



**AMERICAN
FIRE SPRINKLER
ASSOCIATION**

TECH UPDATE

Weekly Newsletter



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Sprinkler Placement Under Obstructions

“When locating sprinklers under obstructions, Section 8.5.5.3 does not seem to be very clear on the placement of the sprinklers. Also, if the sprinkler is not located under the obstruction, is there a concern of cold soldering from the ceiling sprinklers?”

We have reviewed NFPA 13, 2013 edition as the applicable standard. Our informal interpretation is that the next edition of NFPA 13 will provide additional guidance.

The current criteria are Section 8.5.5.3.1 that indicates sprinklers shall be installed under fixed obstructions over 4 ft wide. This indicates that the sprinkler should be located directly under the obstruction. There are some applications where this is impractical. We know that the heat plume will spill out the sides of the obstruction. The next edition will address this issue with new text as Section 8.5.5.3.1.1 that will state, “Sprinklers shall be located below the obstruction and not more than 3 in. from the outside edge of the obstruction.” It would have been cleaner if the text said no more than 3 inches beyond the outside edge since an extreme interpretation could be the placement is still be under the obstruction but no more than 3 inches from the edge. This aspect is clarified by additional text concerning cold soldering. When sprinklers are located beyond the outside edge of the obstruction, that sprinkler will be subjected to water spray from sprinklers above and can create a cold soldering condition. One could rightly argue that it doesn't matter since the hydraulic procedure only requires one of the two sprinklers to be included in the calculation on the premise that only one of them will activate. As it turns out, though, this would be incorrect. Just like section 8.5.5.3.3 of the 2013 edition requiring intermediate level / rack storage type sprinklers under open gratings, a new section 8.5.5.3.1.2 will require the same type when a sprinkler is located adjacent to the obstruction.

Regarding the deflector distance below the obstruction, this would depend upon the construction type assigned to the bottom of the obstruction. Most obstructions seem to look like unobstructed construction. The next edition will have new text as Section 8.5.5.3.1.3 that will state, “The deflector of automatic sprinklers installed under fixed obstructions shall be positioned no more than 12 in. below the bottom of the obstruction.”

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