

Per NFPA 13, Control Seismic Force

Always resist horizontal, possibly resist vertical

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Chapter 9 directs that sway bracing be arranged to resist horizontal seismic force.

Accordingly it includes precisely defined seismic criteria corresponding to horizontal force and characteristics of bracing unique to each installation.

Horizontal seismic force is always applicable to Chapter 9 sway bracing.

Some sections for reference are:

9.3.5.1.1 "... braced to resist both lateral and longitudinal horizontal seismic loads...."

9.3.5.1.3 "Horizontal loads...."

9.3.5.6 "Horizontal seismic loads"

Conversely, Chapter 9 does not ignore vertical seismic force.

Vertical seismic force shall be additionally addressed as appropriate.

Some sections for reference are:

9.3.5.1.1 "...braced ... to prevent vertical motion resulting from seismic loads."

9.3.5.7 "...the braces shall be arranged to resist the net vertical reaction..."

When Chapter 9 requires bracing to resist vertical seismic force:

Appropriately orient and install additional sway brace assemblies relative to this center line. The frame of reference becomes 0° thru 60° rather than 30° thru 90°. Rigid braces shall be installed to resist vertical seismic force. Remember, per NFPA 13 hangers are not sway braces with or without rod stiffeners. Tension only sway braces, such as cable, have no ability in compression and can not resist vertical seismic force.

Therefore, NFPA 13 requires additional rigid sway braces to compliment them.

Sway bracing is critical to the performance of the NFPA 13 emergency system.

Accordingly, the conservative bracing methodology in Chapter 9 insures the viability of the most important mechanical system in any building.