

NFPA 13 Hanger Spacing

An Analogy

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NFPA 13 limits hanger load @ 1 wt + 250 lbs. by specifying the maximum hanger spacing on the system pipe. This is a conservative simplifying assumption that is easily quantified and enforced. Similarly, **NFPA 13 – 9.1.1.2** specifies conservative engineering for the hanger components @ 5 (pipe wt)(spacing) + 250lbs.

The **UL 203** Listing protocol for fire sprinkler system hanger components is more conservative, specifying the test incorporate minimum sch. 40 system pipe and maximum 15 ft. **NFPA 13** hanger spacing plus 250 lbs. to determine listed product load rating, i.e.:

1-2 in.	750 lbs.	3 in.	1050 lbs.	6 in.	2650 lbs.	10 in.	5850 lbs.
2 1/2 in.	850 lbs.	4 in.	1500 lbs.	8 in.	4050 lbs.		

Few distributors stock all the required listed hanger components for 10 in. fire sprinkler system pipe. Contractors may find it expedient to support this 10 in. system pipe using **NFPA 13 – 1/2 in.** rod, fittings and fasteners for 8 in. system pipe at reduced hanger spacing. Using the above **NFPA 13 – 9.1.1.2** hanger analogy, comparative analysis can provide conservative guidance for a proper solution. Accordingly, 8 in. hanger rod and fittings can be installed at reduced spacing to perform within their **UL 203** load rating and properly support 10 in. fire sprinkler system pipe.

Using **UL 203** load ratings referenced above, reduce 8 in. hanger spacing to conform. Please see the following example; where **D** = 8 in. hanger spacing:

$$\frac{4050 \text{ lbs.}}{5850 \text{ lbs.}} \times \frac{D \text{ ft.}}{15 \text{ ft.}} = 10.385 D \therefore \text{Spacing} = 10 \text{ ft. max.}$$

This analogy provides a proper basis of comparison for **UL 203** listed hanger components per **NFPA 13 – 9.1.1.2**.



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.