

FIRE Prevention



Supplemental Policy Clarification

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Number: 2015-01

Subject: Establish criteria related to fire-flow reductions for structures with NFPA 13R automatic fire sprinkler systems.

Reference: 2012 IFC Section B105 (Fire-Flow Requirements for Buildings)

Issue Date: Mar 11, 2015 Issued By: S. Kollar, Fire Prevention Officer

Approval Date: Mar 12, 2015 Approved By: C. Mathis, Fire Marshal *C. Mathis*

Revision Date: Revised By:

Issue/Question: This policy shall clarify code text listed in 2012 IFC Section B105.2. This clarification will set parameters that specifically address reductions in fire-flow when an approved NFPA 13R automatic fire sprinkler systems is installed in any building other than one- and two-family dwellings.

NFPA 13R systems differ from NFPA 13 systems in both application and overall sprinkler protection.

NFPA 13R systems are limited to apartments, motels, hotels, select board and care facilities that are four stories or less in height. NFPA 13R systems consider the economics of sprinkler protection by allowing the omission of sprinkler coverage in more areas of the building than is permitted by NFPA 13. Examples of such areas include certain types of bathrooms, closets, porches, balconies, concealed combustible spaces, and most significantly, attic spaces. NFPA 13R systems mainly focus on life safety while providing some limited property conservation benefits. NFPA 13R systems differ from full NFPA 13 systems which focuses on life safety and property conservation by requiring fire sprinkler coverage throughout all areas of the structure, minus some code allowed exceptions.

The potential for a fire to start or extend into unprotected areas of a structure protected by an NFPA 13R system could over time result in a fire that overwhelms the fire sprinkler system forcing the responding emergency personnel to heavily rely on manual firefighting operations involving available fire hydrants. Protection of exposures and adjacent structures would also be a significant concern for emergency personnel.

Discussion: As a result, it is important that appropriate fire-flows are available to responding emergency personnel for manual firefighting operations.

2012 IFC Section B105.2 (Fire Flow Requirements For Buildings Other Than One- And Two-Family Dwellings) states "the minimum fire-flow and flow duration for building other than one- and two-family dwellings shall be as specified in Table B105.1. Exception: A reduction in required fire-flow of up to 75 percent, as approved, is allowed when the building is provided with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2. The resulting fire-flow shall not be less than 1,500 gallons per minute (5678 L/min) for the prescribed duration as specified in Table B105.1."

Concerns regarding the extent of sprinkler protection provided by NFPA 13R can be mitigated by the flexibility that the fire code official retains over how much of a reduction will be allowed is embodied in the phrases "...up to..." and "...as approved..." in the current code text of IFC B105.2 which speaks directly to fire-flow requirements for Buildings other than one- and two-family dwellings.

The following interpretation and subsequent policy has been established by the Grand Junction Fire Department.

Decision:

The maximum threshold of 75 percent that may be considered by the fire code official as listed in 2012 IFC Section B105.2 has been reduced to a maximum of 50 percent for all proposed NFPA 13R automatic fire sprinkler systems.

A reduction in required fire-flow of up to 50 percent, as approved by the authority having jurisdiction, is allowed when the building is provided with an approved NFPA 13R automatic sprinkler system installed in accordance with IFC 903.3.1.2. The resulting fire-flow shall not be less than 1,500 gallons per minute for the prescribed duration as specified in IFC Table B105.1 (Minimum Required Fire-Flow and Flow Duration for Buildings).

This decision applies throughout the Grand Junction Fire Department's service area to include the City of Grand Junction, Grand Junction Rural Fire Protection District and any other areas serviced by official contract, agreement or requirement where jurisdiction exists.