# ADDENDUM TO INITIAL EXPRESS TERMS AND RATIONALE FOR PROPOSED BUILDING STANDARDS OF THE OFFICE OF THE **STATE FIRE MARSHAL** REGARDING THE **2022 CALIFORNIA BUILDING CODE**, CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 2

# (SFM 02/22)

The State agency shall draft the regulations in plain, straightforward language, avoiding technical terms as much as possible and using a coherent and easily readable style. The agency shall draft the regulation in plain English. A notation shall follow the express terms of each regulation listing the specific statutes authorizing the adoption and listing specific statutes being implemented, interpreted, or made specific (Government Code Section 11346.2(a)(1)).

If using assistive technology, please adjust your settings to recognize underline, strikeout, italic and ellipsis.

## LEGEND for EXPRESS TERMS (Based on model codes - Parts 2, 2.5, 3, 4, 5, 9, 10)

* Model Code language appears upright
* Existing California amendments appear in *italic*
* Amended model code or new California amendments appear *underlined & italic*
* Repealed model code language appears ~~upright and in strikeout~~
* Repealed California amendments appear in *~~italic and strikeout~~*
* Ellipses ( ...) indicate existing text remains unchanged

## ADDENDUM to INITIAL EXPRESS TERMS and RATIONALE

### ITEM 14 Sections 310.5, 506.2.1, 1010.2.9 and Table 504.4

[The SFM is proposing errata to the 2022 California Building Code.]

**310.5 Residential Group R-4.** Residential Group R-4 occupancy shall include buildings, structures or portions thereof for more than *six ambulatory clients*, but not more than 16 persons, excluding staff, who reside on a 24-hour basis in a supervised residential environment and receive custodial care*. The persons receiving care are capable of self-preservation.* ~~Buildings of Group R-4 shall be classified as one of the occupancy conditions specified in Section 310.5.1 or 310.5.2.~~ *This occupancy …*

**Reason:** Group R-4 in California is not divided into condition 1 and 2. This is an existing amendment to delete the reference to the conditions from the model code.

**TABLE 504.4  
ALLOWABLE NUMBER OF STORIES ABOVE GRADE PLANE a, b, *n***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **OCCUPANCY CLASSIFICATION** | **…** |  | **Type VA** | **Type VB** |
| … | … | … | … | … |
| R-2h | S13R | … | ~~4~~*3* | ~~3~~*2* |

**Reason:** The proposed errata is an existing California amendment from the 2006 Triennial rulemaking cycle. At that time the Health and Safety Code Section 18928 was amended to use the International Code Council publication of the building code as the California State model code.

The general purpose of the transition was to update and codify a new edition of the California Building Code (California Code of Regulations, Title 24, Part 2) based upon a more current edition of a model code. The current California Building Code in 2005 was the 2001 California Building Code which is based upon the 1997 Uniform Building Code of the International Conference of Building Officials. This proposed action:

* Repeal the 1997 Uniform Building Code of the International Conference of Building Officials and incorporate and adopt in its place the 2006 International Building Code of the International Code Council for application and effectiveness in the 2007 California Building Code pursuant to Health and Safety Code 18928. Health and Safety Code 18928 requires any state agency adopting model codes to adopt the most recent edition.
* Repeal amendments to the 1997 Uniform Building Code and/or California Building Standards not addressed by the model code that are no longer necessary nor justified pursuant with Health and Safety Code 18930(a)(7).
* Adopt and implement additional necessary amendments to the 2006 International Building Code that address inadequacies of the 2006 International Building Code as they pertain to California laws.
* Bring forward previously existing California amendments, which represent no change in their effect from the 2001 Triennial California Building Standards Code. Some of the existing California amendments will be amended as follows:
  + Renumbering in order to fit into the newly adopted text of the 2006 International Building Code.
  + Adding or changing the references to the application authority of SFM.
  + Language changes for clarification of existing law.
  + Not adopting into the text of the 2006 International Building Code .
* Codify non-substantive editorial and formatting amendments from the format based upon the 1997 Uniform Building Code to the format of the 2006 International Building Code.

Furthermore, revisions to 504.2 and 506.4 eliminate the allowances for Group R occupancy buildings protected with an NFPA 13R automatic sprinkler system.

To identify a balanced approach to fire protection based on the historical use of height and area provisions and data demonstrate California’s minimum requirements for the built environment have safeguarded the public health, safety, and general welfare of the occupants and to the property as a whole since the 1920s.

The additional safety provided by an automatic sprinkler system has been acknowledged as justification for either increasing the allowable height of a building by one (1) story or increasing the allowable area beyond the limits established in Table 5-A, but not both. The current code allows both without providing any mitigating protective requirements to balance the increased exposure risk to occupants and safety/rescue responders, as well as property protection.

The reduced sprinkler coverage allowed by NFPA 13R (NFPA 13R exempts concealed spaces such as attics) reduces the effectiveness of fire sprinklers within the most vulnerable occupancy types (Group R) for fire hazard. Furthermore, the IBC does not require any additional protective features to mitigate the increase in potential risk associated with a building that is both taller and larger in area, thereby resulting in a potential decrease in public safety. This section is further amended by removing language which permits additional height and story in Group R buildings equipped with an NFPA 13R (instead of an NFPA 13) fire protection system. While the code requires a full NFPA 13 system for other occupancy groups utilizing section 504.2 for height and story increase, it does not currently require mitigating protective features within R occupancies when utilizing the reduced NFPA 13R system for the same purpose. This amendment will address the unmitigated decrease in fire safety currently allowed by section 504.2.

The CALFIRE/Office of the State Fire Marshal (OSFM) recognizes and supports the benefits of automatic fire sprinkler protection in buildings. The need for a balanced approach to fire protection is also recognized and is the basis for this proposal which permits the use of automatic sprinkler systems for an increase in height or area but not both. During the current California code adoption process, building and fire officials reviewed data from various sources in an attempt to justify the increased building size of the 2006 IBC over the allowable areas/heights in all three legacy codes. There appears to be little science behind the table values and formulas, OSFM and California code officials involved in this process are not comfortable and cannot justify the elimination of redundancy from the code and an over-reliance on fire sprinkler systems. Several factors support the need to restore balance to this code:

1. There is a public expectation of the level of safety inherent in the current codes which become policy upon local adoption. The west coast has a lower fire loss record than the rest of the county, which may be, at least partially attributed to construction requirements. There is an increase in risk that accompanies larger building sizes which cannot be justified considering national fire statistics that are among the worst of any other industrialized nation.
2. There are no redundant mitigating protective features to address the potential for sprinkler failure due to a disruption in water supply, mechanical failure, lack of proper maintenance, human error, or temporary disruptions to sprinkler systems that occur during typical remodeling and tenant improvement projects. Furthermore, reductions in water supply have resulted after every major seismic event in California, which would render an automatic sprinkler system ineffective if a fire were to occur. What is the true reliability of a sprinkler system? A recent article cites 89% as the figure when both the performance and operational reliability are factored in. There have been at least two major recalls of defective sprinklers. They are out of service for maintenance, construction (TI) and/or unintentional human error. There is also a vulnerability factor – besides seismic, we have experience where systems were taken out by vehicle crash or explosion. In instances of improper design/use or arson, the system can be overcome. Sprinkler systems often do not extinguish the fire and there can be tremendous smoke generation and spread (particularly smoldering or shielded fires, etc). In fact, sprinklers drive the smoke lower and impede visibility. Building size becomes more of an issue to both rescue (panic) and firefighting.
3. The quantity and capability of emergency response resources is based on the infrastructure and building design that has existed in California, and other states, for decades. Therefore, the level of fire and life safety would be decreased below what we have today in terms of building size. Public safety departments are staffed for current building sizes and larger buildings may lead to larger fires and need for staffing/tactical/infrastructure changes.
4. This results in a decreased level of public safety, because fire rescue and fire suppression responders would be required to accomplish their emergency response tasks in larger multi-story buildings, without the benefit of increased fire protection based on either sprinkler, type of construction, area separation walls, or some combination thereof.

By limiting the use of a fire sprinkler system to an increase in height or area, but not both serves to restore balance to the code.

This code change also proposes to eliminate the special allowances given for Group R occupancy buildings that are protected with an NFPA 13R automatic sprinkler system as specified in Section 903.3.1.2. Currently, Section 504.2 will allow an increase in the building height of one story and 20 feet where an NFPA 13R sprinkler system is provided if the building does not exceed a total height of four stories or 60 feet which is within the scope limitations of the NFPA 13R standard. Furthermore, Section 506.4 allows an area increase for the installation of a NFPA 13R sprinkler system for Group R buildings that are greater than three stories in height. We do not believe it is appropriate to provide for such allowances for the types of construction which in essence lessens the built-in fire-resistive passive protection where an NFPA 13R sprinkler system is installed. NFPA 13R sprinkler systems are primarily provided for life safety. They were developed for that purpose as clearly stated in Section 1.2 of the 2002 edition. It is interesting to quote the Annex A discussion of the purpose of NFPA 13R which states: “Various levels of sprinkler protection are available to provide life safety and property protection. This standard is designed to provide a high, but not absolute, level of life safety and a lesser level of property protection. Greater protection to both life and property could be achieved by automatic sprinklers in all areas in accordance with NFPA 13… it should be recognized that the omission of sprinklers from certain areas could result in the development of untenable conditions in adjacent spaces. Where evacuation times could be delayed, additional sprinkler protection and other fire protection features, such as detection and compartmentalization, could be necessary.” We believe that says it all about an NFPA 13R sprinkler systems.

However, the intent of the IBC as expressed in Section 101.3 Intent is as follows: “The purpose of this code is to establish the minimum requirements to safeguard the public health, safety, and general welfare… and safety to life and property from fire and other hazards attributed to the built environment and to provide safety to fire fighters and emergency responders during emergency operations.” We believe that allowing the use of an NFPA 13R sprinkler system to increase the size of a building would be counter to the intent and purpose of the IBC. Types of construction are designed to limit the height and area of buildings based on the occupancy and the degree of built-in fire-resistive protection and use of combustible or noncombustible construction materials. Buildings are allowed to get larger in area and taller in height with more fire-resistance built in and the lesser use of combustible construction for the building’s structural elements. Therefore, property protection is a critical outcome of the use of types of construction. Of course, type of construction also plays a role in life safety, especially in multi-story buildings, and has an impact on fire fighter safety as well. But an NFPA 13R sprinkler system is basically a partial sprinkler system because the standard does not require sprinklers in many concealed areas including attics. So why should a building protected with an NFPA 13R sprinkler system basically enjoy the same increases as a building more completely protected with an NFPA 13 sprinkler system?

Within the last few years there have been many fires involving buildings protected with NFPA 13R sprinkler systems which have burned to the ground. In most of those cases, the fire was able to get into the unprotected attic space, spread throughout the building, and then burn downward, overpowering the sprinkler system. Certainly, allowable increases in height and area are not appropriate for sprinkler systems that can allow a building to be burned to the ground.

**506.2.1 Single-occupancy buildings.**

*…*

*Sa* = *For other than Group A, E, H, I, L and R occupancies, high-rise buildings, and other applications listed in Section 1.11 regulated by the Office of the State Fire Marshal,* 3 where the actual number ofstories above grade plane exceeds three. *For Group A, E, H, I, L and R occupancies, high-rise buildings, and other applications listed in Section 1.11 regulated by the Office of the State Fire Marshal, actual number of building stories above grade plane, not to exceed two.*

**Reason:** The model code change was missed in the existing California amendment for the Sa formula of Section 506.2.1 Single-occupancy buildings.

**1010.2.9 Panic and fire exit hardware.** Swinging doors serving a Group H occupancy and swinging doors serving rooms or spaces with an occupant load of 50 or more in a Group A or E occupancy, *assembly area …*

**Reason:** The comma between the word ‘occupancy’ and ‘assembly’ was missed in the printed and digital copies of the California Building Code. The PDF version is correct. Without the comma the intent appears to change. The errata is to correct the intent and add the comma back in the code text.

**CAC Recommendation:**

[Enter CAC recommendation(s), if any]

**Agency Response:**

[Enter the agency's response to CAC recommendation(s)]