



AMERICAN
FIRE SPRINKLER
ASSOCIATION

TECH UPDATE

Weekly Newsletter



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Inside Hose Allowance for Combined Standpipes

“In a combined sprinkler/standpipe riser, are you required to include the hose connection demand in the sprinkler calculation?”

We have reviewed the 2016 editions of NFPA 13 and NFPA 14 as the applicable standards. Our informal interpretation is no, the two systems, despite having a common riser are treated as two independent systems.

Section 11.1.6.4 tells us to calculate the two systems separately. This is additionally stated in A.11.1.6.2. Unfortunately, the annex says “not required to include the standpipe allowance”. This leaves the door open for one to still jump to the conclusion that the 50 gpm/hose connection still applies. Fortunately the Automatic Sprinkler Systems Handbook explicitly states it does not apply.

Regarding 7.10.1.3.1.1 of NFPA 14, there could be an instance where the fire sprinkler demand could exceed the flow rates of the standpipe system. It is rare but one instance that occurred in my plan review days was a healthcare research building where the laboratory had a density of 0.2 gpm/sq. ft. over 1,500 sq. ft. where the quick-response reduction was not allowed. The water flow demand exceeded that of the standpipe system riser of 250 gpm. The sprinkler flow was used in lieu of the standpipe demand. For that instance, let's say the sprinkler demand was 390 gpm (0.2 gpm/sq. ft. X 1,500 sq. ft. plus an additional overage of 90 gpm). That exceeded the flow of 250 gpm for that standpipe riser and the higher flow was used.

NFPA 13 says when to include an inside hose allowance. The buildings constructed today with sprinkler systems have sprinklers throughout where No. 1 below applies. This states in Section 11.1.6.4, “When hose valves for fire department use are attached to wet pipe sprinkler system risers in accordance with 8.17.5.2, the following shall apply:

- (1) The sprinkler system demand shall not be required to be added to standpipe demand as determined from NFPA 14.
- (2) Where the combined sprinkler system demand and hose stream allowance of Table 11.2.3.1.2 exceeds the requirements of NFPA 14, this higher demand shall be used.
- (3) For partially sprinklered buildings, the sprinkler demand, not including hose stream allowance, as indicated in Figure 11.2.3.1.1 shall be added to the requirements given in NFPA 14.” The annex clarifies that if hose valves or stations are provided on a combination sprinkler riser and standpipe for fire department use in accordance with NFPA 14, the hydraulic calculation for the sprinkler system is not required to include the standpipe allowance for fully sprinklered buildings.

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