

The following issue of TechNotes has been written by Terin Hopkins, Public Fire Protection Specialist for the National Fire Sprinkler Association (NFSA) and Jeffrey Shapiro, P.E., FSFPE, of International Codes Consultants.

2021 International Fire Code standpipes in open parking garages

During the 2021 code cycle, Section 905.3.1 of the International Fire Code (IFC) and International Building Code (IBC) was revised and the term “manual” was stricken from Exception 3 of that section. The proponent of that change intended to mandate standpipe systems in open parking garages be either Class III, or Class I automatic or a Class I semi-automatic system, all requiring a pre-connected water supply that is fully capable of satisfying the standpipe system demand. However, during the process, the semi-automatic option was deleted, and the proposed text did not support the proponent’s initial intent to require Class I systems to have an automatic water supply. The deletion of the word “manual” from the text does not result in a requirement for an automatic system. It simply reverted to the original requirement for a Class I system to be either manual, automatic, or semi-automatic, including wet or dry per IFC Section 905, and the adopted reference standard, NFPA 14 Standard for the Installation of Standpipe and Hose Connections.



Change to Section 905.3.1

The change that occurred in the 2021 code development cycle comes from proposal F126-18. In the IBC and IFC, Section 905.3.1 determines when a standpipe is required based on the number of stories or the floor level of the highest occupied floor. Following this section are several exceptions. In proposal F126, specifically Exception 3 was modified, and Exception 4 was eliminated as follows in legislative text (a text strikethrough means the word or phrase is eliminated):

3. Class I manual standpipes are allowed in open parking garages where the highest floor is located not more than 150 feet (45 720 mm) above the lowest level of fire department vehicle access. parking garages.

4. Class I manual Semi-automatic dry standpipes are allowed in open parking garages that are subject to freezing temperatures, provided that the hose connections are located as required for Class II standpipes in accordance with Section 905.5. temperatures.



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Why the Change?

The 2021 IBC and IFC updated several fire protection provisions for parking garages. For example, the 2021 IBC/IFC now requires open parking structures to have automatic sprinkler systems when over 48,000 sq. ft or are more than 55 ft. in height. This new sprinkler threshold and this specific standpipe change in F126 is based on recent open parking structure fires. Fires in open parking structures are occurring more frequently and severely based on the fuel type and fuel load. The reason statement for F126 states that modern automobiles have, "...more combustible synthetic material, thinner/lighter metals and a growing increase of alternative fueled vehicles, GH2, CNG, LPG and Lithium-Ion batteries. Electric Vehicle charging stations have been installed within parking garages to encourage their use... (International Code Council 2021)".



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2021 Significant Changes to the International Fire Code

It should be noted that the 2021 *Significant Changes to the International Fire Code (IFC)* published by the International Code Council (ICC) does not accurately describe the consequence of the changes that produced the new code requirements. This document states, “The revision deletes the option for manual standpipes, which generally require extra effort on the part of the fire service to get water to upper stories and attempt extinguishment of the fire. Class I standpipes are required to be automatic (Kevin Scott and International Code Council 2021).”

While that statement correctly reflects the original proponents intended change, it does not correctly reflect the result of the actual change. As stated, the deletion of the word “manual” does not result in an enforceable requirement for automatic standpipe systems to be installed.

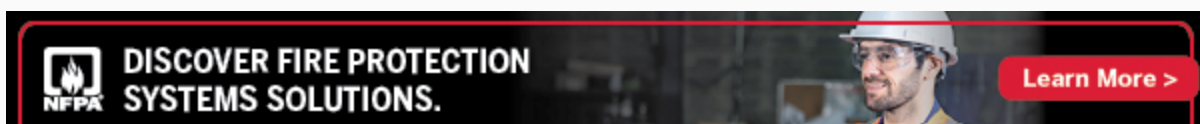
The change also included a deletion to Exception 4, which is no longer necessary, as the revised Exception 3 is now broad enough to override the smaller subset of system requirements that Exception 4 had originally addressed. The deletion of Exception 4 also eliminates the requirement for hose connections to meet the travel distances of Class II standpipe and allowing the Class I hose connection required locations to apply.



References

International Code Council. 2021. “2021 INTERNATIONAL BUILDING CODE (IBC) | ICC DIGITAL CODES.” Codes.iccsafe.org. October 2021. https://codes.iccsafe.org/content/IBC2021P1/chapter-9-fire-protection-and-life-safety-systems#IBC2021P1_Ch09_Sec905.3.

Scott, Kevin H, and International Code Council. 2021. *Significant Changes to the International Fire Code*. Country Club Hills, IL: Icc Publications.



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Starting on July 15, 2020, the NFSA has a new EOD process where members can submit questions, track the progress, and view their EOD cases. The step by step process is detailed in [TechNotes #442](#).

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