

IWUIC



2018 GROUP A PROPOSED CHANGES TO THE I-CODES COLUMBUS COMMITTEE ACTION HEARINGS

April 15–23, 2018
Columbus Convention Center
Columbus, Ohio

First Printing

Publication Date: February 2018

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By

International Code Council, Inc.

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PRINTED IN THE U.S.A.

2018 GROUP A – PROPOSED CHANGES TO THE INTERNATIONAL FIRE CODE

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TENTATIVE ORDER OF DISCUSSION 2018 PROPOSED CHANGES TO THE INTERNATIONAL FIRE CODE

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 F code change proposals may not be included on this list, as they are being heard by another committee.

Numbers Not Used

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F257-18

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WUIC4-18	F24-18	F56-18	F87-18
WUIC5-18	F25-18	G91-18	F88-18
WUIC6-18	F26-18	F57-18	F89-18
WUIC7-18	F27-18	F58-18	F90-18
WUIC8-18	F28-18	F59-18	F91-18
WUIC9-18	F29-18	F60-18	G71-18 Part II
WUIC10-18	F30-18	F61-18	F21-18
WUIC11-18	F31-18	F62-18	F92-18 Part I
WUIC12-18	F32-18	F63-18	F93-18
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WUIC14-18	F34-18	F65-18	F95-18
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WUIC16-18	F36-18	F67-18	G67-18

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F135-18	F189-18	F236-18	F291-18
F136-18	F190-18	F237-18	F292-18
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F139-18	F192-18	F239-18	F294-18
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WUIC1-18

IWUC: 202 (New)

Proponent: Marcelo Hirschler, representing GBH International (gbhint@aol.com)

2018 International Wildland-Urban Interface Code

Add new definition as follows:

ROOF ASSEMBLY. A system designed to provide weather protection and resistance to design loads. The system consists of a roof covering and roof deck or a single component serving as both the roof covering and the roof deck. A roof assembly includes the roof deck, underlayment and roof covering, and can also include a thermal barrier, ignition barrier, insulation or a vapor retarder.

ROOF COVERING. The covering applied to the roof deck for weather resistance, fire classification or appearance.

ROOF COVERING SYSTEM. See "Roof assembly".

ROOF DECK. The flat or sloped surface not including its supporting members or vertical supports.

Reason:

This proposal adds four definitions into chapter 2 of the IWUC.

The terms "roof covering", "roof assembly" and "roof decking" and "roof deck" are used in the code but are not defined. It appears that the terms "roof decking" and "roof deck" are used interchangeably. The term "roof covering" is used in instances (for example when dealing with fire performance) where it actually means the roof assembly (or roof covering system). This proposal takes the definitions from the IRC and incorporates them into Chapter 2 of the IWUC. Separate proposals recommend terminology changes in the code for consistency.

For information, the IRC and IBC definitions follow:

IRC:

[RB] ROOF ASSEMBLY. A system designed to provide weather protection and resistance to design loads. The system consists of a roof covering and roof deck or a single component serving as both the roof covering and the roof deck. A roof assembly includes the roof deck, underlayment and roof covering, and can also include a thermal barrier, ignition barrier, insulation or a vapor retarder. For the definition applicable in Chapter 11, see Section N1101.6.

[RB] ROOF COATING. A fluid-applied, adhered coating used for roof maintenance or roof repair, or as a component of a roof covering system or roof assembly.

[RB] ROOF COVERING. The covering applied to the roof deck for weather resistance, fire classification or appearance.

[RB] ROOF COVERING SYSTEM. See "Roof assembly."

[RB] ROOF DECK. The flat or sloped surface not including its supporting members or vertical supports.

IBC:

[BS] ROOF ASSEMBLY (For application to Chapter 15 only). A system designed to provide weather protection and resistance to design loads. The system consists of a roof covering and roof deck or a single component serving as both the roof covering and the roof deck. A roof assembly can include an underlayment, a thermal barrier, insulation or a vapor retarder.

[BS] ROOF COATING. A fluid-applied, adhered coating used for roof maintenance or roof repair, or as a component of a roof covering system or roof assembly.

[BS] ROOF COVERING. The covering applied to the roof deck for weather resistance, fire classification or appearance.

ROOF COVERING SYSTEM. See "Roof assembly".

[BS] ROOF DECK. The flat or sloped surface constructed on top of the exterior walls of a building or other supports for the purpose of enclosing the story below, or sheltering an area, to protect it from the elements, not including its supporting members or vertical supports.

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

This code change just adds definitions for clarity.

Internal ID: 774

WUIC2-18

IWUIC: 504.2, 505.2, 506.2

Proponent: Marcelo Hirschler, GBH International, representing GBH International (gbhint@aol.com)

2018 International Wildland-Urban Interface Code

Revise as follows:

504.2 Roof ~~covering-assembly~~. Roofs shall have a roof assembly that complies with a Class A rating when tested in accordance with ASTM ~~E-108-E108~~ or UL 790. For roof ~~coverings-assemblies~~ where the profile allows a space between the roof covering and roof ~~decking-deck~~, the space at the eave ends shall be firestopped to preclude entry of flames or embers, or have one layer of 72-pound (32.4 kg) mineral-surfaced, nonperforated cap sheet complying with ASTM ~~D-3909-D3909~~ installed over the combustible ~~decking-roof deck~~.

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 oz/sq. ft. (0.0416 kg/m²) copper sheets installed over combustible roof decks.

505.2 Roof ~~covering-assembly~~. Roofs shall have a roof assembly that complies with not less than a Class B rating when tested in accordance with ASTM E108 or UL 790, or an *approved noncombustible roof covering*. For roof ~~coverings-assemblies~~ where the profile allows a space between the roof covering and roof ~~decking-deck~~, the space at the eave ends shall be firestopped to preclude entry of flames or embers, or have one layer of 72- pound (32.4 kg) mineral-surfaced, nonperforated cap sheet complying with ASTM D3909 installed over the combustible ~~decking-roof deck~~.

506.2 Roof ~~covering-assembly~~. Roofs shall have a roof assembly that complies with not less than a Class C rating when tested in accordance with ASTM E108 or UL 790 or an *approved noncombustible roof covering*. For roof ~~coverings-assemblies~~ where the profile allows a space between the roof covering and roof ~~decking-deck~~, the space at the eave ends shall be firestopped to preclude entry of flames or embers, or have one layer of 72- pound (32.4 kg) mineral-surfaced, nonperforated cap sheet complying with ASTM D3909 installed over the combustible ~~decking-roof deck~~.

Reason:

The terms “roof covering”, “roof assembly” and “roof decking” and “roof deck” are used in the code but are not defined. It appears that the terms “roof decking” and “roof deck” are used interchangeably. The term “roof covering” is used in instances (for example when dealing with fire performance) where it actually means the roof assembly (or roof covering system). A separate proposal takes the definitions from the IRC and incorporates them into Chapter 2 of the IWUIC. This proposal recommend terminology changes in the code for consistency.

This proposal simply cleans up terminology in the roofing section (504.2, 505.2 and 506.2) and does it consistently with the definitions of the terms in the IRC. It is associated with a parallel proposal that adds the IRC definitions into the IWUIC.

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

This proposal simply clarifies terms as defined in the IRC (and as proposed for definition in the IWUIC).

Internal ID: 778

WUIC3-18

IWUIC: 503.2

Proponent: Marcelo Hirschler, GBH International, representing GBH International (gbhint@aol.com)

2018 International Wildland-Urban Interface Code

Revise as follows:

503.2 Ignition-resistant building material. Ignition-resistant building materials shall comply with any one of the following:

1. Material shall be tested on ~~all sides the front and back faces either with the extended~~ ASTM E84 (UL 723) test ~~or ASTM E 2768, except panel products shall be permitted to test only the front and back faces. Panel products shall be tested with a ripped or cut longitudinal gap of 1/8 inch (3.2 mm). Materials that, when tested in accordance with the test procedures set forth in ASTM E84 or UL 723~~ extended for a test period of 30 minutes, or with ASTM E ~~2768~~E2768, and shall comply with the following:
 - 1.1. Flame spread. Material shall exhibit a flame spread index not exceeding ~~25 and shall not show evidence of progressive combustion following the extended 30-minute test.~~25.
 - 1.2. Flame front. Material shall exhibit a flame front that does not progress more than 10^{1/2} feet (3200 mm) beyond the centerline of the burner at any time during the extended 30-minute test. This shall be considered evidence of no significant progressive combustion.
 - 1.3. Weathering. Ignition-resistant building materials shall maintain their performance in accordance with this section under conditions of use. Materials shall meet the performance requirements for weathering (including exposure to temperature, moisture and ultraviolet radiation) contained in the following standards, as applicable to the materials and the conditions of use:
 - 1.3.1. Method A "Test Method for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing" in ASTM D 2898, for fire-retardant-treated wood, wood-plastic composite and plastic lumber materials.
 - 1.3.2. ASTM D 7032 for wood-plastic composite materials.
 - 1.3.3. ASTM D 6662 for plastic lumber materials.
 - 1.4. Identification. Materials shall bear identification showing the fire test results.
Exception: ~~Materials composed of a combustible core and a noncombustible exterior covering made from either aluminum at a minimum 0.019 inch (0.48 mm) thickness or corrosion-resistant steel at a minimum 0.0149 inch (0.38 mm) thickness shall not be required to be tested with a ripped or cut longitudinal gap.~~
2. Noncombustible material. Material that complies with the requirements for *noncombustible* materials in Section 202.
3. Fire-retardant-treated wood. Fire-retardant-treated wood identified for exterior use and meeting the requirements of Section 2303.2 of the International Building Code.
4. Fire-retardant-treated wood roof coverings. Roof assemblies containing fire-retardant-treated wood shingles and shakes that comply with the requirements of Section 1505.6 of the International Building Code and classified as Class A roof assemblies as required in Section 1505.2 of the International Building Code.

Reason:

This proposal makes 4 changes, discussed below:

First:

It makes no sense to test "all sides" of a product when it becomes physically impossible to distinguish between the ends and no ASTM E84 specimen (which is 24 feet long by 2 feet wide) can be obtained from the ends. When a specimen is presented for testing, if all sides look the same, a lab can't tell which is a second side. Testing front and back is feasible but other sides are not (because the maximum ASTM E84 thickness is 4 inches). In order to test a "2 by 4" specimen a simple calculation is that you would have to cut it into 864 pieces that are 2 x 4, and 4 inches thick, and somehow fasten them together: that is obviously ridiculous. It makes perfect sense to test the front and the back

sides to ensure that the same fire performance is present on each side and that requirement is proposed to be retained.

Second:

The requirement to test with a rip or gap is not contained in either ASTM E84 or ASTM E2768 and is simply supposed to differentiate between fire retardant treated wood materials and coated materials. However, there is evidence that impregnation with fire retardant (as for fire retardant treated wood or FRTW) is not a guarantee that the additive penetrates uniformly throughout the wood and yet FRTW is not required to be tested on more than one side or with a gap or rip. That makes no sense. In fact, also, some coated products will be able to meet the requirements with the gap or rip so nothing is gained by adding that requirement. If there is concern about the implications of using coated wood products exceptions can (and should) be placed where the use of coated products is inappropriate, especially as decking materials.

Third:

ASTM E2768 was developed by ASTM E05 (committee on fire standards) specifically for the purpose of giving instructions on how to conduct ASTM E84 when extended to 30 minutes. In fact ASTM E84 states that materials required to be tested to meet the extended ASTM E84 to a 30-minute duration are covered by ASTM E2768. No other standard or code requirement explains how to test for "significant progressive combustion".

ASTM E2768 contains a section that explains how to assess the pass/fail criteria and it states as follows under "conditions of classification":

13.1 The test method has the following conditions of classification for a material or product to be classified as meeting the requirements of this standard:

13.1.1 The flame spread index shall be 25 or less as determined for the initial 10 min test period,

13.1.2 The flame front shall not progress more than 10.5 ft (3.2 m) beyond the centerline of the burners at any time during the 30 min test period. This is considered evidence of no significant progressive combustion in this test method.

13.2 For materials or products that are not homogeneous or symmetrical about their longitudinal axis, only surfaces that have been individually tested shall be eligible to be classified and reported as meeting the conditions of classification of this standard.

Consequently, the changes proposed to items 1.1 and 1.2 are consistent with the statements in ASTM E84 and ASTM E2768.

Fourth:

The exception is proposed to be eliminated because it is unnecessary if the requirement to test with a rip or gap is deleted.

A report on ASTM E2768 tests conducted by a fire test lab (QAI) is attached and it shows that when the flame front does not progress more than 10.5 ft beyond the centerline of the burners this is considered evidence of no significant progressive combustion. Also, no rip or gap used, because that is not what is required by ASTM E2768. Two pages of a similar report (title page and page 7) from another fire test lab (Intertek) also shows that the same criterion is used for both issues.

Cost Impact

The code change proposal will decrease the cost of construction .

This will eliminate unnecessary testing that represents a barrier without adding fire safety.

Internal ID: 851

WUIC4-18

IWUIC: 503.2

Proponent: Thomas Meyers, Building Intuition, LLC, representing Self (codeconsultant@gmail.com)

2018 International Wildland-Urban Interface Code

Revise as follows:

503.2 Ignition-resistant building material. Ignition-resistant building materials shall comply with any one of the following:

1. Material shall be tested on all sides with the extended ASTM E84 (UL 723) test or ASTM E 2768, except panel products shall be permitted to test only the front and back faces. Panel products shall be tested with a ripped or cut longitudinal gap of $\frac{1}{8}$ inch (3.2 mm). Materials that, when tested in accordance with the test procedures set forth in ASTM E84 or UL 723 for a test period of 30 minutes, or with ASTM E 2768, comply with the following:
 - 1.1. Flame spread. Material shall exhibit a flame spread index not exceeding 25 and shall not show evidence of progressive combustion following the extended 30-minute test.
 - 1.2. Flame front. Material shall exhibit a flame front that does not progress more than $10\frac{1}{2}$ feet (3200 mm) beyond the centerline of the burner at any time during the extended 30-minute test.
 - 1.3. Weathering. Ignition-resistant building materials shall maintain their performance in accordance with this section under conditions of use. Materials shall meet the performance requirements for weathering (including exposure to temperature, moisture and ultraviolet radiation) contained in the following standards, as applicable to the materials and the conditions of use:
 - 1.3.1. Method A "~~Test-~~Test Method for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire ~~Testing-~~Testing" in ASTM D 2898, for fire-retardant-treated wood, wood-plastic composite and plastic lumber materials.
 - 1.3.2. ASTM D 7032 for wood-plastic composite materials.
 - 1.3.3. ASTM D 6662 for plastic lumber materials.
 - 1.4. Identification. Materials shall bear identification showing the fire test results.

~~**Exception:** Materials composed of a combustible core and a noncombustible exterior covering made from either aluminum at a minimum 0.019 inch (0.48 mm) thickness or corrosion resistant steel at a minimum 0.0149 inch (0.38 mm) thickness shall not be required to be tested with a ripped or cut longitudinal gap.~~

2. Noncombustible material. Material that complies with the requirements for *noncombustible* materials in Section 202.
3. Fire-retardant-treated wood. Fire-retardant-treated wood identified for exterior use and meeting the requirements of Section 2303.2 of the International Building Code.
4. Fire-retardant-treated wood roof coverings. Roof assemblies containing fire-retardant-treated wood shingles and shakes that comply with the requirements of Section 1505.6 of the International Building Code and classified as Class A roof assemblies as required in Section 1505.2 of the International Building Code.

Reason:

Recent cladding fires involving metal composite materials (MCM's), such as the Grenfell Tower in London, raises questions about the validity of allowing materials to be evaluated contrary to actual end use conditions. MCM's are frequently installed with exposed cores at joints, intersections, and corners. The effect of the exposed core on potential ignition and fire spread should be part of the testing evaluation as it realistically represents actual construction practices.

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

No cost change anticipated for existing, compliant products. Additional costs applied to certain products requiring retesting may occur at manufacturer discretion.

Internal ID: 2068

WUIC5-18

IWUIC: 503.2

Proponent: Tim Earl, GBH International, representing self (tearl@gbhinternational.com)

2018 International Wildland-Urban Interface Code

Revise as follows:

503.2 Ignition-resistant building material. Ignition-resistant building materials shall comply with any one of the following:

1. Material shall be tested on ~~all sides~~ the front and back faces either with the extended ASTM E84 (UL 723) test, extended for a test period of 30 minutes, or ASTM E 2768, except panel products shall be permitted to test only the front and back faces with ASTM E2768. Panel products shall be tested with a ripped or cut longitudinal gap of $\frac{1}{8}$ inch (3.2 mm). ~~Materials that, when tested in accordance with the test procedures set forth in ASTM E84 or UL 723 for a test period of 30 minutes, or with ASTM E 2768, shall comply with the following:~~
 - 1.1. Flame spread. Material shall exhibit a flame spread index not exceeding ~~25 and shall not show evidence of progressive combustion following the extended 30-minute test.~~ 25.
 - 1.2. Flame front. Material shall exhibit a flame front that does not progress more than $10\frac{1}{2}$ feet (3200 mm) beyond the centerline of the burner at any time during the extended 30-minute test. This shall be considered evidence of no significant progressive combustion.
 - 1.3. Weathering. Ignition-resistant building materials shall maintain their performance in accordance with this section under conditions of use. Materials shall meet the performance requirements for weathering (including exposure to temperature, moisture and ultraviolet radiation) contained in the following standards, as applicable to the materials and the conditions of use:
 - 1.3.1. Method A "Test Method for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing" in ASTM D 2898, for fire-retardant-treated wood, wood-plastic composite and plastic lumber materials.
 - 1.3.2. ASTM D 7032 for wood-plastic composite materials.
 - 1.3.3. ASTM D 6662 for plastic lumber materials.
 - 1.4. Identification. Materials shall bear identification showing the fire test results.

Exception: Materials composed of a combustible core and a noncombustible exterior covering made from either aluminum at a minimum 0.019 inch (0.48 mm) thickness or corrosion-resistant steel at a minimum 0.0149 inch (0.38 mm) thickness shall not be required to be tested with a ripped or cut longitudinal gap.
2. Noncombustible material. Material that complies with the requirements for *noncombustible* materials in Section 202.
3. Fire-retardant-treated wood. Fire-retardant-treated wood identified for exterior use and meeting the requirements of Section 2303.2 of the International Building Code.
4. Fire-retardant-treated wood roof coverings. Roof assemblies containing fire-retardant-treated wood shingles and shakes that comply with the requirements of Section 1505.6 of the International Building Code and classified as Class A roof assemblies as required in Section 1505.2 of the International Building Code.

Reason:

It makes no sense to test "all sides" of a product when it becomes physically impossible to distinguish between the ends and no ASTM E84 specimen (which is 24 feet long by 2 feet wide) can be obtained from the ends. When a specimen is presented for testing, if all sides look the same, a lab can't tell which is a second side. Testing front and back is feasible but other sides are not (because the maximum ASTM E84 thickness is 4 inches). In order to test a "2 by 4" specimen a simple calculation is that you would have to cut it into 864 pieces that are 2 x 4, and 4 inches thick, and somehow fasten them together: that is obviously ridiculous. It makes perfect sense to test the front and the back sides to ensure that the same fire performance is present on each side and that requirement is proposed to be retained.

ASTM E2768 was developed by ASTM E05 (committee on fire standards) specifically for the purpose of giving instructions on how to conduct ASTM E84 when extended to 30 minutes. In fact ASTM E84 states that materials required to be tested to meet the extended ASTM E84 to a 30-minute duration are covered by ASTM E2768. ASTM E2768 contains a section that explains how to assess the pass/fail criteria and it states as follows under "conditions of classification":

13.1 The test method has the following conditions of classification for a material or product to be classified as meeting the requirements of this standard:

13.1.1 The flame spread index shall be 25 or less as determined for the initial 10min test period,

13.1.2 The flame front shall not progress more than 10.5 ft (3.2 m) beyond the centerline of the burners at any time during the 30 min test period. This is considered evidence of no significant progressive combustion in this test method.

13.2 For materials or products that are not homogeneous or symmetrical about their longitudinal axis, only surfaces that have been individually tested shall be eligible to be classified and reported as meeting the conditions of classification of this standard.

Consequently, the changes proposed to items 1.1 and 1.2 are consistent with the statements in ASTM E84 and ASTM E2768.

No other standard contains information on how to assess "no significant progressive combustion".

Cost Impact

The code change proposal will decrease the cost of construction .

This will reduce the amount of testing required by eliminating unnecessary tests on all sides of homogeneous wood specimens.

Internal ID: 1046

WUIC6-18

IWUIC: 504.5, 504.5.1 (New), 07

Proponent: David Tyree, American Wood Council, representing American Wood Council (dtyree@awc.org)

2018 International Wildland-Urban Interface Code

Delete and substitute as follows:

~~**504.5 Exterior walls.** Exterior walls of buildings or structures shall be constructed with one of the following methods:~~

- ~~1. Materials *approved* for not less than 1-hour fire-resistance-rated construction on the exterior side.~~
- ~~2. *Approved noncombustible* materials.~~
- ~~3. Heavy timber or log wall construction.~~
- ~~4. Fire-retardant treated wood on the exterior side. The fire-retardant treated wood shall be labeled for exterior use and meet the requirements of Section 2303.2 of the International Building Code.~~
- ~~5. Ignition-resistant materials complying with Section 503.2 on the exterior side.~~

~~Such material shall extend from the top of the foundation to the underside of the roof sheathing.~~

~~**504.5 Exterior walls.** Exterior walls of buildings or structures shall be tested in accordance with ASTM E2707 with the conditions of acceptance in Section 504.5.1.~~

~~**Exception:** Any of the following shall be deemed to meet the assembly performance requirement of this section.~~

- ~~1. One layer of 5/8" gypsum sheathing applied behind the exterior wall covering or cladding on the exterior side of the framing;~~
- ~~2. Materials approved for not less than 1-hour fire-resistance-rated construction on the exterior side of the wall assembly when tested in accordance with ASTM E119.~~

~~Exterior wall coverings shall have a class B flame spread index and shall extend from the top of the foundation to the underside of the roof sheathing.~~

Add new text as follows:

~~**504.5.1 Conditions of Acceptance when tested in accordance with ASTM E2707.** The test shall be conducted in accordance with ASTM E2707 and the conditions of acceptance in items 1 and 2 below shall be met.~~

- ~~1. Absence of flame penetration through the wall assembly at any time.~~
- ~~2. Absence of glowing combustion on the unexposed side of the assembly at any time during the 70-min test.~~

Add new standard(s) follows:

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box
C700
West Conshohocken PA 19428-
2959

E2707-15:

~~**Standard Test Method for Determining Fire Penetration of Exterior Wall Assemblies Using a Direct Flame Impingement Exposure**~~

Reason:

This proposal includes a wall assembly fire performance requirement by adding ASTM consensus standard, ASTM E2707, "Standard Test Method for Determining Fire Penetration of Exterior Wall Assemblies Using a Direct Flame Impingement Exposure" as the ASTM test method for the acceptable fire performance of exterior wall assemblies in WUI areas. Exterior sides of wall assemblies that meet 1-hour fire resistance rating in accordance with ASTM E119 is proposed to be left as currently referenced. All other requirements that are not based on an exterior wall fire performance test are proposed to be deleted. WUI exterior wall fire performance is dependent on the cladding on the wall as well as its method of installation. Requiring the exterior wall systems to be tested in accordance with

ASTM E2707 or ASTM E119 would add the method of installation, including joints, to compliance criteria.

ASTM E2707 test method measures the ability of the wall system to resist fire penetration from the exterior into the wall cavity or unexposed side of the test assembly under the conditions of exposure. This test method was developed in response to recommendations developed by the California Office of the State Fire Marshal (SFM) and the International Wildland-Urban Interface Code (IWUIC) regarding the enhancement of exterior fire protection of structures in a wildland fire (exterior wildfire exposure). This proposal establishes performance criteria for materials to be used on the exterior buildings, structures, and detached accessory structures. While this test method is intended to address one component of an exterior wildfire exposure, that is, exterior walls exposed to direct flame impingement the proposal goes on to regulate the flame spread of the materials applied to the exterior wall. The purpose of this standard is to provide a definitive set of procedures for the evaluation and measurement of the resistance to fire penetration of exterior wall structures. The test is a practical attempt to simulate the case where ignition of flammable materials (plants, trash, a deck or shed, etc.) might be adjacent to a building.

Exterior sides of wall assemblies that meet 1-hour fire resistance rating in accordance with ASTM E119 is proposed to be left as currently referenced. A second option of providing a layer of 5/8" gypsum sheathing is consistent with this requirement but gives a prescriptive solution to requiring the test. All other requirements that are not based on an exterior wall fire test ASSEMBLIES are proposed to be deleted. WUI exterior wall fire performance is dependent on the cladding material as well as its method of installation. Requiring that exterior wall systems be tested in accordance with ASTM E2707 or ASTM E119 would add the method of installation to compliance criteria.

A 10-min 150-kW exposure was used for the siding-sheathing combinations, followed by an additional 60- min observation to detect any smoldering combustion. The use of infrared photography of the back of the test wall was used to reveal development of increasing temperatures or persisting hot spots. Other tests were run on solely cladding or sheathing, where the burner was left on until failure to determine the weak points in various materials. Most of the siding-sheathing assemblies exhibited acceptable performance. However, the hardboard siding failed because it burned and warped away from the sheathing, exposing it to flames. For the siding-only tests flame penetration occurred at joints for "combustible" siding. The nature of the siding joints had a substantial effect on relative performance. Most vulnerable was the plain bevel, while rabbeted and shiplap joints were increasingly resistant to flame-through. Tests on different types of siding materials including but not limited to; combustible, heavy timber, fire retardant treated wood and ignition resistant materials should also require testing in accordance with this standard since they were grandfathered in with the exceptions and have never been tested in our knowledge. It is thought that the type of joints using these construction materials will also have a questionable response depending of construction procedure and should also be tested to gain acceptance.

Additionally, it is recognized that the flame spread of the wall material is also very important to the wall performance in Wildland Urban Interface events. With this proposal BOTH the fire penetration through the exterior wall covering assembly into the wall cavity, and surface flame spread of wall covering material are taken into consideration. The current requirement pertains to exterior wall covering material without consideration of the exterior wall assembly performance. Qualifying just the wall covering material may not necessarily assure the safety from a wildland fire exposure. It has been shown that joints are a real weakness in the WUI envelope protection and this proposal addresses that concern. The exception to have an exterior wall assembly tested in accordance with ASTM E2707 is to allow assemblies approved for not less than 1-hour fire-resistance construction applied to the exterior side of the wall assembly or provide a layer of gypsum board as a part of the exterior wall covering assembly.

It is also reasonable to assume that accelerated aging/weathering tests will be required by an AHJ or listing agency as it is important to evaluate the permanence of the fire retardant properties of the product. The aging process will be defined by the intended end-use application and the materials content of the product being tested. Since the proposed test method is applicable to a wide range of products or assemblies, it is not reasonable to assume that all materials should be subjected to the same accelerated aging/weathering process. Test Method ASTM D2898 has long been used as an accelerated weathering process with fire retardant treated lumber products where leaching of chemicals may be an issue. For a product comprised of 100 % plastic, where leaching may not be an issue, some other test method may be appropriate. There are several different accelerated aging/ weathering procedures available. The effectiveness of these procedures vary with changes in the composition of the materials being aged. The language within the standard is worded so that accelerated aging/weathering is not required in all cases, but is required where such results are a condition of acceptance for a product to be used in a code regulated application. As such, the language provides the flexibility needed for the range of materials being used for exterior wall applications.

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

This proposal adds an ASTM standard which allows wall assemblies to be tested and approved for WUI exterior wall construction.

Analysis: A review of the standard proposed for inclusion in the code, ASTM E2707-15 Standard Test Method for

Determining Fire Penetration of Exterior Wall Assemblies Using a Direct Flame Impingement Exposure, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

Internal ID: 1054

WUIC7-18

IWUIC: 504.7

Proponent: Marcelo Hirschler, GBH International, representing GBH International (gbhint@aol.com)

2018 International Wildland-Urban Interface Code

Revise as follows:

504.7 Appendages and projections. *Unenclosed accessory structures* attached to buildings with habitable spaces and projections, such as decks, shall be not less than 1-hour fire- resistance-rated construction, heavy timber construction or constructed of one of the following:

1. *Approved noncombustible* materials.
2. Fire-retardant-treated wood identified for exterior use and meeting the requirements of Section 2303.2 of the International Building Code.
3. Ignition-resistant building materials in accordance with Section 503.2.

Exception: Coated materials shall not be used as the walking surface of decks.

Reason:

It is possible to create ignition-resistant materials that are the result of coating the front and back of certain panels (such as wood panels) and that meet the requirements. Such materials are typically fully suitable for use in most applications where ignition resistant materials are called for except for walking surfaces because of the probability of erosion after a certain period of use.

Therefore, if the coating is being eroded, the fire safety will decrease.

Cost Impact

The code change proposal will increase the cost of construction .

It is unlikely that coated materials are being used for decking but if they are used, this proposal will eliminate an option.

Internal ID: 853

WUIC8-18

IWUC: 504.7, 504.7.1 (New), 504.7.1.1 (New), 07

Proponent: David Tyree, American Wood Council, representing American Wood Council (dtyree@awc.org)

2018 International Wildland-Urban Interface Code

Revise as follows:

504.7 Appendages and projections. *Unenclosed accessory structures* attached to buildings with habitable spaces and projections, such as decks, shall have walking surfaces complying with Section 504.7.1 or shall be not less than 1-hour fire- resistance-rated construction, heavy timber construction or constructed of one of the following:

1. *Approved noncombustible* materials.
2. Fire-retardant-treated wood identified for exterior use and meeting the requirements of Section 2303.2 of the International Building Code.
3. Ignition-resistant building materials in accordance with Section 503.2.

Add new text as follows:

504.7.1 Deck Materials. The walking surface material of decks, porches, balconies and stairs shall comply with Section 504.7 or shall be tested in accordance with ASTM E2632 and shall meet the conditions of acceptance in Section 504.7.1.1. If abutting an exterior wall that otherwise complies with this chapter, the portion of the exterior wall covering material abutting the walking surface shall have a Class A flame spread index when tested in accordance with ASTM E84 or UL 723 and shall extend to a minimum height of 24 inches above the walking surface and a minimum of 12 inches below the walking surface.

504.7.1.1 Conditions of acceptance when tested in accordance with ASTM E2632. The test shall be conducted in triplicate and the peak heat release rate of each test shall be less than or equal to 25 kW per square foot of deck area (269 kW per square meter of deck area).

Add new standard(s) follows:

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box
C700
West Conshohocken PA 19428-
2959

E2632/E2632M-13e1:

Standard Test Method for Evaluating the Under-Deck Fire Test Response of Deck Materials

Reason:

This proposal includes a fire performance requirement by adding a ANSI Consensus Standard specifically developed to qualify exterior decks for Wildland-Urban Interface fire performance. ASTM E2632, "Standard Test Method for Evaluating the Under-Deck Fire Test Response of Deck Materials". This test method was developed in response to recommendations developed by the California Office of the State Fire Marshal (OSFM) regarding the performance of decking materials in a wildland fire (exterior wildfire exposure). The ASTM E2632 test method addresses the case where a brand is blown or a surface fire extends under a deck and onto combustible material causing flaming combustion that may lead to penetration through the siding or some other vulnerable point of the main structure. The test is a practical attempt to simulate the case where combustible material resides beneath a structure and can become involved in a wildland fire event.

The major concern about the ignition of decking is the hazard that it presents to the habitable structure. Decking is usually configured so that it is capable of being threatened by two potential sources of ignition: brands on the surface of the decking and flaming material underneath the structure. It has been shown that in a typical Wildland-Urban Interface fire, burning brands can land on a deck causing combustion leading to flaming combustion. The flames impinge on the wall of the structure causing penetration at a vulnerable point into the structure. This proposal not only requires the decking material to be limited to a peak heat release rate of 25kw per square foot but adds additional requirements to provide non-combustible and ignition resistant construction to a height of 24 inches above the deck and 12 inches below the deck to protect the structure from any flaming caused by a burning brand landing on an

exterior deck surface. The additional requirement requiring a Class A covering material to a height of 24 inches above the walking surface and 12 inches below, have been added to specifically address recent testing conducted to examine potential vulnerabilities of wood decks to continuous, wind-driven firebrand showers. ASTM E2632 test method provides for several conditions that must be met to pass the performance criteria including: a limited heat release rate (HHR); absence of sustained flaming or glowing combustion; and absence of structural failure of the deck board. Smaller values of heat release rate reflect lower combustibility than larger values. This proposal uses the same acceptance criteria as the State of California SFM office which specifies a maximum net peak heat release of (no more than) 25 kW/ft² [269 kW/m²] for deck boards. For comparison, the HHR for a large juniper bush can be as high as 1000 kW.

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

This proposal allows different materials to be testing to comply with the WUI decking standards and will not increase the cost of construction over current required methods of construction.

Analysis: A review of the standard proposed for inclusion in the code, ASTM E2632 Standard Test Method for Evaluating the Under-Deck Fire Response of Deck Materials, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

Internal ID: 1064

WUIC9-18

IWUIC: 504.7, 504.7.1 (New), 507.1.1 (New), 07

Proponent: Kuma Sumathipala, American Wood Council, representing American Wood Council
(ksumathipala@awc.org)

2018 International Wildland-Urban Interface Code

Revise as follows:

504.7 Appendages and projections. *Unenclosed accessory structures* attached to buildings with habitable spaces, projections and projections, such as decks, other than walking surfaces of decks, shall be not less than 1-hour fire-resistance-rated construction, heavy timber construction or constructed of one of the following:

1. *Approved noncombustible materials.*
2. Fire-retardant-treated wood identified for exterior use and meeting the requirements of Section 2303.2 of the International Building Code.
3. Ignition-resistant building materials in accordance with Section 503.2.

Add new text as follows:

504.7.1 Walking surfaces of decks. The walking surface material of decks, porches, balconies and stairs shall be constructed of one of the following:

1. Approved noncombustible materials.
2. Fire-retardant-treated wood identified for exterior use and meeting the requirements of Section 2303.2 of the International Building Code.
3. Ignition-resistant building materials in accordance with Section 503.2.
4. Materials tested in accordance with ASTM E2632 and meeting the conditions of acceptance in Section 504.7.1.1. If abutting an exterior wall that otherwise complies with this chapter, the portion of the exterior wall covering material abutting the walking surface shall have a Class A flame spread index when tested in accordance with ASTM E84 or UL 723 and shall extend to a minimum height of 24 inches above the walking surface and a minimum of 12 inches below the walking surface.

507.1.1 Conditions of Acceptance. ASTM E2632 shall be conducted in triplicate and the peak heat release rate of each test shall be less than or equal to 25 kW per square foot of deck area (269 kW per square meter of deck area).

Add new standard(s) follows:

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box
C700
West Conshohocken PA 19428-
2959

E2632/E2632M-13e1:

Standard Test Method for Evaluating the Under-Deck Fire Test Response of Deck Materials

Reason:

This proposal includes a fire performance requirement by adding a ANSI Consensus Standard specifically developed to qualify exterior decks for Wildland-UrbanInterface fire performance. ASTM E2632, "Standard Test Method for Evaluating the Under-Deck Fire Test Response of Deck Materials". This test method was developed in response to recommendations developed by the California Office of the State Fire Marshal (OSFM) regarding the performance of decking materials in a wildland fire (exterior wildfire exposure). The ASTM E2632 test method addresses the case where a brand is blown or a surface fire extends under a deck and onto combustible material causing flaming combustion that may lead to penetration through the siding or some other vulnerable point of the main structure. The test is a practical attempt to simulate the case where combustible material resides beneath a structure and can become involved in a wildland fire event. The major concern about the ignition of decking is the hazard that it presents

to the habitable structure. Decking is usually configured so that it is capable of being threatened by two potential sources of ignition: brands on the surface of the decking and flaming material underneath the structure. It has been shown that in a typical Wildland-Urban Interface fire, burning brands can land on a deck causing combustion leading to flaming combustion. The flames impinge on the wall of the structure causing penetration at a vulnerable point into the structure. This proposal not only requires the decking material to be limited to a peak heat release rate of 25kw per square foot but adds additional requirements to provide noncombustible and ignition resistant construction to a height of 24 inches above the deck and 12 inches below the deck to protect the structure from any flaming caused by a burning brand landing on an exterior deck surface. The additional requirement requiring a Class A covering material to a height of 24 inches above the walking surface and 12 inches below, have been added to specifically address recent testing conducted to examine potential vulnerabilities of wood decks to continuous, wind-driven firebrand showers. ASTM E2632 test method provides for several conditions that must be met to pass the performance criteria including: a limited heat release rate (HHR); absence of sustained flaming or glowing combustion; and absence of structural failure of the deck board. Smaller values of heat release rate reflect lower combustibility than larger values. This proposal uses the same acceptance criteria as the State of California SFM office which specifies a maximum net peak heat release of (no more than) 25 kW/ft² [269 kW/m²] for deck boards. For comparison, the HHR for a large juniper bush can be as high as 1000 kW.

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

This proposal allows different materials to be testing to comply with the WUI decking standards and will not increase the cost of construction over current required methods of construction.

Analysis: A review of the standard proposed for inclusion in the code, ASTM E2632/E2632M-13e1 Standard Test Method for Evaluating the Under-Deck Fire Test Response of Deck Materials, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

Internal ID: 2344

WUIC10-18

IWUIC: 504.7.1 (New), 505.7.1 (New), 07

Proponent: John Woestman, Kellen Co., representing Composite Lumber Manufacturers Association (CLMA)
(jwoestman@kellencompany.com)

2018 International Wildland-Urban Interface Code

Add new text as follows:

504.7.1 Walking surfaces of unenclosed accessory structures. Walking surfaces of unenclosed accessory structures shall comply with Section 504.7 or shall comply with the following:

1. Materials tested in accordance with ASTM E2632 / E2632M with an effective peak heat release rate not more than 25 kW/ft² (269 kW/m²), and
2. Materials tested in accordance with ASTM E84 with a Class B flame spread rating or materials where installed abutting an exterior wall, the exterior wall surface for a minimum height of 24 inches above the walking surface of the deck shall be either approved noncombustible materials or ignition-resistant materials in accordance with Section 503.2.

505.7.1 Walking surfaces of unenclosed accessory structures. Walking surfaces of unenclosed accessory structures shall comply with Section 504.7 or shall comply with the following:

1. Materials tested in accordance with ASTM E2632 / E2632M with an effective peak heat release rate not more than 25 kW/ft² (269 kW/m²), and
2. Materials tested in accordance with ASTM E84 with a Class B flame spread rating or materials where installed abutting an exterior wall, the exterior wall surface for a minimum height of 24 inches above the walking surface of the deck shall be either approved noncombustible materials or ignition-resistant materials in accordance with Section 503.2.

Add new standard(s) follows:

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box
C700
West Conshohocken PA 19428-
2959

E2632/E2632M-13e1:

Standard Test Method for Evaluating the Under-Deck Fire Test Response of Deck Materials

Reason:

This proposal aligns with current requirements of the California Chapter 7A, and includes an option where wall material may be required to be either noncombustible or ignition-resistant.

This proposal seeks to introduce practical and realistic performance requirements for materials used for the walking surfaces of unenclosed accessory structures (i.e. exterior decks) in wildland-urban interface areas. This proposal introduces ASTM E2632, commonly known as the under-deck fire test, to the IWUIC.

The requirements rely on a fire test specifically designed to test and evaluate the performance of decking when constructed as a deck assembly in simulated WUI fire exposure. While this is different than the ASTM E84 test of Section 503.2 for ignition-resistant building materials, the test configuration and test requirements of ASTM E2632 were developed specifically for deck materials in WUI applications.

The ASTM E2632 test procedure requires constructing a small deck structure (joists and deck boards) consistent with the manufacturer's installation instructions and then this deck structure is placed over a burner. The flames and heat from the ignited burner are designed to simulate combustibles burning under a deck which frequently occurs during a WUI fire. The test deck structure is subject to the intense flame and heat from the burner for 3 minutes, and the fire performance of the decking is evaluated for the next 40 minutes to determine the response of the decking.

It is our understanding that based on testing of many decking products using the ASTM E2632 test method, it has been consistently observed that products meeting the conditions of acceptance as referenced in the proposed code change (an effective peak heat release rate not more than 25 kW/ft² (269 kW/m²) produce a limited level of heat release

during the flame exposure, with flames self-extinguishing shortly after the flame source is removed. This test method and acceptance criteria successfully differentiates "passing" products from those where sustained flaming and progressive fire growth occurs, presenting an unacceptable ignition hazard to the adjoining structure.

Cost Impact

The code change proposal will decrease the cost of construction .

This proposal includes what may be considered "right sized" fire performance requirements for exterior decking products (walking surfaces of unenclosed accessory structures). As such, additional decking products may become available in the market and the cost of decking products may be reduced.

Analysis: A review of the standard proposed for inclusion in the code, ASTM E2632/E2632M-13e1 Standard Test Method for Evaluating the Under-Deck Fire Test Response of Deck Materials, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

Internal ID: 2364

WUIC11-18

IWUIC: 505.2

Proponent: Marcelo Hirschler, GBH International, representing GBH International (gbhint@aol.com)

2018 International Wildland-Urban Interface Code

Revise as follows:

505.2 Roof covering. Roofs shall have a roof assembly that complies with not less than a Class ~~B~~A rating when tested in accordance with ASTM E108 or UL 790, or an *approved noncombustible roof covering*. For roof coverings where the profile allows a space between the roof covering and roof decking, the space at the eave ends shall be firestopped to preclude entry of flames or embers, or have one layer of 72- pound (32.4 kg) mineral-surfaced, nonperforated cap sheet complying with ASTM D3909 installed over the combustible decking.

Reason:

Recent wildfires have demonstrated that burning embers are the key reason for transmission of fire from building to building. The key concern are clearly surfaces that are horizontal (such as decks or some roofs) or at a relatively small angle (such as roofs). Therefore, it is important that roof assemblies in wildland urban interface areas exhibit the best fire classification. This proposal requires that roofs in Class 2 ignition-resistant construction should have a Class A rating in accordance with ASTM E108. There can never be assurance, of course, that a better fire classification will ensure that fires don't spread but it is clear that the probability of fire spread will be lower if the fire performance of the roof assembly is better.

A separate proposal handles the terminology associated with this section, which is inconsistent but this proposal is of a technical nature.

Cost Impact

The code change proposal will increase the cost of construction .

This proposal will require that roof assemblies meet a more severe fire rating in accordance with ASTM E108.

Internal ID: 785

WUIC12-18

IWUC: 505.5, 505.5 (New), 505.5.1 (New), 07

Proponent: David Tyree, American Wood Council, representing American Wood Council (dtyree@awc.org)

2018 International Wildland-Urban Interface Code

Delete without substitution:

~~**505.5 Exterior walls.** Exterior walls of buildings or structures shall be constructed with one of the following methods:~~

- ~~1. Materials approved for not less than 1-hour fire-resistance-rated construction on the exterior side.~~
- ~~2. Approved noncombustible materials.~~
- ~~3. Heavy timber or log wall construction.~~
- ~~4. Fire-retardant treated wood on the exterior side. The fire-retardant treated wood shall be labeled for exterior use and meet the requirements of Section 2303.2 of the International Building Code.~~
- ~~5. Ignition-resistant materials on the exterior side.~~

~~Such material shall extend from the top of the foundation to the underside of the roof sheathing.~~

Add new text as follows:

505.5 Exterior walls. Exterior walls of buildings or structures shall be tested in accordance with ASTM E2707 and shall comply with the conditions of acceptance in Section 505.5.1.

Exceptions:

1. One layer of 5/8" gypsum sheathing applied behind the exterior wall covering or cladding on the exterior side of the framing.
2. Materials approved for not less than 1-hour fire-resistance-rated construction on the exterior side of the wall assembly when tested in accordance with ASTM E119.

Exterior wall coverings shall have a Class B flame spread index and shall extend from the top of the foundation to the underside of the roof sheathing.

505.5.1 Conditions of Acceptance when tested in accordance with ASTM E2707. The test shall be conducted in accordance with ASTM E2707 and the conditions of acceptance in items 1 and 2 below shall be met.

1. Absence of flame penetration through the wall assembly at any time.
2. Absence of glowing combustion on the unexposed side of the assembly at any time during the 70-min test.

Add new standard(s) follows:

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box
C700
West Conshohocken PA 19428-
2959

E2707-15:

Standard Test Method for Determining Fire Penetration of Exterior Wall Assemblies Using a Direct Flame Impingement Exposure

Reason:

This proposal includes a wall assembly fire performance requirement by adding ASTM consensus standard, ASTM E2707, "Standard Test Method for Determining Fire Penetration of Exterior Wall Assemblies Using a Direct Flame Impingement Exposure" as the ASTM test method for the acceptable fire performance of exterior wall assemblies in WUI areas. Exterior sides of wall assemblies that meet 1-hour fire resistance rating in accordance with ASTM E119 is proposed to be left as currently referenced. All other requirements that are not based on an exterior wall fire performance test are proposed to be deleted. WUI exterior wall fire performance is dependent on the cladding on the wall as well as its method of installation. Requiring the exterior wall systems to be tested in accordance with

ASTM E2707 or ASTM E119 would add the method of installation, including joints, to compliance criteria.

ASTM E2707 test method measures the ability of the wall system to resist fire penetration from the exterior into the wall cavity or unexposed side of the test assembly under the conditions of exposure. This test method was developed in response to recommendations developed by the California Office of the State Fire Marshal (SFM) and the International Wildland-Urban Interface Code (IWUIC) regarding the enhancement of exterior fire protection of structures in a wildland fire (exterior wildfire exposure). This proposal establishes performance criteria for materials to be used on the exterior buildings, structures, and detached accessory structures. While this test method is intended to address one component of an exterior wildfire exposure, that is, exterior walls exposed to direct flame impingement the proposal goes on to regulate the flame spread of the materials applied to the exterior wall. The purpose of this standard is to provide a definitive set of procedures for the evaluation and measurement of the resistance to fire penetration of exterior wall structures. The test is a practical attempt to simulate the case where ignition of flammable materials (plants, trash, a deck or shed, etc.) might be adjacent to a building.

Exterior sides of wall assemblies that meet 1-hour fire resistance rating in accordance with ASTM E119 is proposed to be left as currently referenced. A second option of providing a layer of 5/8" gypsum sheathing is consistent with this requirement but gives a prescriptive solution to requiring the test. All other requirements that are not based on an exterior wall fire test ASSEMBLIES are proposed to be deleted. WUI exterior wall fire performance is dependent on the cladding material as well as its method of installation. Requiring that exterior wall systems be tested in accordance with ASTM E2707 or ASTM E119 would add the method of installation to compliance criteria.

A 10-min 150-kW exposure was used for the siding-sheathing combinations, followed by an additional 60- min observation to detect any smoldering combustion. The use of infrared photography of the back of the test wall was used to reveal development of increasing temperatures or persisting hot spots. Other tests were run on solely cladding or sheathing, where the burner was left on until failure to determine the weak points in various materials. Most of the siding-sheathing assemblies exhibited acceptable performance. However, the hardboard siding failed because it burned and warped away from the sheathing, exposing it to flames. For the siding-only tests flame penetration occurred at joints for "combustible" siding. The nature of the siding joints had a substantial effect on relative performance. Most vulnerable was the plain bevel, while rabbeted and shiplap joints were increasingly resistant to flame-through. Tests on different types of siding materials including but not limited to; combustible, heavy timber, fire retardant treated wood and ignition resistant materials should also require testing in accordance with this standard since they were grandfathered in with the exceptions and have never been tested in our knowledge. It is thought that the type of joints using these construction materials will also have a questionable response depending of construction procedure and should also be tested to gain acceptance.

Additionally, it is recognized that the flame spread of the wall material is also very important to the wall performance in Wildland Urban Interface events. With this proposal BOTH the fire penetration through the exterior wall covering assembly into the wall cavity, and surface flame spread of wall covering material are taken into consideration. The current requirement pertains to exterior wall covering material without consideration of the exterior wall assembly performance. Qualifying just the wall covering material may not necessarily assure the safety from a wildland fire exposure. It has been shown that joints are a real weakness in the WUI envelope protection and this proposal addresses that concern. The exception to have an exterior wall assembly tested in accordance with ASTM E2707 is to allow assemblies approved for not less than 1-hour fire-resistance construction applied to the exterior side of the wall assembly or provide a layer of gypsum board as a part of the exterior wall covering assembly.

It is also reasonable to assume that accelerated aging/weathering tests will be required by an AHJ or listing agency as it is important to evaluate the permanence of the fire retardant properties of the product. The aging process will be defined by the intended end-use application and the materials content of the product being tested. Since the proposed test method is applicable to a wide range of products or assemblies, it is not reasonable to assume that all materials should be subjected to the same accelerated aging/weathering process. Test Method ASTM D2898 has long been used as an accelerated weathering process with fire retardant treated lumber products where leaching of chemicals may be an issue. For a product comprised of 100 % plastic, where leaching may not be an issue, some other test method may be appropriate. There are several different accelerated aging/ weathering procedures available. The effectiveness of these procedures vary with changes in the composition of the materials being aged. The language within the standard is worded so that accelerated aging/weathering is not required in all cases, but is required where such results are a condition of acceptance for a product to be used in a code regulated application. As such, the language provides the flexibility needed for the range of materials being used for exterior wall applications.

This proposal places the ASTM decking performance standards into a lower Wildland-Urban Interface Fire classification, Class 2 Ignition-Resistant Construction. The first step to determining the Fire Hazard Severity is to determine if the site is in Low, Moderate,

High or Extreme Hazard Area. Most fire departments have a fire hazard map. Next you determine if a conforming water supply and a defensible space are provided. Then you take this information and apply it to Table 503.1 to determine the required ignition-resistant construction. Depending on nonconforming or conforming water supply and defensible

space you may be able to modify your ignition resistant construction requirements. Upon examination of Table 503.1, Class 2 Ignition Resistant Construction is only permitted in moderate hazard areas with a conforming water supply or a conforming defensible space. In high hazard areas,

Class 2 Ignition Resistant Construction is only permitted where a conforming water AND defensible space is provided. In an extreme hazard area, you must have a conforming water supply and 1.5 times the required defensible space. Materials used for construction are only one consideration in wildland-urban interface fires.

Other considerations which are equally or more important are providing an adequate water supply and defensible space. Without either of these other considerations, the structures have little or no chance of survival regardless of construction. Per Section 502.2 of the International Wildland-Urban Interface Code, Fire Hazard Severity can be reduced by implementing an approved Vegetation Management Plan. Vegetation management plans shall be provided describing all actions that will be taken to prevent a fire from being carried toward or away from the building. Elements of the plan should include removal of slash, snags, vegetation that may grow into overhead electrical lines, other ground fuels, ladder fuels and dead trees, and the thinning of live trees. Additionally, a plan for maintaining the proposed fuel reduction measures should be provided. Defensible space plans must be submitted to the code official for review and approval as part of the plans required for a permit. In other words, these considerations must be considered to provide a structure that can withstand a WUI fire.

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

This proposal places an ASTM WUI Standard for exterior walls in the code and will not increase or decrease the cost of construction in these areas.

Analysis: A review of the standard proposed for inclusion in the code, ASTM E2707-15 Standard Test Method for Determining Fire Penetration of Exterior Wall Assemblies Using a Direct Flame Impingement Exposure, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

Internal ID: 1063

WUIC13-18

IWUIC: 505.7

Proponent: Marcelo Hirschler, GBH International, representing GBH International (gbhint@aol.com)

2018 International Wildland-Urban Interface Code

Revise as follows:

505.7 Appendages and projections. *Unenclosed accessory structures* attached to buildings with habitable spaces and projections, such as decks, shall be not less than 1-hour fire-resistance-rated construction, heavy timber construction or constructed of one of the following:

1. *Approved noncombustible* materials.
2. Fire-retardant-treated wood identified for exterior use and meeting the requirements of Section 2303.2 of the International Building Code.
3. Ignition-resistant building materials in accordance with Section 503.2.

Exception: Coated materials shall not be used as the walking surface of decks.

Reason:

It is possible to create ignition-resistant materials that are the result of coating the front and back of certain panels (such as wood panels) and that meet the requirements. Such materials are typically fully suitable for use in most applications where ignition resistant materials are called for except for walking surfaces because of the probability of erosion after a certain period of use.

Therefore, if the coating is being eroded, the fire safety will decrease.

Cost Impact

The code change proposal will increase the cost of construction .

It is unlikely that coated materials are being used as decking materials, but if they are used, the proposed change would eliminate an option.

Internal ID: 869

WUIC14-18

IWUC: 505.7, 505.7.1 (New), 505.7.1.1 (New), 07

Proponent: Kuma Sumathipala, American Wood Council, representing American Wood Council
(ksumathipala@awc.org)

2018 International Wildland-Urban Interface Code

Revise as follows:

505.7 Appendages and projections. *Unenclosed accessory structures* attached to buildings with habitable spaces ~~and, projections, such as, decks, other than walking surfaces of decks,~~ shall be not less than 1-hour fire-resistance-rated construction, heavy timber construction or constructed of one of the following:

1. *Approved noncombustible materials.*
2. *Fire-retardant-treated wood identified for exterior use and meeting the requirements of Section 2303.2 of the International Building Code.*
3. *Ignition-resistant building materials in accordance with Section 503.2.*

Add new text as follows:

505.7.1 Walking surfaces of Decks. The walking surface material of decks, porches, balconies and stairs shall be constructed of one of the following:

1. Approved noncombustible materials.
2. Fire-retardant-treated wood identified for exterior use and meeting the requirements of Section 2303.2 of the International Building Code.
3. Ignition-resistant building materials in accordance with Section 503.2.
4. Materials tested in accordance with ASTM E2632 and meeting the conditions of acceptance in Section 505.7.1.1. If abutting an exterior wall that otherwise complies with this chapter, the portion of the exterior wall covering material abutting the walking surface shall have a Class A flame spread index when tested in accordance with ASTM E84 or UL 723 and shall extend to a minimum height of 24 inches above the walking surface and a minimum of 12 inches below the walking surface.

505.7.1.1 Conditions of acceptance. ASTM E2632 shall be conducted in triplicate and the peak heat release rate of each test shall be less than or equal to 25 kW per square foot of deck area (269 kW per square meter of deck area).

Add new standard(s) follows:

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box
C700
West Conshohocken PA 19428-
2959

E2632/E2632M-13e1:

Standard Test Method for Evaluating the Under-Deck Fire Test Response of Deck Materials

Reason:

This proposal includes a fire performance requirement by adding a ANSI Consensus Standard specifically developed to qualify exterior decks for Wildland Urban Interface fire performance. ASTM E2632, "Standard Test Method for Evaluating the Under-Deck Fire Test Response of Deck Materials". This test method was developed in response to recommendations developed by the California Office of the State Fire Marshal (OSFM) regarding the performance of decking materials in a wildland fire (exterior wildfire exposure). The ASTM E2632 test method addresses the case where a brand is blown or a surface fire extends under a deck and onto combustible material causing flaming combustion that may lead to penetration through the siding or some other vulnerable point of the main structure. The test is a practical attempt to simulate the case where combustible material resides beneath a structure and can become involved in a wildland fire event. The major concern about the ignition of decking is the hazard that it presents

to the habitable structure. Decking is usually configured so that it is capable of being threatened by two potential sources of ignition: brands on the surface of the decking and flaming material underneath the structure. It has been shown that in a typical Wildland Urban Interface fire, burning brands can land on a deck causing combustion leading to flaming combustion. The flames impinge on the wall of the structure causing penetration at a vulnerable point into the structure. This proposal not only requires the decking material to be limited to a peak heat release rate of 25kw per square foot but adds additional requirements to provide noncombustible and ignition resistant construction to a height of 24 inches above the deck and 12 inches below the deck to protect the structure from any flaming caused by a burning brand landing on an exterior deck surface. The additional requirement requiring a Class A covering material to a height of 24 inches above the walking surface and 12 inches below, have been added to specifically address recent testing conducted to examine potential vulnerabilities of wood decks to continuous, wind-driven firebrand showers. ASTM E2632 test method provides for several conditions that must be met to pass the performance criteria including: a limited heat release rate (HHR); absence of sustained flaming or glowing combustion; and absence of structural failure of the deck board. Smaller values of heat release rate reflect lower combustibility than larger values. This proposal uses the same acceptance criteria as the State of California SFM office which specifies a maximum net peak heat release of (no more than) 25 kW/ft² [269 kW/m²] for deck boards. For comparison, the HHR for a large juniper bush can be as high as 1000 kW.

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

This proposal allows different materials to be testing to comply with the WUI decking standards and will not increase the cost of construction over current required methods of construction.

Analysis: A review of the standard proposed for inclusion in the code, ASTM E2632/E2632M-13e1 Standard Test Method for Evaluating the Under-Deck Fire Test Response of Deck Materials, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

Internal ID: 2365

WUIC15-18

IWUIC: 505.7, 505.7.1 (New), 505.7.1.1 (New), 07

Proponent: David Tyree, American Wood Council, representing American Wood Council (dtyree@awc.org)

2018 International Wildland-Urban Interface Code

Revise as follows:

505.7 Appendages and projections. *Unenclosed accessory structures* attached to buildings with habitable spaces and projections, such as decks, shall have walking surfaces complying with Section 505.7.1 or shall be not less than 1-hour fire-resistance-rated construction, heavy timber construction or constructed of one of the following:

1. *Approved noncombustible* materials.
2. Fire-retardant-treated wood identified for exterior use and meeting the requirements of Section 2303.2 of the International Building Code.
3. Ignition-resistant building materials in accordance with Section 503.2.

Add new text as follows:

505.7.1 Deck Materials. The walking surface material of decks, porches, balconies and stairs shall comply with Section 505.7 or shall be tested in accordance with ASTM E2632 and shall meet the acceptance criteria in Section 505.7.1.1 . If abutting an exterior wall that otherwise complies with this chapter, the portion of the exterior wall covering material abutting the walking surface shall have a Class A flame spread index when tested in accordance with ASTM E84 or UL 723 and shall extend material to a minimum height of 24 inches above the walking surface and a minimum of 12 inches below the walking surface.

505.7.1.1 Conditions of acceptance when tested in accordance with ASTM E2632. The test shall be conducted in triplicate and the peak heat release rate of each test shall be less than or equal to 25 kW per square foot of deck area (269 kW per square meter of deck area).

Add new standard(s) follows:

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box
C700
West Conshohocken PA 19428-
2959

E2632/E2632M—13e1:

Standard Test Method for Evaluating the Under-Deck Fire Test Response of Deck Materials

Reason:

This proposal includes a fire performance requirement by adding a ANSI Consensus Standard specifically developed for Wildland-Urban Interface fires. ASTM E2632, "Standard Test Method for Evaluating the Under-Deck Fire Test Response of Deck Materials". This test method was developed in response to recommendations developed by the California Office of the State Fire Marshal (OSFM) regarding the performance of decking materials in a wildland fire (exterior wildfire exposure). The ASTM E2632 test method addresses the case where a brand is blown or a surface fire extends under a deck and onto combustible material causing flaming combustion that may lead to penetration through the siding or some other vulnerable point of the main structure. The test is a practical attempt to simulate the case where combustible material resides beneath a structure and can become involved in a wildland fire event.

The major concern about the ignition of decking is the hazard that it presents to the habitable structure. Decking is usually configured so that it is capable of being threatened by two potential sources of ignition: brands on the surface of the decking and flaming material underneath the structure. It has been shown that in a typical Wildland-Urban Interface fire, burning brands can land on a deck causing combustion leading to flaming combustion. The flames impinge on the wall of the structure causing penetration at a vulnerable point into the structure. This proposal not only requires the decking material to be limited to a peak heat release rate of 25kw per square foot but adds additional requirements to provide non-combustible and ignition resistant construction to a height of 24 inches above the deck and 12 inches below the deck to protect the structure from any flaming caused by a burning brand landing on an exterior deck surface. The additional requirement requiring a Class A covering material to a height of 24 inches above

the walking surface and 12 inches below, have been added to specifically address recent testing conducted to examine potential vulnerabilities of wood decks to continuous, wind-driven firebrand showers. ASTM E2632 test method provides for several conditions that must be met to pass the performance criteria including: a limited heat release rate (HHR); absence of sustained flaming or glowing combustion; and absence of structural failure of the deck board. Smaller values of heat release rate reflect lower combustibility than larger values. This proposal uses the same acceptance criteria as the State of California SFM office which specifies a maximum net peak heat release of (no more than) 25 kW/ft² [269 kW/m²] for deck boards. For comparison, the HHR for a large juniper bush can be as high as 1000 kW.

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

This proposal allows different materials to be tested to comply with the WUI decking standards and will not increase the cost of construction over current required methods of construction.

Analysis: A review of the standard proposed for inclusion in the code, ASTM E2632/E2632M-13e1 Standard Test Method for Evaluating the Under-Deck Fire Test Response of Deck Materials, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

Internal ID: 1065

WUIC16-18

IWUIC: 506.2

Proponent: Marcelo Hirschler, representing GBH International (gbhint@aol.com)

2018 International Wildland-Urban Interface Code

Revise as follows:

506.2 Roof covering. Roofs shall have a roof assembly that complies with not less than a Class ~~C~~B rating when tested in accordance with ASTM E108 or UL 790 or an *approved noncombustible roof* covering. For roof coverings where the profile allows a space between the roof covering and roof decking, the space at the eave ends shall be firestopped to preclude entry of flames or embers, or have one layer of 72- pound (32.4 kg) mineral-surfaced, nonperforated cap sheet complying with ASTM D3909 installed over the combustible decking.

Reason:

Recent wildfires have demonstrated that burning embers are the key reason for transmission of fire from building to building. The key concern are clearly surfaces that are horizontal (such as decks or some roofs) or at a relatively small angle (such as roofs). Therefore, it is important that roof assemblies in wildland urban interface areas exhibit the best fire classification. This proposal requires that roofs in Class 3 ignition-resistant construction should have a Class B rating in accordance with ASTM E108. This proposal acknowledges that Class 3 ignition-resistant construction provides less protection than Class 1 or 2 and, therefore, recommends that it be changed from Class C roof fire classification to Class B roof fire classification and not to Class A. There can never be assurance, of course, that a better fire classification will ensure that fires don't spread but it is clear that the probability of fire spread will be lower if the fire performance of the roof assembly is better.

A separate proposal handles the terminology associated with this section, which is inconsistent but this proposal is of a technical nature.

Cost Impact

The code change proposal will increase the cost of construction .

This proposal will require that roof assemblies meet a more severe fire rating in accordance with ASTM E108.

Internal ID: 789
