IWUIC

2016 GROUP B PUBLIC COMMENT AGENDA

OCTOBER 19 - OCTOBER 25, 2016
KANSAS CITY CONVENTION CENTER
KANSAS CITY, MO

ICC
INTERNATIONAL CODE COUNCIL®

First Printing

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WUIC3-16

IWUIC: 504.5.

Proposed Change as Submitted

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

2015 International Wildland-Urban Interface Code

Add new text 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 on the exterior side.
6. Wall assemblies tested in accordance with ASTM E2707 for 10-minutes direct flame contact exposure provided there is absence of flame penetration through the wall and absence of glowing combustion on the interior surface of the assembly at the end of 70 minutes; 10 minutes of direct flame contact followed by 60 minutes of observation time.

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

Architectural trim, embellishments, roof or wall top cornice projections, rafter ends, fascias, gutters, and eave construction shall not be considered part of the exterior wall and shall comply with other applicable provisions of this code.

Reference standards type: This reference standard is new to the ICC Code Books

Add new standard(s) as follows:

ASTM E 2707-15 Standard Test Method for Determining Fire Penetration of Exterior Wall Assemblies Using a Direct Flame Impingement Exposure

Reason: Performance criteria for exterior walls will make sure no material that

performs well will be excluded, and conversely that no material which does not perform will be included. The ASTM standard proposed was developed as a consequence of wild fire experience in the state of California, and mirror the standards of the California State Fire Marshal's office. The propsoed acceptance criteria are consistent with that used for regulation in the State of California. This change would make clause 504.5 functionally equivalent to Clause 707A.3(5), Chapter 7A-Materials and Construction Methods for Exterior Wildfire Exposure of the California Building Code 2013.

Cost Impact: Will increase the cost of construction
Adds performance ASTM stds to existing code consistent with CA IW codes.

WUIC3-16 : 504.5-TYREE12721

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: The committee stated that the proposed new standard does not include necessary provisions for the weathering of wood materials and it is not applicable to the current code section.

Assembly Motion: **As Submitted**
Online Vote Results: **Failed**
Support: 39.2% (138) Oppose: 60.8% (214)
Assembly Action: **None**

Individual Consideration Agenda

Public Comment 1:

Proponent : Howard Stacy, California Redwood Association, representing California Redwood Association (howard.stacy@priestassociates.com); David Tyree, representing American Wood Council (dtyree@awc.org) requests Approve as Modified by this Public Comment.

Modify as Follows:

2015 International Wildland-Urban Interface Code

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 on the exterior side.
6. Wall assemblies tested in accordance with ASTM E2707 for 10-minutes direct flame contact exposure provided there is absence of flame penetration through the wall and absence of glowing combustion on the interior surface of the assembly at the end of 70 minutes; 10 minutes of direct flame contact followed by 60 minutes of observation time. Prior to testing, the material shall be weathered in accordance with the applicable standard specified for the product.

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

Architectural trim, embellishments, roof or wall top cornice projections, rafter ends, fascias, gutters, and eave construction shall not be considered part of the exterior wall and shall comply with other applicable provisions of this code.

Commenter's Reason:

STACY: This public comment is submitted in support of the addition of ASTM E2707 "Standard Test Method for Determining Fire Penetration of Exterior Wall Assemblies Using a Direct Flame Impingement Exposure", with the conditions of acceptance as set forth in the California State Fire Marshal Standard SFM 12-7A-1, to the allowances for Exterior Walls listed in IWUIC Section 504.5. ASTM E2707 closely adheres to the test procedures described in 12-7A-1. Through the consensus standardization process, refinements were made to SFM 12-7A-1 to provide for an acceptable level of repeatablility (within lab) and reproducibility (between labs). This test method provides a definitive set of procedures for the evaluation and measurement of the resistance to fire penetration (burn-through) into the wall cavity of exterior wall structures from direct flame impingment from the combustion of flaming materials adjacent to the structure. The measurement of fire penetration through the wall (fire resistance) is considered of greater

importance than surface flammability (the fire must be prevented from penetrating the structure). The resistance to burn-through penetration of the exterior wall covering or the outside layer of the exterior wall assembly into the wall cavity is measured by the observation of sustained flaming on the unexposed side of the exterior wall covering, or the presence of sustained smoldering 1 hour after the termination of the open flame exposure. From fire service field reports, the persistance of smoldering combustion within the wall cavity has led to loss of structures long after they had been considered safe.

Even though noncombustible cladding is prescriptively permitted in the referenced code section, the testing of a fiber cement panel product using the ASTM E2707/12-7A-1 methodology has resulted in test failure either due to flame penetration occurring through a crack in the panel, or by the conduction of heat through the noncombustible panel causing ignition of a stud behind the siding. From this, the test method has demonstrated the ability to screen for a condition where a "prescriptively allowed" product actually failed to meet the test conditions and criteria, providing support to the contention that the addition of the test to the exterior wall allowances presents a sufficient level of rigor and will not detract from the intent of the IWUIC code.

TYREE: Following the October 1991 Oakland Hills Fire, the California Building Standards Commission formed a working group to assist the State Fire Marshal's Office (SFM) conduct fire research and develop regulatory measures to mitigate property damage from Wildland Urban Interface fires. As a result, California Building Code, Chapter 7A-Wildland-Urban Interface Code was created. The provisions and standards contained within Chapter 7A have been used successfully since 2008 in resisting WUI fires. The recently approved ASTM consensus standard E2707 is identical to the test method used for exterior siding in California Building Code, Chapter 7A. This ASTM standard is specifically written to provide a consensus-based test method for accessing the fire performance of an exterior wall assembly under a simulated WUI fire scenario.

Opponents of this proposal stated at the Committee Action Hearings and have contended that there are no pass/fail criteria contained within ASTM E2707. This is true; however, "ASTM POLICY DOES NOT ALLOW FOR ACCEPTANCE CRITERIA IN FIRE TEST STANDARDS". Consensus standards-writing organizations such as ASTM are not in the position to judge the "acceptability" of products; the development of acceptance criteria is the responsibility of the code-writing bodies. The acceptance criteria are explicitly provided within item 6 of this proposal and are consistent with the same criteria found in the California WUI

Standard. The fire exposure in ASTM E2707, coupled with the proposed acceptance criteria is a robust fire performance based methology to assess fire penetration during a WUI event. This methology offers assemblies to be used on the exterior walls that have a higher level of fire protection than would be provided by other wall assemblies currently permitted in this section. As an example, exterior walls constructed with non-combustible exterior wall coverings have been shown to fail the ASTM E2707 test. This in itself supports the fact that the inclusion of ASTM E2707 in this section will not reduce the fire performance of the exterior walls of the current code provisions as claimed by opponents of this proposal. ASTM E2707 is the only test standard which has been created to address Wildland Urban Interface fires on exterior walls.

During the Committee Action Hearings, the committee recommended disapproval of this item because it did not contain any requirements for weathering of the materials prior to testing. The committee was correct in pointing out that ASTM E2707 only recommends a weathering test and does not specifically state a weathering test is required. A sentence has been added to the proposal which requires the wall material to be weathered prior to testing.

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

Commenter's Reason:

This proposal recommends a lowering of fire safety because it can be met by some untreated wood materials, such as redwood and a number of other wood species.

The CA SFM standards that were eventually converted into ASTM standards were developed following the 1991 California Oakland Hills fires and were considered when the IWUIC code was developed. The concept of ignition-resistant materials (which represent the current IWUIC requirements) were developed much later when it became clear that added fire safety would be required in the wildland areas and that the CA SFM standards did not provide sufficient fire safety.

Moreover, both fire retardant treated wood and ignition resistant materials must comply with a weathering test to ensure that the fire performance remains the same after weathering (for example after rain) while the proposed new sections are silent on weathering, meaning that they do not require weathering.

Proponent : Joseph Holland, representing Hoover Treated Wood Products (jholland@frtw.com) requests Disapprove.

Commenter's Reason: The proponent asked for online assembly action. The committee action was overwhelming sustained 61 percent to 39 percent by the online voters.
The purpose of the code is to harden the exterior of the structure against a wildfire. The committee action to disapprove was based in part on the fact the inclusion of this standard will allow materials that cannot pass the flame spread requirements of ASTM E84 or ASTM E2768. In addition the the WUI code requires materials must be tested for a thirty minute duration using E84 or E2768. During that time period the flame front cannot progress more than 10.5 feet beyond the centerline of the burners. Again, materials that cannot pass the the 10.5 foot limitation would be permitted if this standard is recommended for approval.

WUIC3-16

WUIC4-16

IWUIC: 504.7.

Proposed Change as Submitted

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

2015 International Wildland-Urban Interface Code

Revise as follows:

504.7 Appendages and projections. Walking surface elements of~~*Unenclosed*~~ *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. A minimum of 1-hour fire resistance rated construction
2. Heavy timber construction
3. Approved~~*Approved noncombustible*~~ *non-combustible* materials.
4. Fire-retardant-treated wood identified for exterior use and meeting the requirements of Section 2303.2 of the *International Building Code*.
5. Ignition-resistant building materials in accordance with Section 503.2.
6. Material that has been tested in accordance with ASTM E2632 and ASTM E2726 and meet the following acceptance criteria:
   6.1 ASTM E2632: Absence of sustained flaming or glowing combustion at the end of a 40-minute observation period: and effective net peak heat release rate of not more than 25kW/ft^2 and absence of melting and dripping particles that are still burning when reaching the floor.
   6.2. ASTM E2726: Absence of sustained flaming or glowing combustion at the end of a 40-minute observation period: and absence of melting and dripping particles that are still burning when reaching the floor.
7. Material that has been tested in accordance with ASTM E2632 and ASTM E84 and meet the following acceptance criteria:
   7.1 ASTM E2632: Absence of sustained flaming or glowing combustion at the end of a 40-minute observation period: and effective net peak heat release rate of not more than 25kW/ft^2 and absence of melting and dripping particles that are still burning when reaching the floor.
   7.2. ASTM E84: Material shall exhibit a flame spread index not exceeding 75 (Class B).

Reference standards type: This reference standard is new to the ICC Code

Books

Add new standard(s) as follows:

ASTM E2632/E2632M-13 Standard Test Method for Evaluating the Under-Deck Fire Test Response of Deck Materials

Reason: This proposal regulates the walking surfaces only of unenclosed appendages, since it is the element that would permit the spread of fire, rather than the underlying structure of decks and open porches which are larger in dimension and spaced apart. Investigations from structures and appendages exposed to wildland urban interface fires have not identified framing material for appendages as posing an additional risk. Accordingly, the State of California regulates the walking surface of appendages only.

Proposed alternative 6 would permit decking material that meets the stated acceptance criteria when tested in accordance with the two ASTM deck fire test standards, for under-deck exposure and over-deck brand exposure. Alternative 6 is functionally equivalent to Clause 709A.3(1), Chapter 7A-Materials and Construction Methods for Exterior Wildfire Exposure of the California Building Code 2013. The ASTM under deck fire test standard, E 2632, is already a referenced standard. The ASTM over-deck brand test method, E 2726, proposed to be added to the reference standard list.

Proposed alternative 7 would permit decking material that meets the stated acceptance criteria when tested in accordance with ASTM under-deck fire test standard, and Class B flame spread. Alternative 7 is functionally equivalent to Clause 709A.3(4), Chapter 7A-Materials and Construction Methods for Exterior Wildfire Exposure of the California Building Code 2013. The ASTM under deck fire test standard, E 2632, and ASTM flame spread test standard, E84 are already referenced standards.

ASTM test standards do not set acceptance criteria while the technically equivalent California State Fire Marshal test standards do. The proposed acceptance criteria are those contained in SFM Standards 12-7A-4 (under deck) and 12-7A-5 (over deck).

Cost Impact: Will not increase the cost of construction

Proposal references ASTM Standards which give an alternative procedure which

when used, will not increase the cost over existing code requirements.

WUIC4-16 : 504.7-TYREE13414

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: The committee stated that the proposed new standard does not include walking surfaces and it reduces the current requirements without substantiation.

Assembly Motion: **As Submitted**
Online Vote Results: **Failed**
Support: 38.98% (138) Oppose: 61.02% (216)
Assembly Action: **None**

Individual Consideration Agenda

Public Comment 1:

Proponent : Howard Stacy, Priest & Associates Consulting, representing California Redwood Association (howard.stacy@priestassociates.com); David Tyree, representing American Wood Council (dtyree@awc.org) requests Approve as Modified by this Public Comment.

Modify as Follows:

2015 International Wildland-Urban Interface Code

504.7 Appendages and projections. ~~Walking surface elements of *unenclosed accessory structures*~~ Unenclosed accessory structures attached to buildings with habitable spaces and projections~~, such as decks,~~ shall be constructed of one of the following:

1. A minimum of 1-hour fire resistance rated construction
2. Heavy timber construction
3. Approved *non-combustible* materials.
4. Fire-retardant-treated wood identified for exterior use and meeting the requirements of Section 2303.2 of the *International Building Code*.
5. Ignition-resistant building materials in accordance with Section 503.2.
6. ~~Material that has been tested in accordance with ASTM E2632 and~~

~~ASTM E2726 and meet the following acceptance criteria:~~

~~6.1 ASTM E2632: Absence of sustained flaming or glowing combustion at the end of a 40-minute observation period: and effective net peak heat release rate of not more than 25kW/ft^2 and absence of melting and dripping particles that are still burning when reaching the floor.~~

~~6.2. ASTM E2726: Absence of sustained flaming or glowing combustion at the end of a 40-minute observation period: and absence of melting and dripping particles that are still burning when reaching the floor.~~

~~7. Material that has been tested in accordance with ASTM E2632 and ASTM E84 and meet the following acceptance criteria:~~

~~7.1 ASTM E2632: Absence of sustained flaming or glowing combustion at the end of a 40-minute observation period: and effective net peak heat release rate of not more than 25kW/ft^2 and absence of melting and dripping particles that are still burning when reaching the floor.~~

~~7.2. ASTM E84: Material shall exhibit a flame spread index not exceeding 75 (Class B).~~

504.7.1 Decking. The walking surface of decks, porches, balconies and stairs shall comply with the requirements of this section and be constructed with one of the following materials:

1. Ignition-resistant building materials in accordance with Section 503.2.
2. Fire-retardant-treated wood identified for exterior use and meeting the requirements of Section 2303.2 of the *International Building Code*.
3. Approved noncombustible materials.
4. Materials that have been tested in accordance with ASTM E2632 and meet the following requirements:

4.1 Peak heat release rate of not more than 25 kW/ft^2 when tested in accordance with ASTM E2632 and,

4.2 If abutting an exterior wall, the portion of the exterior wall abutting the walking surface shall be covered with an approved noncombustible or ignition-resistant material to a minimum height of 24 inches above the walking surface.

Commenter's Reason:

STACY: ASTM Standard E2632 "Standard Test Method for Evaluating the Under-Deck Fire Test Response of Deck Materials" was developed by ASTM Subcommittee E05.14 on External Fire Exposures, part of ASTM International Committee E05 on Fire Standards. This method closely adheres to the California SFM Method 12-7A-4A test procedure. Through the consensus standardization process, the standard procedures described in ASTM E2632 were developed as

refinements to the CSFM 12-7A-4A methods to provide for an acceptable level of repeatability (within lab) and reproducibility (between labs). The fundamental elements of the two test methods are identical. The "acceptance criteria" of 12-7A-4A is included in the proposed code change language. The test measures the magnitude of the fire (in terms of peak heat release) both during and after flame exposure. This test is used by a number of major fire testing laboratories.

The major concern about the ignition of decking is the hazard that is presented to the neighboring structure. This method addresses the exposure of a simulated deck assembly to the direct impact of the plume from a burner flame, equivalent in the fire intensity and length of exposure produced by 1 kg of paper trash. The burner flame is situated beneath the test deck structure to simulate a "worst case" exposure configuration. The flame plume completely immerses the underside of the deck assembly, with flames extending vertically through the gaps in the deck boards.

From extensive personal laboratory experience with the testing of many dozens of decking products using this method, it has been consistently observed that products meeting the conditions of acceptance as referenced in the proposed code change produce a limited level of heat release during the flame exposure, with flames self-extinguishing shortly after the flame source is removed. The method successfully differentiates "passing" products from those where sustained flaming and progressive fire growth occurs, presenting an unacceptable ignition hazard to the adjoining structure.

TYREE: ASTM Standard E2632 "Standard Test Method for Evaluating the Under-Deck Fire Test Response of Deck Materials" was developed by ASTM Subcommittee E05.14 on External Fire Exposures, part of ASTM International Committee E05 on Fire Standards. This test method is identical to the California SFM Method 12-7A-4A test procedure. Opponents of this proposal stated at the Committee Action Hearings that there is no pass/fail criteria contained in ASTM E2632. This is true. However, "ASTM POLICY DOES NOT ALLOW FOR ACCEPTANCE CRITERIA IN FIRE TEST STANDARDS". Consensus standards writing organizations such as ASTM are not in the position to judge the "acceptability" of products; the development of acceptance criteria is the responsibility of the code-writing bodies. Consensus standards-writing organizations do not wish to usurp the code-writing bodies' authority to develop "acceptance criteria". The acceptance criterion provided in item 4.1 of this proposal are consistent with the same criterion found in the California WUI

Standard 12-7A-4A. The test measures the magnitude of the fire (in terms of peak heat release) both during and after flame exposure. This test is used by a number of major fire testing laboratories.

The fire exposure in ASTM E2632, coupled with the proposed acceptance criterion provide a performance-based methodology to assess fire performance of exterior decks during a WUI fire event. Restrictions on the lower 24 inches of an abutting exterior wall surface to be required to have a non-combustible or iginition-resistant surface is additionally required to address where burning embers may accumulate at the intersection of the walking surface and, if any, the abutting exterior wall.

Analysis: Note that Public Comments for WUIC4-16, WUIC5-16 and WUIC7-16 are similar in content and actions on these proposals should be consistent where applicable.

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

Commenter's Reason:

This proposal recommends a lowering of fire safety because it can be met by some untreated wood materials, such as redwood and a number of other wood species. As an example of the disparity with the earlier requirements, both items 4 and 5 (fire retardant treated wood and ignition resistant materials) require materials that meet the "extended" ASTM E84 test (30 minute test) with a flame spread index of 25 and a flame front that does not progress more than 10 and a half feet beyond the centerline of the burners. On the other hand item 7 states that the requirements for ASTM E84 (and using the 10 minute test duration only) are a flame spread index of 75 (much more than 25).

Moreover, both fire retardant treated wood and ignition resistant materials must comply with a weathering test to ensure that the fire performance remains the same after weathering (for example after rain) while the proposed new sections are silent on weathering, meaning that they do not require weathering.

The CA SFM standards that were eventually converted into ASTM standards were developed following the 1991 California Oakland Hills fires and were considered when the IWUIC code was developed. The concept of ignition-resistant materials (which represent the current IWUIC requirements) were developed much later when it became clear that added fire safety would be required in the wildland areas and that the CA SFM standards did not provide sufficient fire safety.

Proponent : Joseph Holland, representing Hoover Treated Wood Products (jholland@frtw.com) requests Disapprove.

Commenter's Reason: The proponent asked for online assembly action. The committee action was overwhelming sustained 61 percent to 39 percent by the online voters..
The purpose of the code is to harden the exterior of the structure against a wildfire. The committee action to disapprove was based in part on the fact the inclusion of this standard will allow materials that cannot pass the flame spread requirements of ASTM E84 or ASTM E2768. In addition the the WUI code requires materials must be tested for a thirty minute duration using E84 or E2768. During that time period the flame front cannot progress more than 10.5 feet beyond the centerline of the burners. Again, materials that cannot pass the the 10.5 foot limitation w ould be permitted if this standard is recommended for approval.

WUIC4-16

WUIC5-16

IWUIC: 504.7, 505.7.

Proposed Change as Submitted

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

2015 International Wildland-Urban Interface Code

Add new text 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.
4. Plastic composite deck boards and stair treads which comply with ASTM D7032 and comply with at least one of the methods below:
   - 4.1. Weathered in accordance with ASTM D7032 and tested in accordance with ASTM E1354 with a radiant heat flux of 35 kW/m^2 and an electric spark igniter. The weathering shall not decrease the time to ignition by more than 20%, and shall not increase the effective heat of combustion by more than 20%, and shall not increase the peak heat release rate by more than 25%. After demonstrating satisfactory effects of weathering, tested in accordance with ASTM E2632 / E2632M with a peak heat release rate no greater than 25 kW/ft^2 (269 kW/m2).
   - 4.2. After weathering as prescribed by ASTM D7032, tested in accordance with ASTM E2632 / E2632M with a peak heat release rate no greater than 25 kW/ft^2 (269 kW/m^2)..

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.
4. Plastic composite deck boards and stair treads which comply with ASTM D7032 and comply with at least one of the methods below:
    4.1. Weathered in accordance with ASTM D7032 and tested in accordance with ASTM E1354 with a radiant heat flux of 35 kW/m^2 and an electric spark igniter. The weathering shall not decrease the time to ignition by more than 20%, and shall not increase the effective heat of combustion by more than 20%, and shall not increase the peak heat release rate by more than 25%. After demonstrating satisfactory effects of weathering, tested in accordance with ASTM E2632 / E2632M with a peak heat release rate no greater than 25 kW/ft^2 (269 kW/m2).
    4.2. After weathering as prescribed by ASTM D7032, tested in accordance with ASTM E2632 / E2632M with a peak heat release rate no greater than 25 kW/ft^2 (269 kW/m^2).

Reason:

Reason

This proposal seeks to introduce practical and realistic performance requirements for plastic composites used for construction of exterior decks (appendages and projections) in wildland-urban interface areas. This proposal introduces ASTM E2632, commonly known as the under-deck fire test, to the IWUIC. This proposal is limited to plastic composite deck boards and stair treads and is focused on products which have already demonstrated compliance to ASTM D7032, as required by the IBC and the IRC.

This proposal explicitly requires the fire testing to evaluate the effects of weathering. Test option 4.1 requires comparing the before-weathering fire performance with the after-weathering fire performance of the deck material using the cone calorimeter (ASTM E1354 test). If the before and after small-scale cone calorimeter fire test demonstrates the fire performance of the decking material is not adversely affected by weathering, then the larger scale ASTM E2632 test evaluates the fire performance of the deck material. Test option 4.2 allows the manufacture the more expensive option of weathering adequate deck material to conduct the ASTM E2632 test on weathered deck material.

The requirements of test options 4.1 and 4.2 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 different than the ASTM E84 test of Section 503.2 for ignition-resistant building materials, including

the requirement in the proposal for these products to first comply with ASTM D7032 also means these products must demonstrate a ASTM E84 flame spread index of 200 or less (as required in ASTM D7032). 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 is 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.

Below are pictures of the ASTM E2632 / E2632M test. Notice the configuration of this small test deck and the wall to which the deck is adjacent, simulating an actual installation of a deck adjacent to a structure.

Photo 1. ASTM E2632 under-deck test in progress.

The test deck assembly is subjected to the flame and heat of the burner for 3 minutes (80 kW), simulating a WUIC fire causing combustibles beneath a deck to burn.

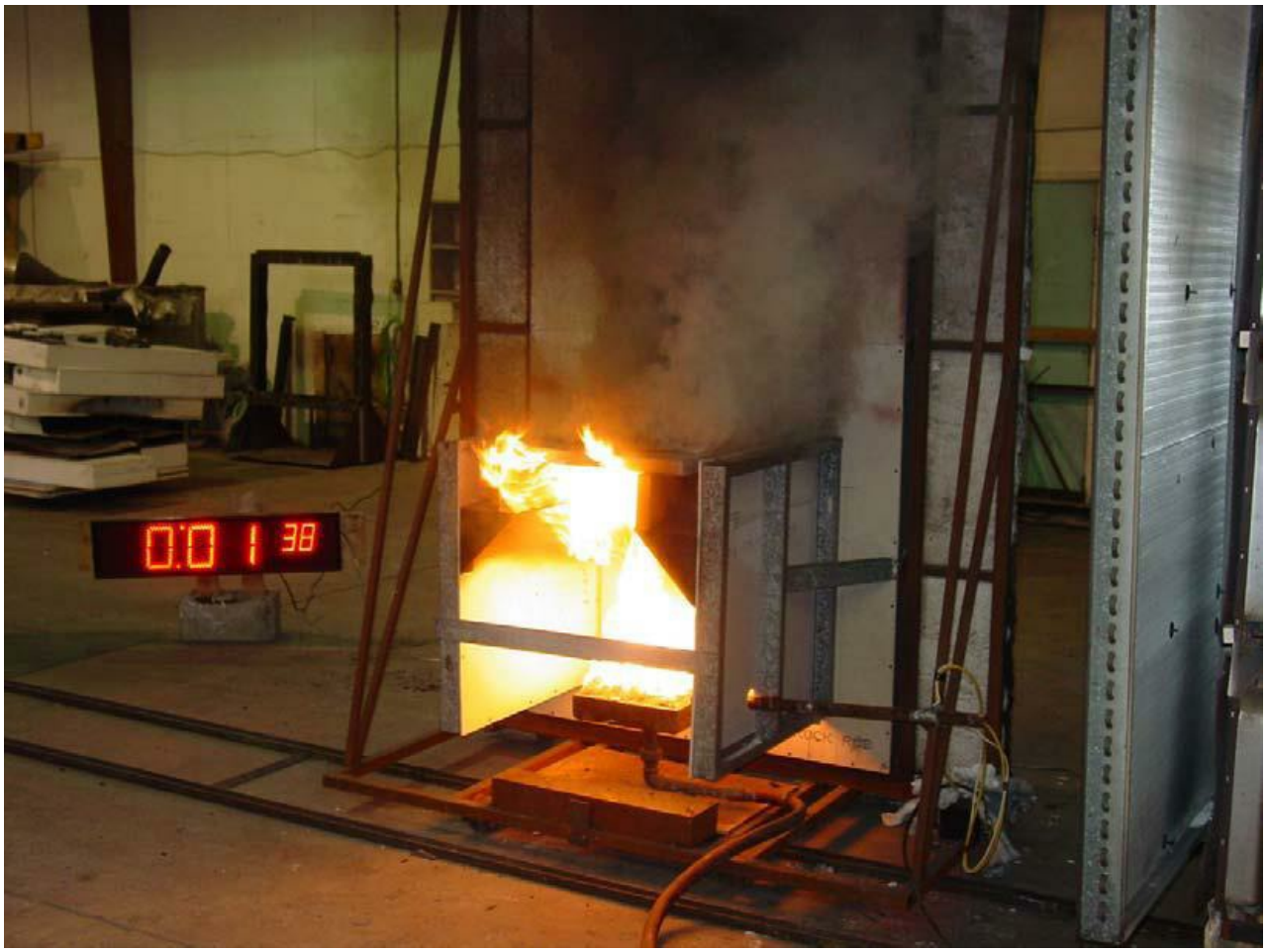
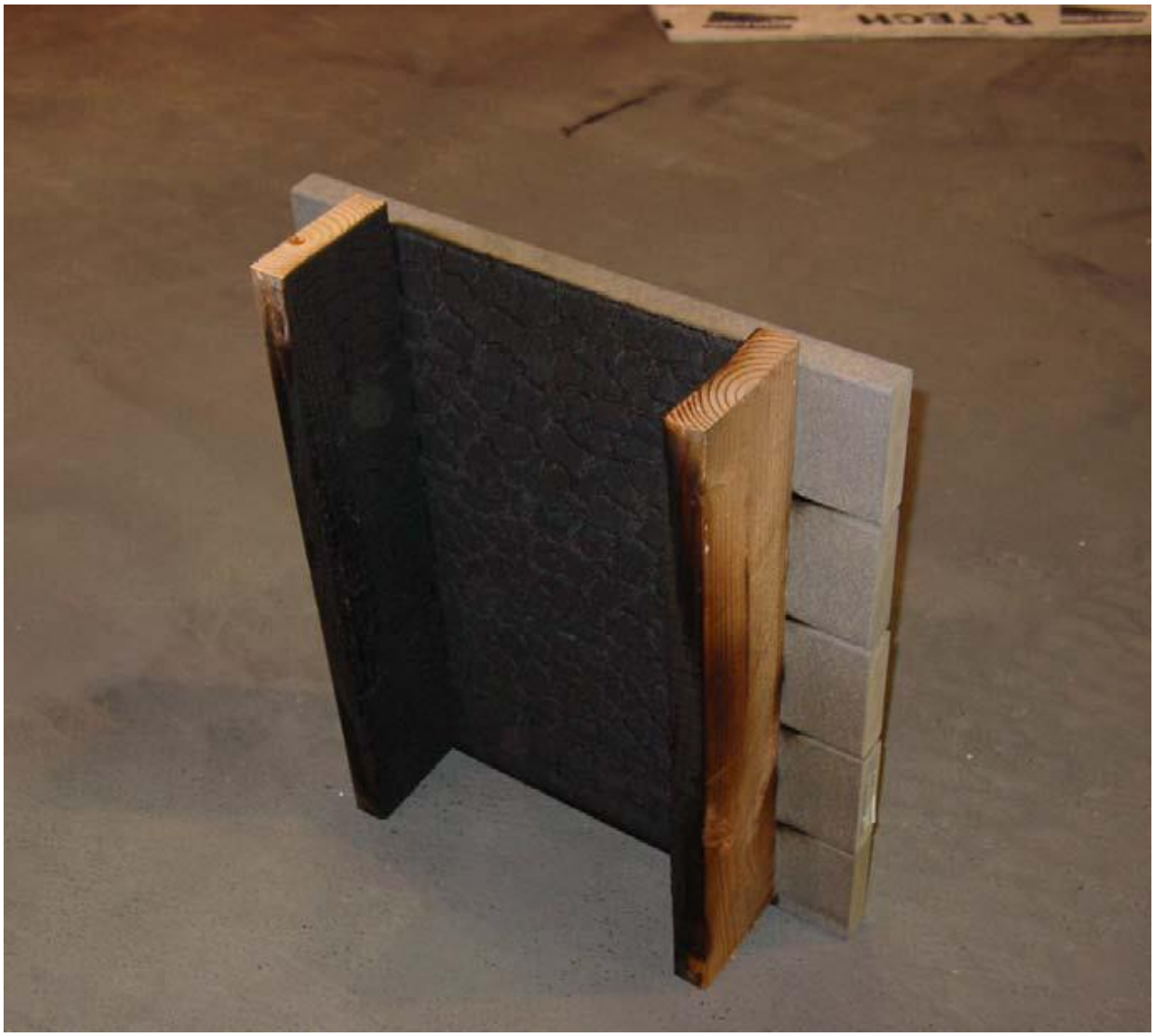


Photo courtesy of Western Fire Center, Inc.

Photos 2 & 3. Result of flame and heat from burner of ASTM E2632 fire test.

After the 3-minutes of flame and heat from the burner, the test deck assembly is observed for 40 minutes and fire performance data is collected during this time period. This test deck assembly was stood on end after the fire test to illustrate the effects of a simulated WUI fire under the deck.



Photos courtesy Western Fire Center, Inc.

Photo 4. Test deck assembly ASTM E2632 fire test failure.

During the ASTM E2632 fire test 40-minute observation period, this test deck assembly had a peak heat release rate in excess of 25 kW/ft^2. This decking material would not meet the criteria for use in a WUI area as it exceeded the proposed maximum peak heat release rate.

Photo courtesy Fiberon,.

Photos 5 & 6. Test deck assembly ASTM E2632 fire test successes.

The fire of these two different test deck assemblies subsided once the burner was turned off at 3 minutes into the test. These decking materials did not exceed the maximum peak heat release rate of 25 kW/ft^2 of this proposal.

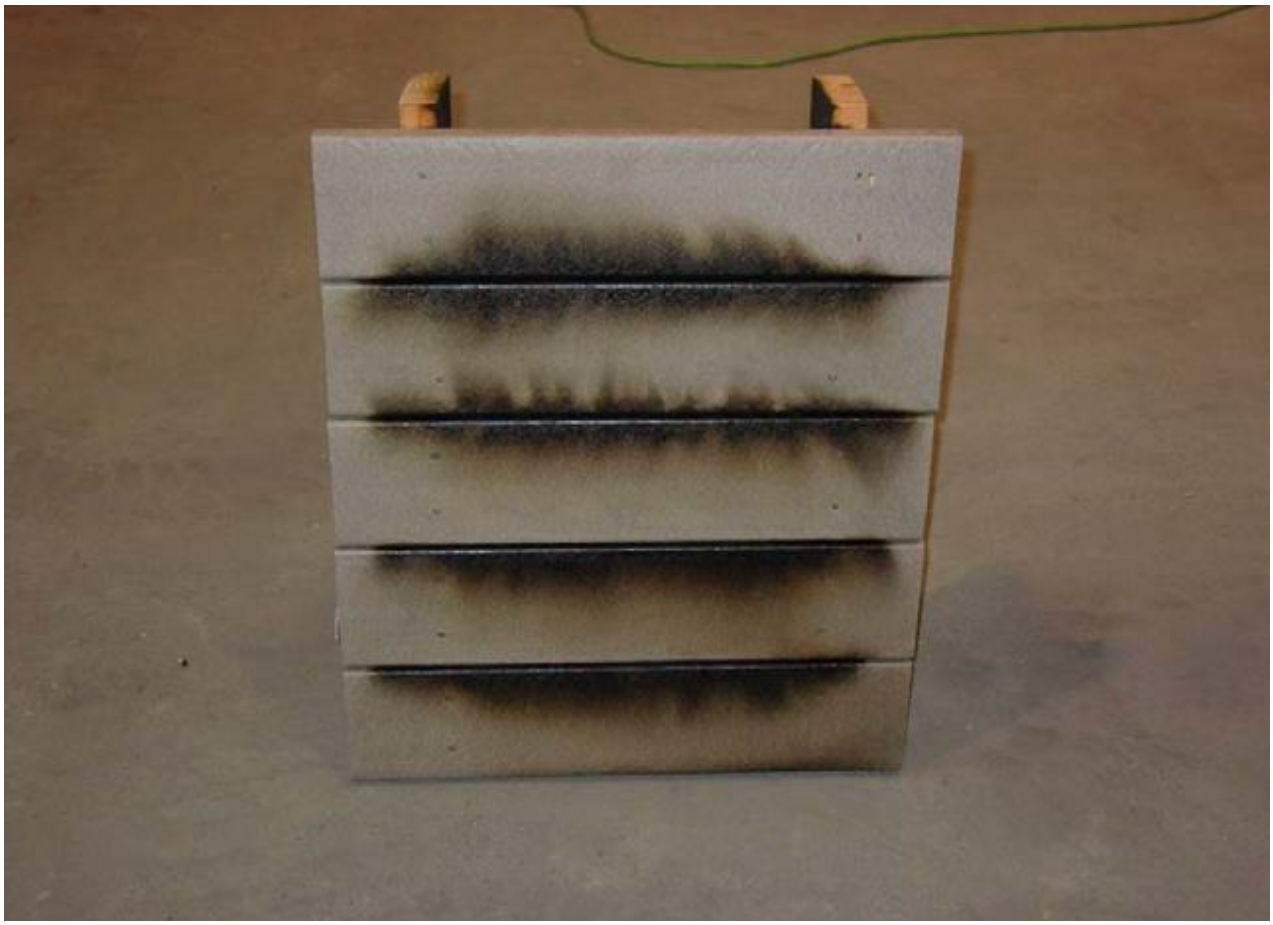


Photo courtesy
Fiberon,.
Photo courtesy Western Fire Center

Cost Impact: Will not increase the cost of construction
Will not increase the cost of construction. This proposal offers an alternative to the current IWUIC requirements.

WUIC5-16 : 504.7-WOESTMAN13423

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: The committee had concerns that the proposed standard is inconsistent with the test standard requirements for wood products.

Assembly Action: **None**

Individual Consideration Agenda

Public Comment 1:

Proponent : John Woestman, representing Kellen Company representing Composite Lumber Manufacturers Association (CLMA) (jwoestman@kellencompany.com) requests Approve as Modified by this Public Comment.

Modify as Follows:

2015 International Wildland-Urban Interface Code

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.
4. ~~Plastic composite deck boards and stair treads which comply with ASTM D7032 and comply with at least one of the methods below:~~
    - 4.1. Weathered in accordance with ASTM D7032 and tested in accordance with ASTM E1354 with a radiant heat flux of 35 kW/m^2 and an electric spark igniter. The weathering shall not decrease the time to ignition by more than 20%, and shall not increase the effective heat of combustion by more than 20%, and shall not increase the peak heat release rate by more than 25%. After demonstrating satisfactory effects of weathering, tested in accordance with ASTM E2632 / E2632M with a peak heat release rate no greater than 25 kW/ft^2 (269 kW/m2).
    - 4.2. After weathering as prescribed by ASTM D7032, tested in accordance with ASTM E2632 / E2632M with a peak heat release rate no greater than 25 kW/ft^2 (269 kW/m^2)..

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/ft^2 (269 kW/m^2), 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 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.
4. ~~Plastic composite deck boards and stair treads which comply with ASTM D7032 and comply with at least one of the methods below:~~
   - 4.1. Weathered in accordance with ASTM D7032 and tested in accordance with ASTM E1354 with a radiant heat flux of 35 kW/m^2 and an electric spark igniter. The weathering shall not decrease the time to ignition by more than 20%, and shall not increase the effective heat of combustion by more than 20%, and shall not increase the peak heat release rate by more than 25%. After demonstrating satisfactory effects of weathering, tested in accordance with ASTM E2632 / E2632M with a peak heat release rate no greater than 25 kW/ft^2 (269 kW/m2).
   - 4.2. After weathering as prescribed by ASTM D7032, tested in accordance with ASTM E2632 / E2632M with a peak heat release rate no greater than 25 kW/ft^2 (269 kW/m^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/ft^2 (269 kW/m^2), 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.

Commenter's Reason: This public comment revises this proposal to align with current requirements of the California Chapter 7A, but with several revisions: This proposal references ASTM E2632 in lieu of the very similar California test standard 12-7A-4A; and this public comment specifies a minimum of 24" above the walking surface 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. Please see the original proposal for pictures of the ASTM E2632 test and additional explanation of this test.

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/ft^2 (269 kW/m^2) 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 w here sustained flaming and progressive fire growth occurs,

presenting an unacceptable ignition hazard to the adjoining structure.

Analysis: Note that Public Comments for WUIC4-16, WUIC5-16 and WUIC7-16 are similar in content and actions on these proposals should be consistent where applicable.

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

Commenter's Reason: This proposal would weaken fire safety because the materials approved by using ASTM E2632 would not have as adequate a fire performance as those approved as either fire retardant treated wood or ignition resistant materials.
The CA SFM standards that were eventually converted into ASTM standards were developed following the 1991 California Oakland Hills fires and were considered when the IWUIC code was developed. The concept of ignition-resistant materials (which represent the current IWUIC requirements) were developed much later when it became clear that added fire safety would be required in the wildland areas and that the CA SFM standards did not provide sufficient fire safety.

The reason given shows that the materials are being exposed to a fire source for just 3 minutes (as opposed to 30 minutes in the extended ASTM E84) and the requirements of ASTM E7032 are that the materials exhbita flame pread index of 200 (as opposed to a flame spread index of 25 and no flame spread beyond 10 and a half feet for ignition resistant materials).

The reason given shows that the proposed materials

Moreover, both fire retardant treated wood and ignition resistant materials must comply with a full test specimen weathering test to ensure that the fire performance remains the same after weathering (for example after rain) while the proposed new sections proposed weathering on a much smaller scale (roughly 4 inches by 4 inches as opposed to 24 feet by 20-24 inches).

Proponent : Joseph Holland, Hoover Treated Wood Products, representing Hoover Treated Wood Products (jholland@frtw.com)

requests Disapprove.

Commenter's Reason: The purpose of the code is to harden the exterior of the structure against a wildfire. The committee action to disapprove was based in part on the fact the inclusion of this standard will allow materials that cannot pass the flame spread requirements of ASTM E84 or ASTM E2768. In addition, the the WUI code requires materials must be tested for a thirty minute duration using E84 or E2768. During that time period the flame front cannot progress more than 10.5 feet beyond the centerline of the burners. Again, materials that cannot pass the the 10.5 foot limitation would be permitted if this standard is recommended for approval.

WUIC5-16

WUIC6-16
IWUIC: 505.5.

Proposed Change as Submitted

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

2015 International Wildland-Urban Interface Code

Add new text as follows:

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

1. Materials *approved* for a minimum of 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.
6. Wall assemblies tested in accordance with ASTM E2707 for 10-minutes direct flame contact exposure provided there is absence of flame penetration through the wall and absence of glowing combustion on the interior surface of the assembly at the end of 70 minutes; 10 minutes of direct flame contact followed by 60 minutes of observation time.

Such material shall extend from the top of the foundation to the underside of the roof sheathing.
Architectural trim, embellishments, roof or wall top cornice projections, rafter ends, fascias, gutters, and eave construction shall not be considered part of the exterior wall and shall comply with other applicable provisions of this code.

Reference standards type: This reference standard is new to the ICC Code Books

Add new standard(s) as follows:

ASTM E2707-15 Standard Test Method for Determining Fire Penetration of Exterior Wall Assemblies Using a Direct Flame Impingement Exposure

Reason: Performance criteria for exterior walls will make sure no material that performs well will be excluded, and conversely that no material which does not

perform will be included. The ASTM standard proposed was developed as a consequence of wild fire experience in the state of California, and mirror the standards of the California State Fire Marshal's office. The propsoed acceptance criteria are consistent with that used for regulation in the State of California. This change would make clause 505.5 functionally equivalent to Clause 707A.3(5), Chapter 7A-Materials and Construction Methods for Exterior Wildfire Exposure of the California Building Code 2013.

Cost Impact: Will not increase the cost of construction
Adds performance stds to existing code consistent with CA IW codes.

WUIC6-16 : 505.5-TYREE11365

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: The committee had concerns that the proposed standard does not consider flame spread and is less stringent than other existing methods listed in the Section.

Assembly Action: **None**

Individual Consideration Agenda

Public Comment 1:

Proponent : Howard Stacy, Priest & Associates Consulting, representing California Redwood Association (howard.stacy@priestassociates.com); David Tyree, representing American Wood Council (dtyree@awc.org) requests Approve as Modified by this Public Comment.

Modify as Follows:

2015 International Wildland-Urban Interface Code

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

1. Materials *approved* for a minimum of 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.
6. Wall assemblies tested in accordance with ASTM E2707 for 10-minutes direct flame contact exposure provided there is absence of flame penetration through the wall and absence of glowing combustion on the interior surface of the assembly at the end of 70 minutes; 10 minutes of direct flame contact followed by 60 minutes of observation time. Prior to testing, the material shall be weathered in accordance with the applicable standard specified for the product.

Such material shall extend from the top of the foundation to the underside of the roof sheathing.
Architectural trim, embellishments, roof or wall top cornice projections, rafter ends, fascias, gutters, and eave construction shall not be considered part of the exterior wall and shall comply with other applicable provisions of this code.

Commenter's Reason:
STACY: This public comment is submitted in support of the addition of ASTM E2707 "Standard Test Method for Determining Fire Penetration of Exterior Wall Assemblies Using a Direct Flame Impingement Exposure", with the conditions of acceptance as set forth in the California State Fire Marshal Standard SFM 12-7A-1, to the
allowances for Exterior Walls listed in IWUIC Section 504.5. ASTM E2707 closely adheres to the test procedures described in 12-7A-1. Through the consensus standardization process, refinements w ere made to SFM 12-7A-1 to provide for an acceptable level of repeatablility (within lab) and reproducibility (between labs). This test method provides a definitive set of procedures for the evaluation and measurement of the resistance to fire penetration (burn-through) into the wall cavity of exterior wall structures from direct flame impingment from the combustion offlaming materials adjacent to the structure. The measurement of fire penetration through the wall (fire resistance) is considered of greater importance than surface flammability (the fire must be prevented from penetrating the structure). The resistance to burn-through penetration of the exterior wall covering or the outside layer of the exterior wall assembly into the wall cavity is

measured by the observation of sustained flaming on the unexposed side of the exterior wall covering, or the presence of sustained smoldering 1 hour after the termination of the open flame exposure.

From fire service field reports, the persistance of smoldering combustion within the wall cavity has led to loss of structures long after they had been considered safe.

Even though noncombustible cladding is prescriptively permitted in the referenced code section, the testing of a fiber cement panel product using the ASTM E2707/12-7A-1 methodology has resulted in test failure either due to flame penetration occurring through a crack in the panel, or by the conduction of heat through the noncombustible panel causing ignition of a stud behind the siding. From this, the test method has demonstrated the ability to screen for a condition where a "prescriptively allowed" product actually failed to meet the test conditions and criteria, providing support to the contention that the addition of the test to the exterior wall allowances presents a sufficient level of rigor and will not detract from the intent of the IWUIC code.

TYREE: Following the October 1991 Oakland Hills Fire, the California Building Standards Commission formed a working group to assist the State Fire Marshal's Office (SFM) conduct fire research and develop regulatory measures to mitigate property damage from Wildland Urban Interface fires. As a result, California Building Code, Chapter 7A-Wildland-Urban Interface Code was created. The provisions and standards contained within Chapter 7A have been used successfully since 2008 in resisting WUI fires. The recently approved ASTM consensus standard E2707 is identical to the test method used for exterior siding in California Building Code, Chapter 7A. This ASTM standard is specifically written to provide a consensus-based test method for accessing the fire performance of an exterior wall assembly under a simulated WUI fire scenario.

Opponents of this proposal stated at the Committee Action Hearings and have contended that there are no pass/fail criteria contained within ASTM E2707. This is true; however, "ASTM POLICY DOES NOT ALLOW FOR ACCEPTANCE CRITERIA IN FIRE TEST STANDARDS". Consensus standards-writing organizations such as ASTM are not in the position to judge the "acceptability" of products; the development of acceptance criteria is the responsibility of the code-writing bodies. The acceptance criteria are explicitly provided within item 6 of this proposal and are consistent with the same criteria found in the California WUI Standard. The fire exposure in ASTM E2707, coupled with the proposed acceptance criteria is a robust fire performance based methology to assess fire

penetration during a WUI event. This methology offers assemblies to be used on the exterior walls that have a higher level of fire protection than would be provided by other wall assemblies currently permitted in this section. As an example, exterior walls constructed with non-combustible exterior wall coverings have been shown to fail the ASTM E2707 test. This in itself supports the fact that the inclusion of ASTM E2707 in this section will not reduce the fire performance of the exterior walls of the current code provisions as claimed by opponents of this proposal. ASTM E2707 is the only test standard which has been created to address Wildland Urban Interface fires on exterior walls.

During the Committee Action Hearings, the committee recommended disapproval of this item because it did not contain any requirements for weathering of the materials prior to testing. The committee was correct in pointing out that ASTM E2707 only recommends a weathering test and does not specifically state a weathering test is required. A sentence has been added to the proposal which requires the wall material to be weathered prior to testing.

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

Commenter's Reason:

This proposal recommends a lowering of fire safety because it can be met by some untreated wood materials, such as redwood and a number of other wood species.

The CA SFM standards that were eventually converted into ASTM standards were developed following the 1991 California Oakland Hills fires and were considered when the IWUIC code was developed. The concept of ignition-resistant materials (which represent the current IWUIC requirements) were developed much later when it became clear that added fire safety would be required in the wildland areas and that the CA SFM standards did not provide sufficient fire safety.

Moreover, both fire retardant treated wood and ignition resistant materials must comply with a weathering test to ensure that the fire performance remains the same after weathering (for example after rain) while the proposed new sections are silent on weathering, meaning that they do not require weathering.

Proponent : Joseph Holland, Hoover Treated Wood Products, representing Hoover Treated Wood Products (jholland@frtw.com) requests Disapprove.

Commenter's Reason: The purpose of the code is to harden the exterior of the structure against a wildfire. The committee action to disapprove was based on the fact the inclusion of this standard will allow materials that cannot pass the flame spread requirements of ASTM E84 or ASTM E2768. In addition, the the WUI code requires materials must be tested for a thirty minute duration using E84 or E2768. During that time period the flame front cannot progress more than 10.5 feet beyond the centerline of the burners. Again, materials that cannot pass the the 10.5 foot limitation would be permitted if this standard is recommended for approval.

WUIC6-16

WUIC7-16

IWUIC: 505.7.

Proposed Change as Submitted

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

2015 International Wildland-Urban Interface Code

Add new text as follows:

505.7 Appendages and projections. ~~*Unenclosed*~~ *Walking surface elements of 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. A minimum of 1-hour fire resistance rated construction
2. Heavy timber construction.
3. ~~*Approved noncombustible*~~ Approved non-combustible materials.
4. ~~Fire-retardant-treated~~ Fire retardant treated wood identified for exterior use and meeting the requirements of Section 2303.2 of the ~~*International Building Code*~~International Building Code.
5. ~~Ignition-resistant~~ Ignition resistant building materials in accordance with Section 503.2.
6. Material that has been tested in accordance with ASTM E2632 and ASTM E2726 and meet the following acceptance criteria:

   6.1 ASTM E2632: Absence of sustained flaming or glowing combustion at the end of a 40-minute observation period: and effective net peak heat release rate of not more than 25kW/ft2 and absence of melting and dripping particles that are still burning when reaching the floor.

   6.2. ASTM E2726: Absence of sustained flaming or glowing combustion at the end of a 40-minute observation period: and absence of melting and dripping particles that are still burning when reaching the floor.
7. Material that has been tested in accordance with ASTM E2632 and ASTM E84 and meet the following acceptance criteria:

   7.1 ASTM E2632: Absence of sustained flaming or glowing combustion at the end of a 40-minute observation period: and effective net peak heat release rate of not more than 25kW/ft2 and absence of melting and dripping particles that are still burning when reaching the floor.

   7.2. ASTM E84: Material shall exhibit a flame spread index not exceeding 75 (Class B).

Reference standards type: This reference standard is new to the ICC Code Books

Add new standard(s) as follows:

ASTM E2726/E2726M - 12a Standard Test Method for Evaluating the Fire-Test-Response of Deck Structures to Burning Brands

Reason: This proposeal regulates the walking surfaces only of unenclosed appendages, since it is the element that would permit the spread of fire, rather than the underlying structure of decks and open porches which are larger in dimension and spaced apart. Investigations from structures and appendages exposed to wildland urban interface fires have not identified framing material for appendages as posing an additional risk. Accordingly, the State of California regulates the walking surface of appendages only.

Proposed alternative 6 would permit decking material that meets the stated acceptance criteria when tested in accordance with the two ASTM deck fire test standards, for under-deck exposure and over-deck brand exposure. Alternative 6 is functionally equivalent to Clause 709A.3(1), Chapter 7A-Materials and Construction Methods for Exterior Wildfire Exposure of the California Building Code 2013. The ASTM under deck fire test standard, E 2632, is already a referenced standard. The ASTM over-deck brand test method, E 2726, proposed to be added to the reference standard list.

Proposed alternative 7 would permit decking material that meets the stated acceptance criteria when tested in accordance with ASTM under-deck fire test standard, and Class B flame spread. Alternative 7 is functionally equivalent to Clause 709A.3(4), Chapter 7A-Materials and Construction Methods for Exterior Wildfire Exposure of the California Building Code 2013. The ASTM under deck fire test standard, E 2632, and ASTM flame spread test standard, E84 are already referenced standards.

ASTM test standards do not set acceptance criteria while the technically equivalent California State Fire Marshal test standards do. The proposed acceptance criteria are those contained in SFM Standards 12-7A-4 (under deck) and 12-7A-5 (over deck).

Cost Impact: Will not increase the cost of construction

No increases will occur using alternates.

WUIC7-16 : 505.7-TYREE11366

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: The committee stated that the proposed new standard does not include walking surfaces and it reduces the current requirements without substantiation. Flame spread on exterior surfaces is not considered. More evidence is required in order to add the newly proposed construction options.

Assembly Motion: **As Submitted**
Online Vote Results: **Failed**
Support: 39.42% (136) Oppose: 60.58% (209)
Assembly Action: **None**

Individual Consideration Agenda

Public Comment 1:

Proponent : Howard Stacy, Priest & Associates Consulting, representing California Redwood Association (howard.stacy@priestassociates.com) requests Approve as Modified by this Public Comment.

Modify as Follows:

2015 International Wildland-Urban Interface Code

504.7.1 Decking. The walking surface of decks, porches, balconies and stairs shall comply with the requirements of this section and be constructed with one of the following materials:

1. Ignition-resistant building materials in accordance with Section 503.2.
2. Fire-retardant-treated wood identified for exterior use and meeting the requirements of Section 2303.2 of the International Building Code.
3. Approved noncombustible materials.
4. Materials that have been tested in accordance with ASTM E2632 and meet the following requirements:

   4.1 Peak heat release rate of not more than 25 kW/ft² when tested in accordance with ASTM E2632 and,

4.2 If abutting an exterior wall, the portion of the exterior wall abutting the walking surface shall be covered with an approved noncombustible or ignition-resistant material to a minimum height of 24 inches above the walking surface.

Commenter's Reason: ASTM Standard E2632 "Standard Test Method for Evaluating the Under-Deck Fire Test Response of Deck Materials" was developed by ASTM Subcommittee E05.14 on External Fire Exposures, part of ASTM International Committee E05 on Fire Standards. This method closely adheres to the California SFM Method 12-7A-4A test procedure. Through the consensus standardization process, the standard procedures described in ASTM E2632 were developed as refinements to the CSFM 12-7A-4A methods to provide for an acceptable level of repeatability (within lab) and reproducibility (between labs). The fundamental elements of the two test methods are identical. The "acceptance criteria" of 12-7A-4A is included in the proposed code change language. The test measures the magnitude of the fire (in terms of peak heat release) both during and after flame exposure. This test is used by a number of major fire testing laboratories.

The major concern about the ignition of decking is the hazard that is presented to the neighboring structure. This method addresses the exposure of a simulated deck assembly to the direct impact of the plume from a burner flame, equivalent in the fire intensity and length of exposure produced by 1 kg of paper trash. The burner flame is situated beneath the test deck structure to simulate a "worst case" exposure configuration. The flame plume completely immerses the underside of the deck assembly, with flames extending vertically through the gaps in the deck boards.

From extensive personal laboratory experience with the testing of many dozens of decking products using this method, it has been consistently observed that products meeting the conditions of acceptance as referenced in the proposed code change produce a limited level of heat release during the flame exposure, with flames self-extinguishing shortly after the flame source is removed. The method successfully differentiates "passing" products from those where sustained flaming and progressive fire growth occurs, presenting an unacceptable ignition hazard to the adjoining structure.

Analysis: Note that Public Comments for WUIC4-16, WUIC5-16 and WUIC7-16 are similar in content and actions on these proposals should be consistent where

applicable.

Public Comment 2:

Proponent : David Tyree, representing American Wood Council (dtyree@awc.org) requests Approve as Modified by this Public Comment.

Modify as Follows:

2015 International Wildland-Urban Interface Code

504.7.1 Decking The walking surface material of decks, porches, balconies and stairs shall be constructed with one of the following materials:

1. Ignition-resistant building materials in accordance with Section 503.2.
2. Fire-retardant-treated wood identified for exterior use and meeting the requirements of Section 2303.2 of the *International Building Code*.
3. Approved non-combustible materials.
4. Materials that have been tested in accordance with ASTM E2632 and meet following requirements:
   - 4.1. Peak heat release rate of not more than 25kW/ft2 when tested in accordance with ASTM E2632 and;
   - 4.2. If abutting an exterior wall, the portion of the exterior wall abutting the walking surface shall be covered with an approved non-combustible or ignition-resistant material to a minimum height of 24 inches above the walking surface

505.7 Appendages and projections. ~~*Walking surface elements of unenclosed*~~ *Unenclosed accessory structures* attached to buildings with habitable spaces and projections~~, such as decks,~~ shall be constructed of one of the following:

1. A minimum of 1-hour fire resistance rated construction
2. Heavy timber construction.
3. Approved non-combustible materials.
4. Fire retardant treated wood identified for exterior use and meeting the requirements of Section 2303.2 of the ~~International Building Code~~*International Building Code*.
5. Ignition resistant building materials in accordance with Section 503.2.
6. ~~Material that has been tested in accordance with ASTM E2632 and ASTM E2726 and meet the following acceptance criteria:~~

   ~~6.1 ASTM E2632: Absence of sustained flaming or glowing combustion at the end of a 40-minute observation period: and effective net peak heat release rate of not more than 25kW/ft2 and absence of melting and~~

~~dripping particles that are still burning when reaching the floor.~~

~~6.2. ASTM E2726: Absence of sustained flaming or glowing combustion at the end of a 40-minute observation period: and absence of melting and dripping particles that are still burning when reaching the floor.~~

~~7. Material that has been tested in accordance with ASTM E2632 and ASTM E84 and meet the following acceptance criteria:~~

~~7.1 ASTM E2632: Absence of sustained flaming or glowing combustion at the end of a 40-minute observation period: and effective net peak heat release rate of not more than 25kW/ft2 and absence of melting and dripping particles that are still burning when reaching the floor.~~

~~7.2. ASTM E84: Material shall exhibit a flame spread index not exceeding 75 (Class B).~~

Commenter's Reason: ASTM Standard E2632 "Standard Test Method for Evaluating the Under-Deck Fire Test Response of Deck Materials" was developed by ASTM Subcommittee E05.14 on External Fire Exposures, part of ASTM International Committee E05 on Fire Standards. This test method is identical to the California SFM Method 12-7A-4A test procedure. Opponents of this proposal stated at the Committee Action Hearings that there is no pass/fail criteria contained in ASTM E2632. This is true. However, "ASTM POLICY DOES NOT ALLOW FOR ACCEPTANCE CRITERIA IN FIRE TEST STANDARDS". Consensus standards writing organizations such as ASTM are not in the position to judge the "acceptability" of products; the development of acceptance criteria is the responsibility of the code-writing bodies. Consensus standards-writing organizations do not wish to usurp the code-writing bodies' authority to develop "acceptance criteria". The acceptance criterion provided in item 4.1 of this proposal are consistent with the same criterion found in the California WUI Standard 12-7A-4A. The test measures the magnitude of the fire (in terms of peak heat release) both during and after flame exposure. This test is used by a number of major fire testing laboratories.

The fire exposure in ASTM E2632, coupled with the proposed acceptance criterion provide a performance-based methodology to assess fire performance of exterior decks during a WUI fire event. Restrictions on the lower 24 inches of an abutting exterior wall surface to be required to have a non-combustible or iginition-resistant surface is additionally required to address where burning embers may accumulate at the intersection of the walking surface and, if any, the abutting exterior wall.

Analysis: Note that Public Comments for WUIC4-16, WUIC5-16 and WUIC7-16 are similar in content and actions on these proposals should be consistent where applicable.

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

Commenter's Reason: This proposal recommends a lowering of fire safety because it can be met by some untreated wood materials, such as redwood and a number of other wood species. As an example of the disparity with the earlier requirements, both items 4 and 5 (fire retardant treated wood and ignition resistant materials) require materials that meet the "extended" ASTM E84 test (30 minute test) with a flame spread index of 25 and a flame front that does not progress more than 10 and a half feet beyond the centerline of the burners. On the other hand item 7 states that the requirements for ASTM E84 (and using the 10 minute test duration only) are a flame spread index of 75 (much more than 25).
Moreover, both fire retardant treated wood and ignition resistant materials must comply with a weathering test to ensure that the fire performance remains the same after weathering (for example after rain) while the proposed new sections are silent on weathering, meaning that they do not require weathering.

The CA SFM standards that were eventually converted into ASTM standards were developed following the 1991 California Oakland Hills fires and were considered when the IWUIC code was developed. The concept of ignition-resistant materials (which represent the current IWUIC requirements) were developed much later when it became clear that added fire safety would be required in the wildland areas and that the CA SFM standards did not provide sufficient fire safety.

Proponent : Joseph Holland, Hoover Treated Wood Products, representing Hoover Treated Wood Products (jholland@frtw.com) requests Disapprove.

Commenter's Reason: The proponent asked for online assembly action. The committee action was overwhelming sustained 61 percent to 39 percent by the online voters..

The purpose of the code is to harden the exterior of the structure against a wildfire. The committee action to disapprove was based in part on the fact the inclusion of this standard will allow materials that cannot pass the flame spread requirements of ASTM E84 or ASTM E2768. In addition, the the WUI code requires materials must be tested for a thirty minute duration using E84 or E2768. During that time period the flame front cannot progress more than 10.5 feet beyond the centerline of the burners. Again, materials that cannot pass the the 10.5 foot limitation would be permitted if this standard is recommended for approval.

WUIC7-16