

U.S. Fire Administration / National Fire Academy

*Coffee Break Training***Topic: Sprinkler Separation**

Learning objective: The student should be able to identify conditions where baffles are required between sprinklers.

For some unknown reason, the sprinklers in the photograph were installed within just a few inches of one another.

While it may seem like this is providing an extra amount of protection, the installation does not comply with the requirements of NFPA 13, *Standard for the Installation of Automatic Sprinklers*.

When a sprinkler system is designed, sprinkler placement is selected based on the sprinkler type, the occupancy hazard classification and potential obstructions to heat collection or water discharge. NFPA 13 and the sprinklers' listings provide strict rules for the sprinkler installer to follow.

In this case, the problem is the sprinklers are installed too closely to one another. If one sprinkler were to operate, the water spray from it likely would fall upon the other sprinkler and prevent its heat-sensitive element from operating. This is a condition known in the fire protection industry as “cold soldering.”

In this particular example, cold soldering might not have any negative impact on fire sprinkler performance. There is not enough information to make an educated ruling. In most cases, though, NFPA 13 requires that when standard spray sprinklers are installed within 6 feet (1.8 m) of one another (8 feet or 2.4 m for extended coverage sprinklers), a baffle should be installed between them.



These sprinklers should have a baffle between them. Photo courtesy Minnesota State Fire Marshal's Office.

Baffles should be installed and located midway between sprinklers and arranged to protect the actuating elements. They should be made of noncombustible or limited-combustible material that will stay in place before and during sprinkler operation. Baffles should be not less than 8 in. (203 mm) wide and 6 in. (152 mm) high. The tops of baffles should extend between 2 in. and 3 in. (51 mm and 76 mm) above the deflectors of upright sprinklers, and the bottoms of baffles should extend downward to a level at least even with the deflectors of pendent sprinklers.

For additional information, refer to NFPA 13, *Standard for the Installation of Automatic Sprinklers*, Chapter 8.