar to AHJ's, engineers and contractors. There is a preponderance of listed component products for use in NFPA 13 pipe sway brace assemblies. These products are numerous and diverse, including fittings, attachments, adapters and sway brace software. Additionally, their product listings may include installation on CPVC or copper sprinkler pipe

In closing, I believe that the system hangers are second in importance only to the required system sway braces. The sway braces prevent damage to both the hanger and the system piping that the hanger supports. Long term durability necessary to the performance of the NFPA 13 emergency system is guaranteed by the correct installation of system hangers and sway braces.