



Automatic Sprinklers: Hanger Spacing for Nonmetallic Pipe

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Learning Objective: The student shall be able to identify the hanger spacing requirements for one manufacturer's nonmetallic sprinkler pipe.

Hangers are an important component of a fire sprinkler system. They support the pipe to keep it off of other building components and can act as a restraint to prevent pipe movement when a sprinkler operates.

Most listed hangers designed for metal pipe are suitable for nonmetallic pipe. Hangers with sufficient load bearing surface must be used based on the comparative pipe size. For example, 1- 1/2-inch (40 mm) hangers must be used for 1- 1/2-inch pipe (40 mm). The hanger should not have rough or sharp edges that come in contact with the pipe. The pipe hangers must comply with the requirements in NFPA 13, *Standard for the Installation of Sprinkler Systems*, 13D, *Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes*, and 13R, *Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height*, the standards for the installation of automatic sprinkler systems.



The hanger for this 3-inch (80 mm) pipe must be within recommended spacing limits.

The following table is from one manufacturer's hanger spacing requirements based on pipe size.

| Nominal Maximum Pipe Size (Diameter) | | Support Spacing (Maximum Distance Apart) | |
|---|------|---|--------|
| inches | mm | feet | meters |
| 3/4 | 20.0 | 5- 1/2 | 1.7 |
| 1 | 25.0 | 6 | 1.8 |
| 1- 1/4 | 32.0 | 6- 1/2 | 2.0 |
| 1- 1/2 | 40.0 | 7 | 2.1 |
| 2 | 50.0 | 8 | 2.4 |
| 2- 1/2 | 65.0 | 9 | 2.7 |
| 3 | 80.0 | 10 | 3.0 |

When a sprinkler activates, a significant reactive force can be exerted on the pipe. With a pendent sprinkler, this reactive force can cause the pipe to lift vertically if it is not properly secured, especially if the sprinkler drop is from a small diameter pipe. The closest hanger must brace the pipe against vertical lift-up. For quick response upright sprinklers (QRS), this manufacturer also requires that rigid hangers secured to the ceiling are installed.

Always check the specific pipe manufacturer's listing information and technical bulletins for hanger and spacing requirements.

