
FIRE PREVENTION AND BUILDING SAFETY COMMISSION
Department of Homeland Security**Written Interpretation of the State Building Commissioner****Interpretation #:** CEB-2020-31-2014 IBC-504.2**Building or Fire Safety Law Interpreted**

[675 IAC 13-2.6](#), 2014 Indiana Building Code, Section 504.2 Automatic sprinkler system increase. Where a building is equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, the value specified in Table 503 for maximum *building height* is increased by 20 feet (6096 mm) and the maximum number of *stories* is increased by one. These increases are permitted in addition to the *building area* increase in accordance with Sections 506.2 and 506.3. For Group R buildings equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.2, the value specified in Table 503 for maximum *building height* is increased by 20 feet (6096 mm) and the maximum number of *stories* is increased by one, but shall not exceed 60 feet (18 288 m) or four *stories*, respectively.

Exception: The use of an automatic sprinkler system to increase building heights shall not be permitted for the following conditions:

1. Buildings, or portions of buildings, classified as Group I-2 occupancy of Type IIB, III, IV or V construction.
2. Buildings, or portions of buildings, classified as a Group H-1, H-2, H-3 or H-5 occupancy.

Issue

Whether, under Section 504.2, a building of R-1 occupancy and Type IIIB construction equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1 is permitted to be 5 stories in height.

Interpretation of the State Building Commissioner

Section 504.2 allows a building of R-1 occupancy and Type IIIB construction to be 5 stories in height when equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1.

Rationale

Table 503 lists maximum allowable building height and area for non-sprinklered buildings, based on occupancy group and construction type. Section 504.2 increases that maximum allowable height in the presence of qualifying automatic sprinkler systems. In doing so, it describes two specific conditions, with the potential for different allowable height limits between them.

The first of these two conditions is the presence of a sprinkler system that complies with Section 903.3.1.1 (i.e., a system conforming to the NFPA 13 Standard), in which case allowable height may be increased beyond the Table 503 limits by 20 feet and one story. The only effective limit on total resultant height is the base figures shown in the table, to which the allowable increases are added. This first condition is not restricted to any occupancy group or groups, other than certain I and H occupancies, which are completely excluded from the increase by exception.

The second condition is a building of R occupancy with a sprinkler system that complies with Section 903.3.1.2 (i.e., a system conforming to the NFPA 13R standard), in which case the same 20 feet and one story of additional height is permitted, but subject to a hard limit of 60 feet maximum height and 4 maximum stories, regardless of the base figures shown in Table 503. For example, if the tabular height limit is already 4 stories, an additional story would exceed the maximum limit set by Section 504.2, and it would therefore not be permitted, despite the fact that the sprinkler system is present.

The key to understanding this interpretation is in understanding the difference between these two conditions, and what factor determines which of the two conditions applies to a given structure of R occupancy.

The first condition applies to all occupancy groups except for those I and H occupancies listed in the exception, and it is based on the presence of an NFPA 13 sprinkler system. The second condition applies only to R occupancy groups, and it is based on the presence of an NFPA 13R sprinkler system.

Do not make the mistake of thinking that R occupancies cannot qualify for the first condition merely because the second condition applies specifically to them. As noted above, the first set can apply to any occupancy group other than the I and H groups that are excepted. In the case of an R occupancy, it is the type of sprinkler system that determines whether the structure qualifies for the first condition or the second, and therefore what its

maximum allowable height will be.

The circumstances of this interpretation indicate that the structure is equipped throughout with an NFPA 13 system, so it falls under the first condition, which allows 20 feet/one story to be added to the Table 503 maximum figures, with no other qualifying limits on its resultant height. For a building of R-1 occupancy and Type IIIB construction, Table 503 lists a maximum height of 55 feet and 4 stories. The sprinkler addition then results in a maximum allowable height of 75 feet and 5 stories.

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