

Hangers Are Not Sway Braces

Beware Of Contrary Opinions

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With or without rod stiffeners, hangers are not sway braces per NFPA 13. Installing hangers to resist seismic force in lieu of listed sway braces is in violation of NFPA 13. Chapter 9 requires installing sway braces to resist horizontal seismic force and upward vertical seismic force. Chapter 9 does not require sway braces to resist downward vertical seismic force because the Technical Committee of Hanging and Bracing deems the hanger load rating safety factor as sufficient to address this additional force. NFPA 13 chapter 9 defines hangers in sections 9.1 and 9.2 and sway braces in section 9.3, addressing the required characteristics specific to each. Accordingly, Underwriters Laboratory lists hangers per NFPA 13 in the UL203 Standard and lists sway braces per NFPA 13 in the UL203A Standard.

The 2013 edition of NFPA 13, Chapter 9 specifies that sway braces are required to resist seismic force. Some of the Chapter 9 sections that address this subject:

- 9.3.5.1.1 "... braced ... to prevent vertical motion resulting from seismic loads"
- 9.3.5.2.1 "...assemblies shall be listed..."
- 9.3.5.2.2.1 "Bracing fittings and connections ... shall be listed."
- 9.3.5.10 "... the braces shall be arranged to resist the net vertical reaction...."

A common misapplication of hangers in fire sprinkler systems is when they are incorrectly used to resist upward vertical seismic force. Further, NFPA 13 does not instruct the installation of a sway brace near a system hanger. Erroneously promoting hangers as an acceptable alternative to listed sway braces violates the NFPA 13 Fire Sprinkler Standard.

The 2007 NFPA 13 Hanging and Bracing Technical Committee specifically addressed the use of hangers to resist upward vertical seismic force during its ROP and ROC meetings. All proposals and comments promoting hangers to resist upward vertical seismic force were specifically rejected, even when the hanger assembly included a rod stiffener.

NFPA 13 is unrivaled as the ultimate authority for fire sprinkler design and installation. Accordingly, it stands to reason that NFPA 13 is the fire sprinkler reference standard for authorities and codes including FEMA, NEHRP, ASCE 7 and the I-Codes. Contractors should install and AHJ's should require sway bracing that conforms to the NFPA 13 Fire Sprinkler Standard.