



Coffee Break Training - Fire Protection Series

Automatic Sprinklers: Sprinkler Spacing From Walls

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Learning Objective: The student should be able to describe the requirements for minimum and maximum sprinkler spacing from walls.

The increasing variety of designs and application of automatic sprinklers amplifies the complexity of the rules regarding their installation.

When standard spray sprinklers were predominant in the marketplace, the rules were easy to remember, but with the addition of extended coverage (ECO), residential, early-suppression fast response (ESFR), and control mode-specific application (CMSA) sprinklers the installation guidelines are more challenging.

The National Fire Protection Association (NFPA) 13, *Standard for the Installation of Sprinkler Systems*, and the individual sprinkler listings provide spacing limitation guidance. The minimum and maximum distances from walls are important to remember. Sprinklers should be located a **minimum** distance from walls so the influence of the intersection of the wall and ceiling on the thermal plume or ceiling jet does not interfere with sprinkler operation, and a **maximum** distance from the wall to ensure proper water spray coverage. These distances are dependent upon the type of sprinklers installed.

In general, the **minimum** distance between a sprinkler and a wall should comply with the value indicated in the applicable section for each type or style of sprinkler, measured perpendicularly from the wall. For the standard spray sprinkler picture, this distance should be at least 4 in. (102 mm). Whether that dimension is measured from the center line of the sprinkler or the nearest edge of the deflector is subject to the interpretation of the code official.

The **maximum** distance from sprinklers to walls should not exceed one-half of the allowable maximum distance between sprinklers, measured perpendicularly to the wall. If, for example, the maximum distance between sprinklers permitted by NFPA 13 or the listing is 15 ft (457 cm), the sprinkler should be no more than 7 ft, 6 in. (229 cm) from the wall.

Where permanently-mounted or large furniture is adjacent to the wall (such as wardrobes, cabinets, and trophy cases) the distance should be measured to the wall behind furniture.

Designers, installers, and inspectors are reminded to refer to the listing document and NFPA 13 for guidance.



This standard spray pendent sprinkler should be located at least 4 in. (102 mm) from the wall.

