

IBC — Structural



2021 GROUP A PROPOSED CHANGES TO THE I-CODES

April 11 – May 5, 2021
Virtual Committee Action Hearings

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IBC Structural Code Change Proposals

The following code change proposals are labeled as structural code change proposals because they are proposals for changes to sections in chapters of the International Building Code that are designated as the responsibility of the IBC-Structural Code Development Committee (see page x of the Introductory pages of this monograph), which meets in the Group B cycle in 2022. However the changes included in this Group A code development cycle are to sections of the code that have been prefaced with a [BF] or [BG], meaning that they are the responsibility of a different IBC Code Development Committee—either the IBC-Fire Safety Committee [BF] or the IBC-General Committee [BG].

The committee assigned for each code change proposal is indicated in a banner statement near the beginning of the proposal. Both the IBC-Fire Safety and the IBC-General hearing orders are include here for your reference.

2021 GROUP A – PROPOSED CHANGES TO THE INTERNATIONAL BUILDING CODE – FIRE SAFETY

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2021 GROUP A – PROPOSED CHANGES TO THE INTERNATIONAL BUILDING CODE – GENERAL

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TENTATIVE ORDER OF DISCUSSION 2021 PROPOSED CHANGES TO THE INTERNATIONAL BUILDING CODE – FIRE SAFETY

The following is the tentative order in which the proposed changes to the code will be discussed at the public hearings. Proposed changes which impact the same subject have been grouped to permit consideration in consecutive changes.

Proposed change numbers that are indented are those which are being heard out of numerical order. Indentation does not necessarily indicate that one change is related to another. Proposed changes may be grouped for purposes of discussion at the hearing at the discretion of the chair. Note that some FS code change proposals may not be included on this list, as they are being heard by another committee.

Number Not Used

FS13-21

G4-21	FS27-21	FS59-21	FS93-21
G7-21	FS28-21	FS60-21	FS94-21
G8-21	FS29-21	FS61-21	FS95-21
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G27-21	FS33-21	FS65-21	FS99-21
FS1-21	FS34-21	FS66-21	FS100-21
FS2-21	FS35-21	FS67-21	FS101-21
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FS5-21	FS38-21	FS70-21	FS103-21
FS6-21	FS39-21	FS71-21	FS104-21
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FS18-21	FS51-21	FS84-21	FS116-21
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FS148-21
FS149-21 Part I
FS149-21 Part II
FS150-21
FS151-21
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 S5-21
 S10-21
 F15-21 Part II
 F16-21 Part II
FS152-21
 G 122-21
FS153-21
 F60-21 Part II
 PM21-21

TENTATIVE ORDER OF DISCUSSION 2021 PROPOSED CHANGES TO THE INTERNATIONAL BUILDING CODE – GENERAL

The following is the tentative order in which the proposed changes to the code will be discussed at the public hearings. Proposed changes which impact the same subject have been grouped to permit consideration in consecutive changes.

Proposed change numbers that are indented are those which are being heard out of numerical order. Indentation does not necessarily indicate that one change is related to another. Proposed changes may be grouped for purposes of discussion at the hearing at the discretion of the chair. Note that some G code change proposals may not be included on this list, as they are being heard by another committee.

PC1-21	G54-21	G13-21	G142-21
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PC3-21	G64-21	G106-21 Part I	G144-21
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G12-21	G75-21	G115-21	G153-21
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G15-21	G77-21	G117-21	G155-21
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G19-21	G79-21	G119-21	G157-21
G20-21 Part I	G80-21	G120-21	G158-21
G21-21	G81-21	G121-21	G159-21
G22-21	G82-21	G122-21 Part I	G160-21
G25-21	G86-21 Part I	G123-21	G161-21
G26-21	G87-21	G124-21	G162-21
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G30-21	G89-21	G126-21 Part I	G164-21
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F186-21 Part II	G98-21	G131-21	G168-21
G35-21	G99-21 Part I	G132-21	G169-21
G42-21	G99-21 Part II	G133-21	G170-21
G43-21	G99-21 Part III	G134-21	G171-21
G44-21 Part I	G99-21 Part IV	G135-21	G172-21
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G53-21	G104-21	G141-21	

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S9-21
F119 Part II
PC16-21
G175-21 Part I
G176-21
G177-21
G178-21
G179-21
G180-21
G181-21 Part I
G182-21
G183-21 Part I
G184-21
G185-21
G187-21
G188-21
G189-21
E107-21 Part II
G190-21
G191-21
G192-21
G193-21
G194-21
G195-21
G196-21
G197-21
G198-21
G199-21 Part I
G201-21
G202-21

S1-21

IBC: [BF] 1505.1

Proponents: Aaron Phillips, representing Asphalt Roofing Manufacturers Association (aphillips@asphaltroofing.org)

THIS CODE CHANGE WILL BE HEARD BY THE IBC-FIRE SAFETY CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Building Code

Revise as follows:

[BF] 1505.1 General. Fire classification of *roof assemblies* shall be in accordance with Section 1505. ~~Roof assemblies shall be divided into the classes defined in this section. The minimum fire classification of *roof assemblies* installed on buildings shall comply with Table 1505.1 based on type of construction of the building. Class A, B and C *roof assemblies* and *roof coverings* required to be listed by this section shall be tested in accordance with ASTM E108 or UL 790. In addition, *fire-retardant-treated wood roof coverings* shall be tested in accordance with ASTM D2898. The minimum *roof coverings* installed on buildings shall comply with Table 1505.1 based on the type of construction of the building.~~

Exception: *Skylights and sloped glazing* that comply with Chapter 24 or Section 2610.

Reason Statement: The initial sentence of Section 1505.1 is modified to clarify that Section 1505 establishes fire classification requirements of roof assemblies instead of a requirement to divide roof assemblies into classes. A new sentence is introduced as a replacement for the final sentence. It clarifies that Table 1505.1 provides the minimum fire classification for roof assemblies based on type of construction, rather than the "minimum roof covering," which is a vague and potentially confusing phrase. Rearrangement of the section makes it read more logically and improves clarity.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This proposal clarifies code language and rearranges existing provisions. These changes are not expected to affect cost of construction.

S1-21

S2-21

IBC: TABLE 1505.1

Proponents: Aaron Phillips, representing Asphalt Roofing Manufacturers Association (aphillips@asphaltroofing.org)

THIS CODE CHANGE WILL BE HEARD BY THE IBC-FIRE SAFETY CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Building Code

Revise as follows:

**TABLE 1505.1
MINIMUM ROOF COVERING CLASSIFICATION FOR TYPES OF CONSTRUCTION^{a, b}**

IA	IB	IIA	IIB	IIIA	IIIB	IV	VA	VB
B	B	B	C ^c	B	C ^c	B	B	C ^c

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m².

- a. Unless otherwise required in accordance with the *International Wildland-Urban Interface Code* or due to the location of the building within a fire district in accordance with Appendix D.
- b. Nonclassified roof coverings shall be permitted on buildings of ~~Group R-3~~ and Group U occupancies, where there is a minimum fire-separation distance of 6 feet measured from the leading edge of the roof.
- c. Buildings that are not more than two stories above grade plane and having not more than 6,000 square feet of projected roof area and where there is a minimum 10-foot fire-separation distance from the leading edge of the roof to a lot line on all sides of the building, except for street fronts or public ways, shall be permitted to have roofs of No. 1 cedar or redwood shakes and No. 1 shingles constructed in accordance with Section 1505.7.

Reason Statement: This proposal removes the existing permission to use nonclassified roof coverings on buildings of Group R-3 occupancy. The option permitting nonclassified roof coverings on buildings in Group R-3 has been present in all versions of the IBC back to and including the 2000 edition. However, the description of Group R-3 occupancy in the 2000 IBC differs from successive editions; it includes buildings with no more than two dwelling units or adult and child care facilities that accommodate no more than five people for less than 24 hours. IBC editions from 2003 through 2021 include within Group R-3 buildings with up to sixteen occupants.

In the 2021 IBC, Group R-3 occupancies have occupants who are primarily permanent, and this Group encompasses those buildings not within Groups R-1, R-2, R-4 or I. Among the building uses included in Group R-3 are congregate living facilities with up to sixteen nontransient occupants; these buildings are permitted to use nonclassified roof coverings. In comparison, Group R-1 includes congregate living facilities with more than ten transient occupants, yet does not permit nonclassified roof coverings. As an additional example, Group R-4 occupancies are restricted to between six and sixteen occupants, excluding staff. Both Groups R-1 and R-4 include buildings in which the number of occupants may be less than the number permitted in a building that falls within Group R-3, yet both Groups R-1 and R-4 do not permit nonclassified roof coverings.

The acceptance of nonclassified roof coverings on Group R-3 buildings is puzzling since all other residential groups require classified roof coverings, and the number of occupants permitted in some Group R-3 buildings is greater than the number permitted in some Group R-1 and R-4 buildings. The current situation, which permits nonclassified roof coverings on Group R-3 buildings, may increase the life safety hazard to occupants of these buildings and is worthy of reconsideration.

Cost Impact: The code change proposal will increase the cost of construction. The cost of classified roof coverings may be higher than the cost of non-classified roof covers in some situations.

S3-21

IBC: [BF] 1505.2

Proponents: Aaron Phillips, representing Asphalt Roofing Manufacturers Association (aphillips@asphaltroofing.org)

THIS CODE CHANGE WILL BE HEARD BY THE IBC-FIRE SAFETY CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Building Code

Revise as follows:

[BF] 1505.2 Class A roof assemblies. Class A roof assemblies are those that are effective against severe fire test exposure. Class A roof assemblies and roof coverings shall be listed and identified as Class A by an approved testing agency. Class A roof assemblies shall be permitted for use in buildings or structures of all types of construction.

Exceptions:

1. Class A roof assemblies include those with coverings of brick, masonry or an exposed concrete roof deck.
2. Class A roof assemblies also include ferrous or copper shingles or sheets, metal sheets and shingles, clay or concrete roof tile or slate installed on noncombustible decks or ferrous, copper or metal sheets installed without a roof deck on noncombustible framing.
3. Class A roof assemblies include minimum 16 ounce per square foot (0.0416 kg/m²) copper sheets installed over combustible decks.
4. Class A roof assemblies include slate installed over ASTM D226, Type II or ASTM D4869, Type IV underlayment over combustible decks.

Reason Statement: Exception 4 was added to Section 1505.2 via proposal S20 in the code development cycle that created the 2015 edition. The supporting information for S20 included test data substantiating the Class A classification of a roof assembly that comprises slate shingles and ASTM D226 Type II underlayment installed on a combustible deck. This proposal recommends addition of ASTM D4869 Type IV underlayment as an alternative to D226 Type II in Exception 4 based on equivalent compositional requirements. The minimum masses of saturated felt, saturant, and desaturated felt are equivalent for both ASTM D226 Type II and ASTM D4869 Type IV saturated felts. Because the compositional requirements of ASTM D226 Type II and ASTM D4869 Type IV saturated felts are equivalent, the behavior in a UL 790 or ASTM E108 fire test can be expected to be equivalent.

Cost Impact: The code change proposal will not increase or decrease the cost of construction

The proposal adds an alternative underlayment option, which can generally be expected to increase competitiveness in the market. No change in cost of construction is anticipated.

S3-21

S4-21

IBC: SECTION 1510, [BF] 1510.1, 1510.2 (New), [BF] 1510.2, [BF] 1510.3, [BF] 1510.4

Proponents: Amanda Hickman, representing RIMA International (amanda@thehickmangroup.com)

THIS CODE CHANGE WILL BE HEARD BY THE IBC-FIRE SAFETY CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Building Code

Revise as follows:

SECTION 1510 RADIANT BARRIERS INSTALLED ABOVE OR BELOW ROOF DECK.

[BF] 1510.1 **General.** Where a radiant barrier is installed above or below a roof deck it shall comply with Sections 1510.2 through ~~1510.4~~ 1510.5.

Add new text as follows:

1510.2 Material fire testing. The radiant barrier material shall have a flame spread index and a smoke-developed index determined in accordance with ASTM E84 or UL 723. Non-structural radiant barrier materials shall be mounted in accordance with ASTM Practice E2599.

Revise as follows:

[BF] ~~1510.2-~~ **1510.3 Assembly fire testing.** When installed, radiant barriers shall comply with the following:

1. Roof assemblies that include a radiant barrier shall comply with Section 1505.1.
2. Radiant barriers shall be permitted for use above decks where the radiant barrier is covered with an approved roof covering and the system consisting of the radiant barrier and the roof covering complies with the requirements of either FM 4450 or UL 1256.

[BF] ~~1510.3-~~ **1510.4 Installation.** The low-emittance surface of the radiant barrier shall face the continuous airspace between the radiant barrier and the roof covering.

When installed, radiant barriers shall comply with one of the following:

1. Radiant barriers installed above roof deck are permitted for use where the roof covering requires a batten and a counter batten. When installed, radiant barriers shall be installed between the batten and a counter batten or above the counter batten with a low-emittance surface of the radiant barrier facing the airspace between the radiant barrier and roof deck.
2. Radiant barriers installed below deck shall be installed in accordance with ASTM C1744.

[BF] ~~1510.4-~~ **1510.5 Material standards.** A radiant *Radiant barrier materials* installed above a deck shall comply with ASTM C1313/1313M.

Reason Statement:

The purpose of this proposal is to improve the language in Section 1510 relating to radiant barriers. The improvements include expansion and clarification of the Material and Assembly Fire Safety Testing requirements, additional information detailing installation of radiant barriers above roof deck and the inclusion of a “below roof deck” application for radiant barriers.

This proposal is a result of feedback received from many stakeholders related to the “Installation” subsection within the existing code language. This proposal addresses those issues brought forward with a more detailed description of the correct installation procedure for above roof deck applications. The primary issue for clarification is that a radiant barrier, no matter where it is installed, requires an air space in order to provide benefit. This proposed language clarifies the required structure to create and maintain this important air space.

Perhaps the most important addition to this section is the inclusion of “below deck” radiant barrier applications. The current language in Section 1510 addresses only the radiant barriers that are installed above the roof deck. However, it is silent on radiant barriers installed below the roof deck, which are the most commonly installed applications.

This proposal also addresses the feedback received on this section from numerous stakeholders and the ICC Committee from the previous cycle. Radiant barriers installed below roof deck have been in the marketplace for over 35 years. Annual volume is approximately 1 billion square feet.

The proposed language is needed to assure the inclusion of the appropriate fire testing measures and the required installation method for radiant barriers above and below the roof deck.

Cost Impact: The code change proposal will not increase or decrease the cost of construction

The code change proposal will neither increase or decrease construction costs as radiant barriers are not mandatory.

S5-21

IBC: SECTION 1510, [BF] 1510.1, 1510.2 (New), [BF] 1510.2, [BF] 1510.3, [BF] 1510.4

Proponents: Wesley Hall, representing Reflectix, Inc. (wes.hall@reflectixinc.com)

THIS CODE CHANGE WILL BE HEARD BY THE IBC-FIRE SAFETY CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Building Code

Revise as follows:

SECTION 1510 RADIANT BARRIERS INSTALLED ABOVE ROOF DECK.

[BF] 1510.1 General. Where a radiant barrier is installed above a roof deck it shall comply with Sections 1510.2 through 1510.4.5.

1510.2 Material fire testing. The radiant barrier material shall have a flame spread index and a smoke-developed index determined in accordance with ASTM E84 or UL 723. Non-structural radiant barrier materials shall be mounted in accordance with ASTM Practice E2599.

[BF] ~~1510.2- 1510.3~~ Assembly fire testing. When installed, radiant barriers shall comply with the following:

1. Roof assemblies that include a radiant barrier shall comply with section 1505.1.
2. *Radiant barriers* shall be permitted for use above decks where the *radiant barrier* is covered with an *approved roof covering* and the system consisting of the *radiant barrier* and the *roof covering* complies with the requirements of either FM 4450 or UL 1256.

[BF] ~~1510.3- 1510.4~~ Installation. The low-emittance surface of the radiant barrier shall face the continuous airspace between the radiant barrier and the roof covering.

Radiant barriers installed above roof deck are permitted for use where the roof covering requires a batten and a counter batten. When installed, radiant barriers shall be installed between the batten and a counter batten or above the counter batten with a low-emittance surface of the radiant barrier facing the airspace between the radiant barrier and roof deck.

[BF] ~~1510.4- 1510.5~~ Material standards. A radiant Radiant barrier materials installed above a deck shall comply with ASTM C1313/1313M.

Reason Statement: The purpose of this proposal is to improve the language in Section 1510 relating to radiant barriers. The improvements include expansion of the Material and Assembly Fire Safety Testing requirements and additional information detailing installation of radiant barriers above the roof deck.

This proposal is a result of feedback received from many stakeholders related to the "Installation" subsection within the existing code language. This proposal addresses those issues brought forward with a more detailed description of the correct installation procedure for above roof deck applications. The primary issue for clarification is that a radiant barrier, no matter where it is installed, requires an air space in order to provide benefit. This proposed language clarifies the required structure to create and maintain this important air space.

The intent of this language is strictly to improve an existing section within the code. The inclusion of the Material Fire Testing and Assembly Fire Testing subsections strengthen the requirements for radiant barriers. The expanded installation language provides clear insight on the location of the radiant barrier within the assembly.

This proposal also addresses the feedback received on this section from numerous stakeholders and the ICC Committee from the previous cycle. One such group includes roofing contractors that asked for additional installation clarification.

The proposed language is needed to assure the inclusion of the appropriate fire testing measures and the required installation method for radiant barriers above the roof deck.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The code change proposal will neither increase or decrease construction costs as radiant barriers are not mandatory.

S5-21

S6-21

IBC: 1511.1.1

Proponents: David Renn, PE, SE, City and County of Denver, representing Code Change Committee of ICC Colorado Chapter (david.renn@denvergov.org)

THIS CODE CHANGE WILL BE HEARD BY THE IBC-GENERAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Building Code

Revise as follows:

[BG] 1511.1.1 Area limitation. The aggregate area of *penthouses* and other enclosed *rooftop structures* shall not exceed one-third the area of the supporting roof deck. Such *penthouses* and other enclosed *rooftop structures* shall not be required to be included in determining the ~~building area or number of stories~~ building height, number of stories or building area as regulated by Section 503.1. The area of such *penthouses* shall not be included in determining the *fire area* specified in Section 901.7.

Reason Statement: This proposal clarifies that penthouses and other enclosed rooftop structures are not required to be included in the building height. This section already states that these structures are not included in the number of stories and Section 1510.2.1 has penthouse height limits above the roof deck, which are independent of building height limitations in Section 503.1. Based on this, it is believed the intent of the code is that the height of these types of structures is only regulated in terms above height above the roof deck.

The commentary for the definition of "building height" indicates that since a penthouse is defined as a structure that is built above the roof of a building, it is above the point to which building height is measured. Therefore a penthouse would not affect the measurement of the building height and can be located above the maximum allowed roof height. However, per definition in Section 202, "building height" is measured to the average height of the highest roof surface so it must be clarified in the code that the roof surface of penthouses and other enclosed rooftop structures are not considered in the building height.

Also, it should be noted that the wording in this proposal is revised/re-ordered to "*building height, number of stories or building area*" simply to match the wording in Section 503.1.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This proposal is intended to be a clarification that will not change the cost of construction.

S6-21

S7-21

IBC: [BG] 1511.2.4

Proponents: David Renn, PE, SE, City and County of Denver, representing Code Change Committee of ICC Colorado Chapter (david.renn@denvergov.org)

THIS CODE CHANGE WILL BE HEARD BY THE IBC-GENERAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Building Code

Revise as follows:

[BG] 1511.2.4 Type of construction. Penthouses shall be constructed of ~~building elements~~ building element materials as required for the type of construction of the building ~~on which such penthouses are built~~. Penthouse exterior walls and roof construction shall have a fire-resistance rating as required for the type of construction of the building. Supporting construction of such exterior walls and roof construction shall have a fire-resistance rating not less than required for the exterior wall or roof supported.

Exceptions:

1. On buildings of Type I construction, the *exterior walls* and roofs of *penthouses* with a *fire separation distance* greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour *fire-resistance rating*. The *exterior walls* and roofs of *penthouses* with a *fire separation distance* of 20 feet (6096 mm) or greater shall not be required to have a *fire-resistance rating*.
2. On buildings of Type I construction two stories or less in height above *grade plane* or of Type II construction, the *exterior walls* and roofs of *penthouses* with a *fire separation distance* greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour *fire-resistance rating* or a lesser *fire-resistance rating* as required by Table 705.5 and be constructed of *fire-retardant-treated wood*. The *exterior walls* and roofs of *penthouses* with a *fire separation distance* of 20 feet (6096 mm) or greater shall be permitted to be constructed of *fire-retardant-treated wood* and shall not be required to have a *fire-resistance rating*. Interior framing and walls shall be permitted to be constructed of *fire-retardant-treated wood*.
3. On buildings of Type III, IV or V construction, the *exterior walls* of *penthouses* with a *fire separation distance* greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour *fire-resistance rating* or a lesser *fire-resistance rating* as required by Table 705.5. On buildings of Type III, IV or VA construction, the *exterior walls* of *penthouses* with a *fire separation distance* of 20 feet (6096 mm) or greater shall be permitted to be of heavy timber construction complying with Sections 602.4 and 2304.11 or noncombustible construction or *fire-retardant-treated wood* and shall not be required to have a *fire-resistance rating*.

Reason Statement: The 2021 IBC changed penthouse construction requirements to be as required for building elements based on type of construction instead of requiring walls, floors and roofs to be as required for the type of construction. This change results in overly conservative fire-resistance ratings when the exceptions to this section are used since the exceptions only reduce ratings for exterior walls and roofs. For example, Exception 1 could allow exterior walls and roofs to not have a fire-resistance rating; however, the exception doesn't apply to the secondary members supporting the roof, primary structural frame supporting the roof, or interior bearing walls supporting the roof. The result would be a non-rated roof supported by a primary structural frame with a 1 or 2-hour rating, secondary members with a 1 or 1 1/2-hour framing and interior bearing walls with a 1 or 2-hour rating.

Prior to the 2021 change, IBC Section 704.1 required the fire-resistance rating of supporting construction for penthouse exterior walls and roofs to be not less than the rating of the wall or roof supported. This level of protection is appropriate for a penthouse that is constructed above the roof of the building and is not considered to be part of the primary structural frame of the building. This proposal makes this clear by putting this requirement into the penthouse requirements rather than relying on Section 704.1.

This proposal also removes the requirement that penthouse floors be constructed as required for the type of construction. By definition, rooftop structures (including penthouses) are constructed over the roof deck of the building, so the the fire-resistance rating of the roof of the building should be allowed for the "floor" of the penthouse.

Cost Impact: The code change proposal will decrease the cost of construction

This proposal will reduce the required fire-resistance rating requirements for penthouses which will result in a decreased cost of construction.

S7-21

S8-21

IBC: [BG] 1511.5

Proponents: Bill McHugh, The McHugh Company, representing National Fireproofing Contractors Association (bill@mc-hugh.us)

THIS CODE CHANGE WILL BE HEARD BY THE IBC-GENERAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Building Code

Revise as follows:

[BG] 1511.5 Towers, spires, domes and cupolas. Towers, spires, domes and cupolas shall be of a type of construction having *fire-resistance ratings* not less than required for the building on top of which such tower, spire, dome or cupola is built. Towers, spires, domes and cupolas greater than 85 feet (25 908 mm) in height above *grade plane* as measured to the highest point on such structures, and either greater than 200 square feet (18.6 m²) in horizontal area or used for any purpose other than a belfry or an architectural embellishment, shall also be constructed of and supported on Type I or II construction.

Reason Statement: The purpose of this proposal is to clarify requirements in section 1511.5 of the IBC that has had questions at National Fireproofing Contractors Association events.. These are large rooftop structures. The code takes this very seriously and states that the fire-resistance rating is to be consistent with the building below. If it is fire-resistance rated, the rooftop structure will be as well. However, the last sentence seems to confuse the first sentence. Adding the word 'also' connects the two directions the code provides. Rather than just stating that non combustible construction is required, it is also required in addition to fire-resistance rated construction.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This section already requires what the code change is doing...and therefore does not increase the cost of construction.

S8-21

S9-21

IBC: [BG] 1511.5.1

Proponents: Bill McHugh, The McHugh Company, representing National Fireproofing Contractors Association (bill@mc-hugh.us)

THIS CODE CHANGE WILL BE HEARD BY THE IBC-GENERAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Building Code

Revise as follows:

[BG] 1511.5.1 Noncombustible construction required. Towers, spires, domes and cupolas greater than 60 feet (18 288 mm) in height above the highest point at which such structure contacts the roof as measured to the highest point on such structure, or that exceeds 200 square feet (18.6 m²) in area at any horizontal section, or which is intended to be used for any purpose other than a belfry or architectural embellishment, or is located on the top of a building greater than 50 feet (1524 mm) in *building height* shall be constructed of and supported by noncombustible materials and shall be separated from the building below by construction having a *fire-resistance rating* of not less than 1.5 hours. Penetrations shall be protected in accordance with section 714, Joints and Voids shall be protected in accordance with Section 715 and openings protected in accordance with Section 716 714. Such structures located on the top of a building greater than 50 feet (15 240 mm) in *building height* shall be supported by noncombustible construction having a fire-resistance rating not less than the construction supporting the rooftop structure.

Reason Statement: The reason for this proposal in 1511.5.1 is to correct an oversight in the 2021 IBC that openings are protected in accordance with section 716, Penetrations, section 14 and Joints and Voids, section 15. The proposal also clarifies that the supporting construction is equal to the fire-resistance rating of construction below. Additionally, because the roof assembly is fire-resistance rated. Once the roof assembly is required to be fire-resistance rated, the supporting construction needs fire-resistance according to the current code requirements.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The purpose of this code proposal is only clarification and therefore does not increase or decrease the cost of construction.

S9-21

S10-21

IBC: (New), 1511.9 (New), 1511.9.1 (New), 1511.9.2 (New), 1511.9.3 (New), 1511.9.4 (New), 1511.9.5 (New), 1511.9.6 (New)

Proponents: Mike Nugent, Chair, representing ICC Building Code Action Committee (bcac@iccsafe.org); Michael O'Brian, Chair, representing FCAC (fcac@iccsafe.org)

THIS CODE CHANGE WILL BE HEARD BY THE IBC-FIRE SAFETY CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Building Code

Add new definition as follows:

RAISED-DECK SYSTEM. (For application to Chapter 15 only). A system consisting of decking or pavers supported by pedestals installed over a roof assembly to provide a walking surface.

Add new text as follows:

1511.9 Raised-deck systems installed over a roof assembly. *Raised-deck systems* installed above a *roof assembly* shall comply with Sections 1511.9.1 through 1511.9.5.

1511.9.1 Installation. The installation of a *raised-deck system* shall comply with all of the following:

1. The perimeter of the *raised-deck system* shall be surrounded on all sides by parapet walls or by a noncombustible enclosure approved to prevent fire intrusion below the *raised-deck system*. The parapet wall or enclosure shall extend above the plane of the top surface of the *raised deck system*.
2. A *raised-deck system* shall be installed above a listed roof assembly.

Exception: Where the roof assembly is not required to have a fire classification in accordance with Section 1505.2.

3. A *raised-deck system* shall be installed in accordance with the manufacturer's installation instructions.
4. A *raised-deck system* shall not obstruct or block plumbing or mechanical vents, exhaust, or air inlets.

1511.9.2 Fire classification. The *raised-deck system* shall be tested, listed and labeled with a fire classification in accordance with Section 1505. The fire classification of the *raised deck system* shall be not less than the fire classification for the *roof covering* over which it is installed.

Exception: Where the top surface of the raised deck system consists of brick, masonry or concrete materials, a fire classification is not required.

1511.9.3 Pedestals or supports. The pedestals or supports for the *raised deck system* shall be installed in accordance with manufacturer's installation instructions.

1511.9.4 Structural requirements. The *raised-deck system* shall be designed for wind loads in accordance with Chapter 16 and Section 1504.5. The *raised-deck system* shall be designed for seismic loads in accordance with Chapter 16.

1511.9.5 Roof drainage. The *raised-deck system* shall not impede the operation of the roof drainage system as required by Section 1502 and the *International Plumbing Code*.

1511.9.6 Access and Egress. Access to the *raised-deck system* shall be in accordance with Chapter 11 and egress shall be in accordance with Chapter 10.

Reason Statement: Currently the IBC does not have any specific provisions for the design and installation of raised-deck systems. These provisions should be a subsection to Section 1511 because these systems are a roof structure over a roof assembly. A definition of "raised deck systems" is needed to ensure correct application of new requirements for these systems. This term is applicable only to Chapter 15 (same "Chapter 15 restriction" as the definition for roof assembly).

Fire test requirements for the raised deck systems are based on research studies performed for PV panels on low and steep-sloped roofs; which have general applicability to Raised Deck Systems. The following is a link to the reports for those studies:

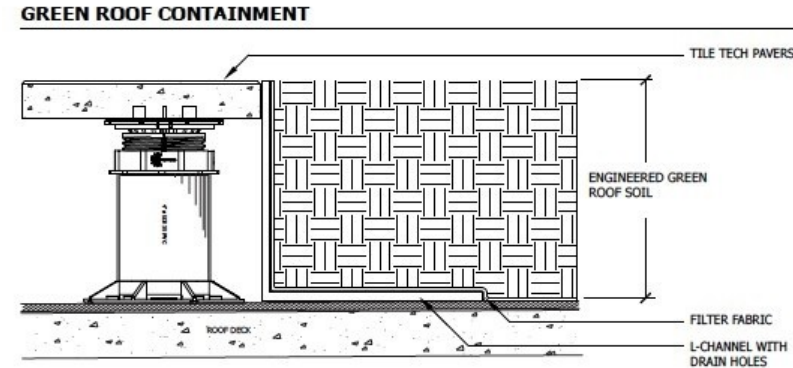
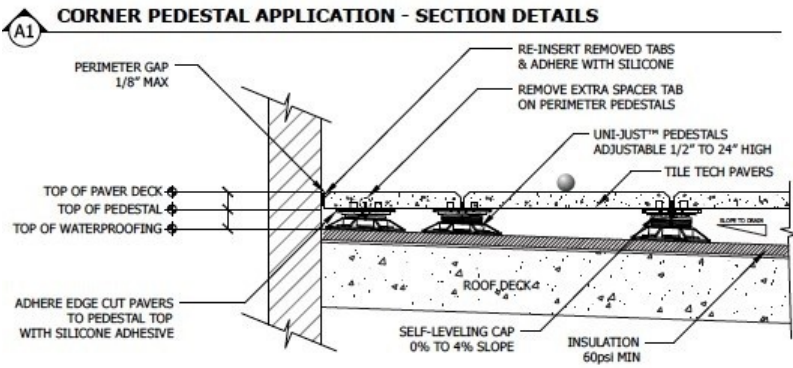
<http://www.solarabcs.org/about/publications/reports/flammability-testing/index.html>. These studies showed that when fire was able to enter the space between the roof assembly and the panel above, it could significantly alter the original test results for the fire classification of the roof assembly. By providing a protective barrier at the perimeter such as a parapet wall, roof curb or intersection with vegetative roof to prevent fire intrusion into the space, there would not be any concern with affects to the fire classification of the roof assembly underneath.

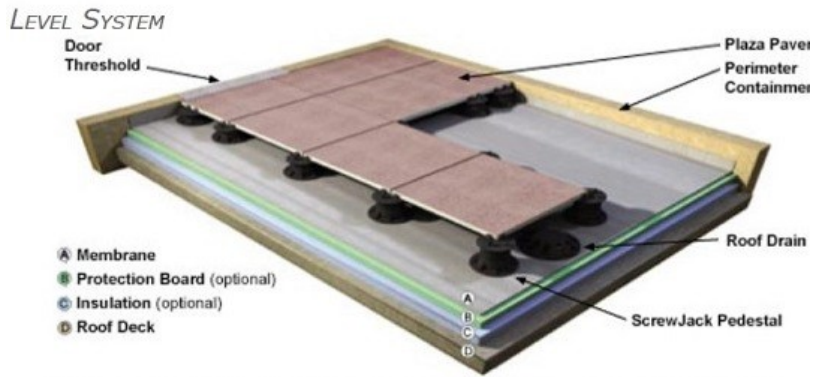
The manufacturer's installation instructions cover how the pedestals and supports are to be installed for these systems.

Three pointers (code references) for structural; roof water drainage; and access and egress are provided to ensure that these other safety and performance requirements essential for roofs are applied to Raised Deck Systems. The pictures included with this code change illustrate examples

of what a typical raised deck system consists of, including a photograph of an actual rooftop pool deck, two cross-sections of a typical raised deck system, and an isometric view of the typical components.

This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.





Cost Impact: The code change proposal will increase the cost of construction. The code change will increase the cost of construction, for those who decide to install these types of systems. However, this provides clarity on what requirements are to be applied for these installations.