



## **2021 Virginia Construction Code Section 903.3.1.2 NFPA 13R Sprinkler Systems in Group R-2 and R-3 Occupancies**

This document was prepared by the State Building Codes Office (SBCO), after receiving multiple requests for clarification regarding the provisions of Section 903.3.1.2 of the 2021 Virginia Construction Code (VCC), to provide additional important information and clarification on the subject.

This document contains informal SBCO staff opinion(s); however, the authority to enforce the code falls under the purview of the local building departments. As such, the local building departments should be consulted regarding requirements for any particular construction project.

### **Summary**

Section 903.3.1.2 of the 2021 IBC includes significant changes regarding when a NFPA 13R sprinkler system is permitted to be installed in group R occupancy buildings. The changes were intended to address podium buildings, but the changes also resulted in significant impacts on other group R-2 and R-3 occupancy buildings. Additional changes are included in the 2024 IBC that provide relief to those buildings.

### **Background**

Construction of group R-2 buildings in accordance with Section 510.2 (a.k.a. podium/pedestal construction) sometimes results in five- or six-story buildings, which raised some concerns related to the use of NFPA 13R sprinkler systems in those buildings, and resulted in the submission of code change proposals to amend the 2021 and 2024 IBC, resulting in some significant changes in both editions of the IBC. The changes in Section 903.3.1.2 of the 2021 IBC were included in the 2021 Virginia Construction Code (VCC), effective January 18, 2024.

### **2021 IBC Changes**

In the 2018 IBC/VCC an NFPA 13R system was permitted to be installed in group R buildings not exceeding 60 feet in height above grade plane. Code change proposal F117-18 amended the 2021 IBC, limiting the use of NFPA 13R systems to group R buildings where the floor level of the highest story is 30 feet or less above the lowest level of fire department vehicle access. The reduced height of 30 feet was selected to correlate with the threshold for requiring standpipes. Testimony during code change hearings also included that the 30 feet limit was derived from

ISO standards which require a 35 feet ground ladder (with an effective height of 30 feet) to be carried on ISO certified fire trucks.

As reasoned by the code change proposal, proposal F117-18 (2021 IBC) intended to address concerns associated with Group R-2 buildings of podium construction, where a 35-foot ladder may not reach the upper stories. However, the changes to the 2021 IBC affect all group R-2 and R-3 buildings by greatly reducing the allowed building height, which in some cases, especially for buildings with ceiling heights greater than 8 feet, may limit construction to three stories.

## **2024 IBC Changes**

Section 903.3.1.2 was further modified in the 2024 IBC via code change proposal F72-21 (which was approved as modified by public comment #3). The changes in the 2024 IBC include (1) increasing the height to 45 feet for Group R-2 occupancies; and (2) requiring that the height to be measured from the lowest level of fire department vehicle access to the roof (with three varying points of measure depending on roof configuration). Requirements “*For other than Group R-2 occupancies*” remain the same as those prescribed by the 2021 IBC.

Note: A cursory review of the Complete Monograph for the 2024 Group A proposed Changes to the I-Codes did not reveal any code change proposals with the intent to further modify the 2024 IFC/IBC Section 903.3.1.2 (for the 2027 IFC/IBC).

2024 Group A proposed Changes to the I-Codes - Complete Monograph:

<https://www.iccsafe.org/wp-content/uploads/2024-Complete-Code-Change-Monograph.pdf>

## **Applying the Changes to Group R-2 Buildings**

Considering the above, in our opinion, under the 2021 VCC, it would be appropriate to apply the group R-2 limitations of 2024 IBC Section 903.3.1.2 to a group R-2 building, and the approval of code modifications in accordance with VCC Section 106.3, based on the provisions set forth by the 2024 IBC, are warranted.

## **Applying the Changes to Group R-3 Buildings**

Although not required, it is common for Group R-3 buildings to be provided with a NFPA 13R system, in accordance with Section 903.3.1.2, to take advantage of the additional story allowed pursuant to Table 504.4. It is important to note that the intent of the 2024 IBC changes was not to require Group R-3 occupancies, which are normally subject to lower levels of regulatory control when compared to Groups R-1 and R-2, to comply with the requirements “*For other than Group R-2 occupancies*”. As reasoned by the proponent of public comment #3, the differentiation between “*other than Group R-2 occupancies*” and “*Group R-2 occupancies*” was

due to “recognizing the different operational, occupant and architectural attributes of R2 vs. R1 occupancies.” (excerpt from the reason statement)

Considering the above, in our opinion, under the 2021 VCC, it would be appropriate to apply the group R-2 limitations of 2024 IBC Section 903.3.1.2 to a group R-3 building, and the approval of code modifications in accordance with VCC Section 106.3, based on the provisions set forth by the 2024 IBC, are warranted.

#### **2021 IBC Resources**

- F117-18 (including public comments): <https://media.iccsafe.org/code-development/group-a/IFC.pdf> (beginning on page 139)
- Committee Action Hearings - video recordings: <https://www.cdpaccess.com/videos/222/>
- Public Comment Hearing - video recordings: <https://www.cdpaccess.com/videos/223/>

#### **2024 IBC Resources:**

- F72-21 (including public comments): <https://www.iccsafe.org/wp-content/uploads/IFC-2021-Group-A-2021-Group-A-Aug-13.pdf> (beginning on page 73)
- Committee Action Hearings - video recordings: <https://www.cdpaccess.com/videos/3715/>
- Public Comment Hearings - video recordings: <https://www.cdpaccess.com/videos/4553/>

Please contact the State Building Codes Office with any questions or for additional information at [sbco@dhcd.virginia.gov](mailto:sbco@dhcd.virginia.gov) or (804) 371-7150