

NFPA[®]

703

**Standard for
Fire-Retardant–Treated Wood
and Fire-Retardant Coatings
for Building Materials**

2018



IMPORTANT NOTICES AND DISCLAIMERS CONCERNING NFPA® STANDARDS

NOTICE AND DISCLAIMER OF LIABILITY CONCERNING THE USE OF NFPA STANDARDS

NFPA® codes, standards, recommended practices, and guides (“NFPA Standards”), of which the document contained herein is one, are developed through a consensus standards development process approved by the American National Standards Institute. This process brings together volunteers representing varied viewpoints and interests to achieve consensus on fire and other safety issues. While the NFPA administers the process and establishes rules to promote fairness in the development of consensus, it does not independently test, evaluate, or verify the accuracy of any information or the soundness of any judgments contained in NFPA Standards.

The NFPA disclaims liability for any personal injury, property, or other damages of any nature whatsoever, whether special, indirect, consequential or compensatory, directly or indirectly resulting from the publication, use of, or reliance on NFPA Standards. The NFPA also makes no guaranty or warranty as to the accuracy or completeness of any information published herein.

In issuing and making NFPA Standards available, the NFPA is not undertaking to render professional or other services for or on behalf of any person or entity. Nor is the NFPA undertaking to perform any duty owed by any person or entity to someone else. Anyone using this document should rely on his or her own independent judgment or, as appropriate, seek the advice of a competent professional in determining the exercise of reasonable care in any given circumstances.

The NFPA has no power, nor does it undertake, to police or enforce compliance with the contents of NFPA Standards. Nor does the NFPA list, certify, test, or inspect products, designs, or installations for compliance with this document. Any certification or other statement of compliance with the requirements of this document shall not be attributable to the NFPA and is solely the responsibility of the certifier or maker of the statement.

REVISION SYMBOLS IDENTIFYING CHANGES FROM THE PREVIOUS EDITION

Text revisions are shaded. A **Δ** before a section number indicates that words within that section were deleted and a **Δ** to the left of a table or figure number indicates a revision to an existing table or figure. When a chapter was heavily revised, the entire chapter is marked throughout with the **Δ** symbol. Where one or more sections were deleted, a **•** is placed between the remaining sections. Chapters, annexes, sections, figures, and tables that are new are indicated with an **N**.

Note that these indicators are a guide. Rearrangement of sections may not be captured in the markup, but users can view complete revision details in the First and Second Draft Reports located in the archived revision information section of each code at www.nfpa.org/docinfo. Any subsequent changes from the NFPA Technical Meeting, Tentative Interim Amendments, and Errata are also located there.

REMINDER: UPDATING OF NFPA STANDARDS

Users of NFPA codes, standards, recommended practices, and guides (“NFPA Standards”) should be aware that NFPA Standards may be amended from time to time through the issuance of a Tentative Interim Amendment (TIA) or corrected by Errata. An official NFPA Standard at any point in time consists of the current edition of the document together with any TIAs and Errata then in effect.

To determine whether an NFPA Standard has been amended through the issuance of Tentative Interim Amendments or corrected by Errata, go to www.nfpa.org/docinfo to choose from the list of NFPA Standards or use the search feature to select the NFPA Standard number (e.g., NFPA 13). The document information page provides up-to-date document-specific information as well as postings of all existing TIAs and Errata. It also includes the option to register for an “Alert” feature to receive an automatic email notification when new updates and other information are posted regarding the document.

IMPORTANT NOTICES AND DISCLAIMERS CONCERNING NFPA® STANDARDS

ADDITIONAL NOTICES AND DISCLAIMERS

Updating of NFPA Standards

Users of NFPA codes, standards, recommended practices, and guides (“NFPA Standards”) should be aware that these documents may be superseded at any time by the issuance of new editions or may be amended from time to time through the issuance of Tentative Interim Amendments or corrected by Errata. An official NFPA Standard at any point in time consists of the current edition of the document together with any Tentative Interim Amendments and any Errata then in effect. In order to determine whether a given document is the current edition and whether it has been amended through the issuance of Tentative Interim Amendments or corrected through the issuance of Errata, consult appropriate NFPA publications such as the National Fire Codes® Subscription Service, visit the NFPA website at www.nfpa.org, or contact the NFPA at the address listed below.

Interpretations of NFPA Standards

A statement, written or oral, that is not processed in accordance with Section 6 of the Regulations Governing the Development of NFPA Standards shall not be considered the official position of NFPA or any of its Committees and shall not be considered to be, nor be relied upon as, a Formal Interpretation.

Patents

The NFPA does not take any position with respect to the validity of any patent rights referenced in, related to, or asserted in connection with an NFPA Standard. The users of NFPA Standards bear the sole responsibility for determining the validity of any such patent rights, as well as the risk of infringement of such rights, and the NFPA disclaims liability for the infringement of any patent resulting from the use of or reliance on NFPA Standards.

NFPA adheres to the policy of the American National Standards Institute (ANSI) regarding the inclusion of patents in American National Standards (“the ANSI Patent Policy”), and hereby gives the following notice pursuant to that policy:

NOTICE: The user’s attention is called to the possibility that compliance with an NFPA Standard may require use of an invention covered by patent rights. NFPA takes no position as to the validity of any such patent rights or as to whether such patent rights constitute or include essential patent claims under the ANSI Patent Policy. If, in connection with the ANSI Patent Policy, a patent holder has filed a statement of willingness to grant licenses under these rights on reasonable and nondiscriminatory terms and conditions to applicants desiring to obtain such a license, copies of such filed statements can be obtained, on request, from NFPA. For further information, contact the NFPA at the address listed below.

Law and Regulations

Users of NFPA Standards should consult applicable federal, state, and local laws and regulations. NFPA does not, by the publication of its codes, standards, recommended practices, and guides, intend to urge action that is not in compliance with applicable laws, and these documents may not be construed as doing so.

Copyrights

NFPA Standards are copyrighted. They are made available for a wide variety of both public and private uses. These include both use, by reference, in laws and regulations, and use in private self-regulation, standardization, and the promotion of safe practices and methods. By making these documents available for use and adoption by public authorities and private users, the NFPA does not waive any rights in copyright to these documents.

Use of NFPA Standards for regulatory purposes should be accomplished through adoption by reference. The term “adoption by reference” means the citing of title, edition, and publishing information only. Any deletions, additions, and changes desired by the adopting authority should be noted separately in the adopting instrument. In order to assist NFPA in following the uses made of its documents, adopting authorities are requested to notify the NFPA (Attention: Secretary, Standards Council) in writing of such use. For technical assistance and questions concerning adoption of NFPA Standards, contact NFPA at the address below.

For Further Information

All questions or other communications relating to NFPA Standards and all requests for information on NFPA procedures governing its codes and standards development process, including information on the procedures for requesting Formal Interpretations, for proposing Tentative Interim Amendments, and for proposing revisions to NFPA standards during regular revision cycles, should be sent to NFPA headquarters, addressed to the attention of the Secretary, Standards Council, NFPA, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101; email: stds_admin@nfpa.org.

For more information about NFPA, visit the NFPA website at www.nfpa.org. All NFPA codes and standards can be viewed at no cost at www.nfpa.org/docinfo.

Copyright © 2017 National Fire Protection Association®. All Rights Reserved.

NFPA® 703

Standard for

Fire Retardant–Treated Wood and Fire-Retardant Coatings for Building Materials

2018 Edition

This edition of NFPA 703, *Standard for Fire-Retardant–Treated Wood and Fire-Retardant Coatings for Building Materials*, was prepared by the Technical Committee on Structures, Construction, and Materials. It was issued by the Standards Council on August 1, 2017, with an effective date of August 21, 2017, and supersedes all previous editions.

This edition of NFPA 703 was approved as an American National Standard on August 21, 2017.

Origin and Development of NFPA 703

In 1957, the Committee on Flameproofing and Preservative Treatments began to develop a standard for the flameproofing of wood. It soon became clear to the committee that the fire retardant–coating industry was expanding considerably and that fire-retardant admixtures of plastics and other building materials required coverage in the standard. Thus, in its many subsequent meetings, the committee reexamined its approach and expanded the standard to cover all fire-retardant treatments.

The standard was tentatively adopted at the 1960 Annual Meeting and was submitted for final adoption at the 1961 Annual Meeting.

The 1979 edition of NFPA 703, *Fire Retardant Impregnated Wood and Fire Retardant Coatings for Building Materials*, superseded the 1961 edition. The change in title was necessary to more adequately cover the subjects included in the text of the standard. The principal changes in the 1979 edition included improved definitions for fire-retardant coatings.

The 1985 edition included the addition of a new chapter that listed referenced publications whose use was mandated within the standard.

In the 1992 edition, the committee provided clarification in several areas defining fire resistance.

The 1995 edition was a reconfirmation with some editorial changes.

The 2000 edition reflected changes in the methods by which treated wood products are evaluated. Other changes were format driven to reflect the *Manual of Style for NFPA Technical Committee Documents*.

In the 2006 edition, technical modifications brought the document into agreement with the 2003/2006 editions of *NFPA 5000, Building Construction and Safety Code*, on the topic of fire retardant–treated wood. Additional changes were made to the format in compliance with the latest edition of the *Manual of Style for NFPA Technical Committee Documents*.

The changes in the 2009 edition were editorial in nature.

The 2012 edition clarified the use of common terms in the document, including the definition of *fire-retardant–treated wood*.

The 2015 edition revised requirements for fire-retardant-treated wood and updated referenced documents.

The 2018 edition clarifies requirements for fire–retardant–treated wood. Requirements that appeared in definitions have been moved to other locations for compliance with the *Manual of Style for NFPA Technical Committee Documents* and reference documents have been updated.

Technical Committee on Structures, Construction, and Materials

Moriel E. Kaplan, *Chair*

JENSEN HUGHES/AON Fire Protection Engineering, IL [SE]
Rep. JENSEN HUGHES

Nasser Ahmed Al Zeyara, Qatar Civil Defense, Qatar [E]
Benjamin H. Caldwell, Skidmore, Owings & Merrill LLP, NY [SE]
David S. Collins, The Preview Group, Inc., OH [SE]
Rep. American Institute of Architects
Jeffrey Feid, State Farm Insurance Company, IL [I]
William E. Fitch, Phyrefish.com, FL [SE]
Mark S. Graham, National Roofing Contractors Association, IL [IM]
John C. Harrington, FM Global, MA [I]
Marcelo M. Hirschler, GBH International, CA [SE]
Joseph T. Holland, Hoover Treated Wood Products, FL [M]
Karl D. Houser, EBL Engineers, LLC, MD [IM]
Rep. Association of the Wall and Ceiling Industries International

Tin Htway, Town of Westborough, MA [E]
Xianxu (Sherri) Hu, Verisk Analytics/Insurance Services Office, Inc., NJ [I]
Bonnie E. Manley, American Iron and Steel Institute, MA [M]
Thomas W. McKeon, Everest National Insurance, NJ [I]
Scott Nesvold, Crane Engineering, MN [SE]
Dennis A. Richardson, American Wood Council, CA [M]
Jason D. Rotondo, CODEpliance Inc., MA [M]
Michael Schmeida, Gypsum Association, OH [M]
Joseph H. Versteeg, Versteeg Associates, CT [E]
Rep. International Fire Marshals Association
Peter J. Willse, XL Global Asset Protection Services, CT [I]

Alternates

Farid Alfawakhiri, American Iron and Steel Institute, IL [M]
(Alt. to Bonnie E. Manley)
David G. Bueche, Hoover Treated Wood Products, CO [M]
(Alt. to Joseph T. Holland)
Keith Calder, Sereca/JENSEN HUGHES, Canada [SE]
(Alt. to Moriel E. Kaplan)

Richard J. Davis, FM Global, MA [I]
(Alt. to John C. Harrington)
David P. Tyree, American Wood Council, CO [M]
(Alt. to Dennis A. Richardson)

Valerie Boutin, NFPA Staff Liaison

This list represents the membership at the time the Committee was balloted on the final text of this edition. Since that time, changes in the membership may have occurred. A key to classifications is found at the back of the document.

NOTE: Membership on a committee shall not in and of itself constitute an endorsement of the Association or any document developed by the committee on which the member serves.

Committee Scope: This committee shall have primary responsibility for documents on the protection of human life and property from fire and environmental loads through the selection and design of structural elements and assemblies; construction techniques and methodologies; and on the application of building materials used in the construction of buildings, structures, and related facilities.

Contents

Chapter 1 Administration	703- 4	4.2 Interior Applications.	703- 6
1.1 Scope.	703- 4	4.3 Exposure to Weather or Damp or Wet Locations.	703- 6
1.2 Purpose. (Reserved)	703- 4	4.4 Moisture Content.	703- 6
1.3 Application. (Reserved)	703- 4	4.5 Labeling.	703- 6
1.4 Retroactivity.	703- 4		
1.5 Equivalency.	703- 4	Chapter 5 Fire-Retardant Coatings for Building	
1.6 Units.	703- 4	Materials	703- 6
Chapter 2 Referenced Publications	703- 4	5.1 Application.	703- 6
2.1 General.	703- 4	5.2 General.	703- 6
2.2 NFPA Publications. (Reserved)	703- 4	5.3 Tests.	703- 6
2.3 Other Publications.	703- 4	5.4 Maintenance of Protection.	703- 7
2.4 References for Extracts in Mandatory Sections. (Reserved)	703- 5	5.5 Labeled.	703- 7
Chapter 3 Definitions	703- 5	Annex A Explanatory Material	703- 7
3.1 General.	703- 5	Annex B Informational References	703- 7
3.2 NFPA Official Definitions.	703- 5	Index	703- 8
3.3 General Definitions.	703- 5		
Chapter 4 Fire-Retardant-Treated Wood	703- 5		
4.1 Application.	703- 5		

NFPA 703

Standard for

Fire Retardant-Treated Wood and Fire-Retardant Coatings for Building Materials

2018 Edition

IMPORTANT NOTE: This NFPA document is made available for use subject to important notices and legal disclaimers. These notices and disclaimers appear in all publications containing this document and may be found under the heading “Important Notices and Disclaimers Concerning NFPA Standards.” They can also be viewed at www.nfpa.org/disclaimers or obtained on request from NFPA.

UPDATES, ALERTS, AND FUTURE EDITIONS: New editions of NFPA codes, standards, recommended practices, and guides (i.e., NFPA Standards) are released on scheduled revision cycles. This edition may be superseded by a later one, or it may be amended outside of its scheduled revision cycle through the issuance of Tentative Interim Amendments (TIAs). An official NFPA Standard at any point in time consists of the current edition of the document, together with all TIAs and Errata in effect. To verify that this document is the current edition or to determine if it has been amended by TIAs or Errata, please consult the National Fire Codes® Subscription Service or the “List of NFPA Codes & Standards” at www.nfpa.org/docinfo. In addition to TIAs and Errata, the document information pages also include the option to sign up for alerts for individual documents and to be involved in the development of the next edition.

NOTICE: An asterisk (*) following the number or letter designating a paragraph indicates that explanatory material on the paragraph can be found in Annex A.

A reference in brackets [] following a section or paragraph indicates material that has been extracted from another NFPA document. As an aid to the user, the complete title and edition of the source documents for extracts in mandatory sections of the document are given in Chapter 2 and those for extracts in informational sections are given in Annex B. Extracted text may be edited for consistency and style and may include the revision of internal paragraph references and other references as appropriate. Requests for interpretations or revisions of extracted text shall be sent to the technical committee responsible for the source document.

Information on referenced publications can be found in Chapter 2 and Annex B.

Chapter 1 Administration

1.1* Scope. This standard provides criteria for defining and identifying fire-retardant-treated wood and fire-retardant-coated building materials.

1.2 Purpose. (Reserved)**1.3 Application. (Reserved)**

1.4 Retroactivity. Unless otherwise specified, the provisions of this standard shall not apply to facilities, equipment, structures, or installations that existed or were approved for construction or installation prior to the effective date of the standard. Where specified, the provisions of this standard shall be retroactive.

1.5 Equivalency.

1.5.1 Nothing in this standard is intended to prevent the use of systems, methods, or devices of equivalent or superior quality, strength, fire resistance, effectiveness, durability, and safety over those prescribed by this standard.

1.5.2 Technical documentation shall be submitted to the authority having jurisdiction to demonstrate equivalency. The system, method, or device shall be approved for the intended purpose by the authority having jurisdiction.

1.6 Units.

1.6.1 SI Units. Metric units in this standard are in accordance with the modernized metric system known as the International System of Units (SI).

1.6.2 Primary and Equivalent Values. If a value for a measurement as given in this standard is followed by an equivalent value in other units, the first stated value shall be regarded as the requirement. A given equivalent value might be approximate.

Chapter 2 Referenced Publications

2.1 General. The documents or portions thereof listed in this chapter are referenced within this standard and shall be considered part of the requirements of this document.

2.2 NFPA Publications. (Reserved)**2.3 Other Publications.**

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

ASTM D2898, *Standard Test Methods for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing*, 2010.

ASTM D3201/D3201M, *Standard Test Method for Hygroscopic Properties of Fire-Retardant Wood and Wood-Based Products*, 2013.

ASTM D5516, *Standard Test Method for Evaluating the Flexural Properties of Fire-Retardant Treated Softwood Plywood Exposed to Elevated Temperatures*, 2009.

ASTM D5664, *Standard Test Method for Evaluating the Effects of Fire-Retardant Treatments and Elevated Temperatures on Strength Properties of Fire-Retardant Treated Lumber*, 2010.

ASTM D6305, *Standard Practice for Calculating Bending Strength Design Adjustment Factors for Fire-Retardant-Treated Plywood Roof Sheathing*, (2015 e1).

ASTM D6841, *Standard Practice for Calculating Design Value Treatment Adjustment Factors for Fire-Retardant-Treated Lumber*, 2016.

ASTM E2768, *Standard Test Method for Extended Duration Surface Burning Characteristics of Building Materials (30 min Tunnel Test)*, 2011.

ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, 2015b.

2.3.2 UL Publications. Underwriters Laboratories, Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096.

ANSI/UL 723, *Standard for Safety for Test for Surface Burning Characteristics of Building Materials*, 2008, revised 2013.

2.3.3 Other Publications.

Merriam-Webster's Collegiate Dictionary, 11th edition, Merriam-Webster, Inc., Springfield, MA, 2003.

2.4 References for Extracts in Mandatory Sections. (Reserved)

Chapter 3 Definitions

3.1 General. The definitions contained in this chapter shall apply to the terms used in this standard. Where terms are not defined in this chapter or within another chapter, they shall be defined using their ordinarily accepted meanings within the context in which they are used. *Merriam-Webster's Collegiate Dictionary*, 11th edition, shall be the source for the ordinarily accepted meaning.

3.2 NFPA Official Definitions.

3.2.1* Approved. Acceptable to the authority having jurisdiction.

3.2.2* Authority Having Jurisdiction (AHJ). An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure.

3.2.3 Labeled. Equipment or materials to which has been attached a label, symbol, or other identifying mark of an organization that is acceptable to the authority having jurisdiction and concerned with product evaluation, that maintains periodic inspection of production of labeled equipment or materials, and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner.

3.2.4* Listed. Equipment, materials, or services included in a list published by an organization that is acceptable to the authority having jurisdiction and concerned with evaluation of products or services, that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services, and whose listing states that either the equipment, material, or service meets appropriate designated standards or has been tested and found suitable for a specified purpose.

3.2.5 Shall. Indicates a mandatory requirement.

3.2.6 Should. Indicates a recommendation or that which is advised but not required.

3.2.7 Standard. An NFPA Standard, the main text of which contains only mandatory provisions using the word "shall" to indicate requirements and that is in a form generally suitable for mandatory reference by another standard or code or for adoption into law. Nonmandatory provisions are not to be considered a part of the requirements of a standard and shall be located in an appendix, annex, footnote, informational note, or other means as permitted in the NFPA Manuals of Style. When used in a generic sense, such as in the phrase "standards development process" or "standards development activities," the term "standards" includes all NFPA Standards,

including Codes, Standards, Recommended Practices, and Guides.

3.3 General Definitions.

3.3.1* Fire-Retardant Coating. A coating that reduces the flame spread index of Douglas fir, or of any other tested combustible surface to which it is applied, when tested in accordance with a test for assessing surface burning characteristics.

3.3.2 Fire-Retardant-Treated Wood. A wood product impregnated with chemical by a pressure process or other means during manufacture, treated to exhibit reduced surface-burning characteristics and resist propagation of fire.

Chapter 4 Fire-Retardant-Treated Wood

4.1 Application. These requirements shall apply to fire-retardant-treated wood.

4.1.1 Fire-Retardant-Treated Wood. Fire-retardant-treated wood shall be a wood product impregnated with chemical by a pressure process or other means during manufacture meeting the requirements in 4.1.1.2 through 4.1.1.6.

4.1.1.1 Materials treated by means other than those specified in 4.1.1 shall be considered a fire-retardant-coated material and shall meet the requirements of fire-retardant coatings in Chapter 5.

4.1.1.2 Fire-retardant-treated wood shall be tested in accordance with ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, Standard Test Method for Surface Burning Characteristics of Building Materials, or ANSI/UL 723, *Standard for Safety for Test for Surface Burning Characteristics of Building Materials*.

4.1.1.3 Fire-retardant-treated wood shall have a listed flame spread index of 25 or less.

4.1.1.4 Fire-retardant-treated wood shall not show evidence of significant progressive combustion when the test is continued for an additional 20-minute period.

4.1.1.5 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 test.

4.1.1.6 Wood structural panels shall be permitted to tested only on the front and back faces.

N 4.1.1.7 Wood products that have been tested on the front and back faces in accordance with ASTM E2768, *Standard Test Method for Extended Duration Surface Burning Characteristics of Building Materials (30 min Tunnel Test)*, with a ripped or cut longitudinal gap of 1/8 in. (3.2 mm), listed to meet the requirements of 4.1.1.3, show no evidence of significant progressive combustion, and 4.1.1.5, shall be considered fire-retardant-treated wood.

4.1.2 Fire-Retardant-Treated Wood Treatment.

4.1.2.1 Pressure Process. For wood products impregnated with chemicals by a pressure process, the process shall be performed in closed vessels under gauge pressures not less than 50 psi (345 kPa). The treatment shall provide permanent protection to all surfaces of the wood product.

4.1.2.2 Other Means During Manufacture.

N 4.1.2.2.1 For wood products impregnated with chemical by other means during manufacture, the treatment shall be an integral part of the manufacturing process of the wood product.

N 4.1.2.2.2 The treatment shall provide permanent protection to all surfaces of the wood product.

4.2 Interior Applications. Interior fire-retardant-treated wood shall have a moisture content of not over 28 percent when tested in accordance with the procedures of ASTM D3201/D3201M at 92 percent relative humidity. Interior fire-retardant-treated wood shall be tested in accordance with 4.2.1 or 4.2.2.

4.2.1 Wood Structural Panels. Adjustment to design values for wood structural panels shall be in accordance with the following:

- (1) The effect of the treatment, the method of redrying after treatment, and the exposure to high temperatures and high humidities on the flexure properties of fire-retardant-treated softwood plywood shall be determined in accordance with ASTM D5516.
- (2) The test data developed by ASTM D5516 shall be used to develop adjustment factors or maximum loads and spans, or both, for untreated plywood design values in accordance with ASTM D6305.
- (3) Each manufacturer shall publish the allowable maximum loads and spans for service as floor and roof sheathing for their treatment.

4.2.2 Lumber. Adjustment to design values for lumber shall be in accordance with the following:

- (1) For each species of wood treated, the effect of the treatment, the method of redrying after treatment, and the exposure to high temperatures and high humidities on the allowable design properties of fire-retardant-treated lumber shall be determined in accordance with ASTM D5664.
- (2) The test data developed by ASTM D5664 shall be used to develop modification factors for use at or near room temperature and at elevated temperatures and humidity in accordance with ASTM D6841.
- (3) Each manufacturer shall publish the modification factors for service at ambient temperatures of up to 100°F (37.8°C) and for service as roof framing.
- (4) The roof framing modification factors shall take into consideration the climatological location.

4.3 Exposure to Weather or Damp or Wet Locations. Where fire-retardant-treated wood is exposed to weather or damp or wet locations, it shall be identified as “exterior” to indicate that there is no increase in the listed flame spread index when subjected to ASTM D2898, *Standard Test Methods for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing*, (Method A). (See 3.3.2, *Fire-Retardant-Treated Wood*.)

4.4 Moisture Content.

4.4.1 Fire-retardant-treated wood shall have a moisture content of 19 percent or less for lumber and 15 percent or less for wood structural panels before use.

4.4.2 For fire-retardant-treated wood dried after treatment, the temperatures shall not exceed the temperatures used in

drying the lumber and plywood submitted for the testing described in 4.2.1 or 4.2.2.

4.4.3 Fire-retardant-treated wood that is air-dried after treatment (ADAT) shall be protected from the weather.

4.5 Labeling. Fire-retardant-treated lumber and wood structural panels shall be labeled and listed with the following information:

- (1) Identification mark of an approved agency that lists materials in accordance with Chapter 3 (See 3.2.4, *Listed*.)
- (2) Identification of the treating manufacturer
- (3) Name of the fire-retardant treatment
- (4) Species of wood treated
- (5) End use of the product
- (6) Flame spread index and smoke developed index
- (7) Method of drying after treatment
- (8) Verification of conformance with appropriate standards in accordance with Sections 4.2 through 4.4
- (9) The words “No increase in the listed classification when subjected to the Standard Rain Test [ASTM D2898 (Method A)],” for fire-retardant-treated wood exposed to weather or to damp or wet locations

Chapter 5 Fire-Retardant Coatings for Building Materials

5.1* Application. These requirements shall apply to fire-retardant paints and other surface coatings applied to building materials used for interior finish to reduce flame spread or smoke development or both.

5.2 General.

5.2.1* Fire-retardant coatings shall remain stable and adhere to the material under all atmospheric conditions to which the material is exposed.

5.2.2 A fire-retardant coating shall not be used for unprotected outdoor installations unless labeled for such installations.

5.2.3 The classification of fire-retardant coatings shall apply only when the coating is applied at the rates of coverage and to the applicable substrate, building material, or species of wood indicated on the test report when the coating is applied in accordance with the manufacturer's directions supplied with the container.

5.2.4 Fire-retardant coatings shall be applied in accordance with the manufacturer's directions.

5.2.5 The application shall be certified by the applicator as being in conformance with the manufacturer's directions for application.

5.2.6 A fire-retardant coating shall not be coated over with any material unless both the fire-retardant coating and the overcoat have been tested as a system and are found to meet the requirements of a fire-retardant coating.

5.3 Tests.

5.3.1* Fire-retardant coatings shall be tested in accordance with ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, or ANSI/UL 723, *Standard for Safety for Test for Surface Burning Characteristics of Building Materials*.

N 5.3.1.1 Class A fire-retardant coatings shall reduce the flame spread index to 25 or less and that have a smoke developed

index not exceeding 200 where applied to the applicable substrate, building material, or species of wood when tested in accordance with ASTM E84 or ANSI/UL 723.

- N 5.3.1.2** Class B fire-retardant coatings shall reduce the flame spread index to greater than 25 but not more than 75 and have a smoke developed index not exceeding 200 where applied to the applicable substrate, building material, or species of wood when tested in accordance with ASTM E84 or ANSI/UL 723.

5.3.2 Where fire-retardant coatings are to be subjected to sustained humidity of 80 percent or more or exposure to the weather, certification by a testing laboratory shall be required to indicate that there is no increase in listed classification when subjected to the “Standard Rain Test” described in ASTM D2898, *Standard Test Methods for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing*, (Method A).

5.4 Maintenance of Protection. Fire-retardant coatings shall possess the desired degree of permanency and shall be maintained to retain the effectiveness of the treatment under the service conditions encountered in actual use.

5.5 Labeled.

5.5.1 The fire-retardant-coating material shall be listed and labeled to indicate conformance with the requirements in Sections 5.2 through 5.4.

5.5.2 The manufacturers’ instructions for application shall be affixed to each container of the fire-retardant-coating material.

Annex A Explanatory Material

Annex A is not a part of the requirements of this NFPA document but is included for informational purposes only. This annex contains explanatory material, numbered to correspond with the applicable text paragraphs.

A.1.1 Fire resistance ratings measured on an hourly basis are not covered in this standard. To establish such ratings, tests should be made in accordance with ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, or ANSI/UL 263, *Standard for Safety for Fire Tests of Building Construction and Materials*.

A.3.2.1 Approved. The National Fire Protection Association does not approve, inspect, or certify any installations, procedures, equipment, or materials; nor does it approve or evaluate testing laboratories. In determining the acceptability of installations, procedures, equipment, or materials, the authority having jurisdiction may base acceptance on compliance with NFPA or other appropriate standards. In the absence of such standards, said authority may require evidence of proper installation, procedure, or use. The authority having jurisdiction may also refer to the listings or labeling practices of an organization that is concerned with product evaluations and is thus in a position to determine compliance with appropriate standards for the current production of listed items.

A.3.2.2 Authority Having Jurisdiction (AHJ). The phrase “authority having jurisdiction,” or its acronym AHJ, is used in NFPA documents in a broad manner, since jurisdictions and approval agencies vary, as do their responsibilities. Where public safety is primary, the authority having jurisdiction may be a federal, state, local, or other regional department or individual such as a fire chief; fire marshal; chief of a fire prevention bureau, labor department, or health department; building

official; electrical inspector; or others having statutory authority. For insurance purposes, an insurance inspection department, rating bureau, or other insurance company representative may be the authority having jurisdiction. In many circumstances, the property owner or his or her designated agent assumes the role of the authority having jurisdiction; at government installations, the commanding officer or departmental official may be the authority having jurisdiction.

A.3.2.4 Listed. The means for identifying listed equipment may vary for each organization concerned with product evaluation; some organizations do not recognize equipment as listed unless it is also labeled. The authority having jurisdiction should utilize the system employed by the listing organization to identify a listed product.

- N A.3.3.1 Fire-Retardant Clothing.** The efficacy of fire-retardant coatings to decrease flame spread index is normally assessed by testing in accordance with ASTM E84, *Standard Test Methods for Fire Tests of Building Construction and Materials*, or ANSI/UL 723, *Standard for Test for Surface Burning Characteristics of Building Materials*.

A.5.1 This section does not address the use of fire-retardant coatings as a thermal barrier.

A.5.2.1 Certain coatings might not be suitable for high-humidity occupancies or for other occupancies where combustible dust or oily residue deposits might accumulate, affecting the ability of the coating to adhere to the substrate material.

A.5.3.1 The flame spread index is expressed numerically on a scale for which the zero point is fixed by the performance of inorganic-reinforced cement board and the 100 point (approximately) is fixed by the performance of red oak flooring.

Annex B Informational References

- Δ B.1 Referenced Publications.** The documents or portions thereof listed in this annex are referenced within the informational sections of this standard and are not part of the requirements of this document unless also listed in Chapter 2 for other reasons.

B.1.1 NFPA Publications. (Reserved)

B.1.2 Other Publications.

- Δ B.1.2.1 ASTM Publications.** ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959.

ASTM E84, *Standard Test Methods for Fire Tests of Building Construction and Materials*, 2015b.

ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, 2016.

- Δ B.1.2.2 UL Publications.** Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096.

ANSI/UL 263, *Standard for Safety for Fire Tests of Building Construction and Materials*, 2011, revised 2014.

B.2 Informational References. (Reserved)

B.3 References for Extracts in Informational Sections. (Reserved)

Index

Copyright © 2017 National Fire Protection Association. All Rights Reserved.

The copyright in this index is separate and distinct from the copyright in the document that it indexes. The licensing provisions set forth for the document are not applicable to this index. This index may not be reproduced in whole or in part by any means without the express written permission of NFPA.

- A-**
- Administration**, Chap. 1
 - Equivalency, 1.5
 - Retroactivity, 1.4
 - Scope, 1.1, A.1.1
 - Units, 1.6
 - Primary and Equivalent Values, 1.6.2
 - SI Units, 1.6.1
- Approved**
 - Definition, 3.2.1, A.3.2.1
- Authority Having Jurisdiction (AHJ)**
 - Definition, 3.2.2, A.3.2.2
- D-**
- Definitions**, Chap. 3
- E-**
- Explanatory Material**, Annex A
- F-**
- Fire-Retardant Coating**
 - Definition, 3.3.1, A.3.3.1
- Fire-Retardant Coatings for Building Materials**, Chap. 5
 - Application, 5.1, A.5.1
 - General, 5.2
 - Labeled, 5.5
 - Maintenance of Protection, 5.4
 - Tests, 5.3
- Fire-Retardant-Treated Wood**
 - Definition, 3.3.2
- Fire-Retardant-Treated Wood**, Chap. 4
 - Application, 4.1
 - Fire-Retardant-Treated Wood, 4.1.1
 - Fire-Retardant-Treated Wood Treatment, 4.1.2
 - Other Means During Manufacture, 4.1.2.2
 - Pressure Process, 4.1.2.1
 - Exposure to Weather or Damp or Wet Locations, 4.3
 - Interior Applications, 4.2
 - Lumber, 4.2.2
 - Wood Structural Panels, 4.2.1
 - Labeling, 4.5
 - Moisture Content, 4.4
- I-**
- Informational References**, Annex B
- L-**
- Labeled**
 - Definition, 3.2.3
- Listed**
 - Definition, 3.2.4, A.3.2.4
- R-**
- Referenced Publications**, Chap. 2
- S-**
- Shall**
 - Definition, 3.2.5
- Should**
 - Definition, 3.2.6
- Standard**
 - Definition, 3.2.7

Sequence of Events for the Standards Development Process

Once the current edition is published, a Standard is opened for Public Input.

Step 1 – Input Stage

- Input accepted from the public or other committees for consideration to develop the First Draft
- Technical Committee holds First Draft Meeting to revise Standard (23 weeks); Technical Committee(s) with Correlating Committee (10 weeks)
- Technical Committee ballots on First Draft (12 weeks); Technical Committee(s) with Correlating Committee (11 weeks)
- Correlating Committee First Draft Meeting (9 weeks)
- Correlating Committee ballots on First Draft (5 weeks)
- First Draft Report posted on the document information page

Step 2 – Comment Stage

- Public Comments accepted on First Draft (10 weeks) following posting of First Draft Report
- If Standard does not receive Public Comments and the Technical Committee chooses not to hold a Second Draft meeting, the Standard becomes a Consent Standard and is sent directly to the Standards Council for issuance (see Step 4) or
- Technical Committee holds Second Draft Meeting (21 weeks); Technical Committee(s) with Correlating Committee (7 weeks)
- Technical Committee ballots on Second Draft (11 weeks); Technical Committee(s) with Correlating Committee (10 weeks)
- Correlating Committee Second Draft Meeting (9 weeks)
- Correlating Committee ballots on Second Draft (8 weeks)
- Second Draft Report posted on the document information page

Step 3 – NFPA Technical Meeting

- Notice of Intent to Make a Motion (NITMAM) accepted (5 weeks) following the posting of Second Draft Report
- NITMAMs are reviewed and valid motions are certified by the Motions Committee for presentation at the NFPA Technical Meeting
- NFPA membership meets each June at the NFPA Technical Meeting to act on Standards with “Certified Amending Motions” (certified NITMAMs)
- Committee(s) vote on any successful amendments to the Technical Committee Reports made by the NFPA membership at the NFPA Technical Meeting

Step 4 – Council Appeals and Issuance of Standard

- Notification of intent to file an appeal to the Standards Council on Technical Meeting action must be filed within 20 days of the NFPA Technical Meeting
- Standards Council decides, based on all evidence, whether to issue the standard or to take other action

Notes:

1. Time periods are approximate; refer to published schedules for actual dates.
2. Annual revision cycle documents with certified amending motions take approximately 101 weeks to complete.
3. Fall revision cycle documents receiving certified amending motions take approximately 141 weeks to complete.

Committee Membership Classifications^{1,2,3,4}

The following classifications apply to Committee members and represent their principal interest in the activity of the Committee.

1. M *Manufacturer*: A representative of a maker or marketer of a product, assembly, or system, or portion thereof, that is affected by the standard.
2. U *User*: A representative of an entity that is subject to the provisions of the standard or that voluntarily uses the standard.
3. IM *Installer/Maintainer*: A representative of an entity that is in the business of installing or maintaining a product, assembly, or system affected by the standard.
4. L *Labor*: A labor representative or employee concerned with safety in the workplace.
5. RT *Applied Research/Testing Laboratory*: A representative of an independent testing laboratory or independent applied research organization that promulgates and/or enforces standards.
6. E *Enforcing Authority*: A representative of an agency or an organization that promulgates and/or enforces standards.
7. I *Insurance*: A representative of an insurance company, broker, agent, bureau, or inspection agency.
8. C *Consumer*: A person who is or represents the ultimate purchaser of a product, system, or service affected by the standard, but who is not included in (2).
9. SE *Special Expert*: A person not representing (1) through (8) and who has special expertise in the scope of the standard or portion thereof.

NOTE 1: “Standard” connotes code, standard, recommended practice, or guide.

NOTE 2: A representative includes an employee.

NOTE 3: While these classifications will be used by the Standards Council to achieve a balance for Technical Committees, the Standards Council may determine that new classifications of member or unique interests need representation in order to foster the best possible Committee deliberations on any project. In this connection, the Standards Council may make such appointments as it deems appropriate in the public interest, such as the classification of “Utilities” in the National Electrical Code Committee.

NOTE 4: Representatives of subsidiaries of any group are generally considered to have the same classification as the parent organization.

Submitting Public Input / Public Comment Through the Online Submission System

Soon after the current edition is published, a Standard is open for Public Input.

Before accessing the Online Submission System, you must first sign in at www.nfpa.org. *Note: You will be asked to sign-in or create a free online account with NFPA before using this system:*

- a. Click on Sign In at the upper right side of the page.
- b. Under the Codes and Standards heading, click on the “List of NFPA Codes & Standards,” and then select your document from the list or use one of the search features.

OR

- a. Go directly to your specific document information page by typing the convenient shortcut link of www.nfpa.org/document# (Example: NFPA 921 would be www.nfpa.org/921). Sign in at the upper right side of the page.

To begin your Public Input, select the link “The next edition of this standard is now open for Public Input” located on the About tab, Current & Prior Editions tab, and the Next Edition tab. Alternatively, the Next Edition tab includes a link to Submit Public Input online.

At this point, the NFPA Standards Development Site will open showing details for the document you have selected. This “Document Home” page site includes an explanatory introduction, information on the current document phase and closing date, a left-hand navigation panel that includes useful links, a document Table of Contents, and icons at the top you can click for Help when using the site. The Help icons and navigation panel will be visible except when you are actually in the process of creating a Public Input.

Once the First Draft Report becomes available there is a Public Comment period during which anyone may submit a Public Comment on the First Draft. Any objections or further related changes to the content of the First Draft must be submitted at the Comment stage.

To submit a Public Comment you may access the online submission system utilizing the same steps as previously explained for the submission of Public Input.

For further information on submitting public input and public comments, go to: <http://www.nfpa.org/publicinput>.

Other Resources Available on the Document Information Pages

About tab: View general document and subject-related information.

Current & Prior Editions tab: Research current and previous edition information on a Standard.

Next Edition tab: Follow the committee’s progress in the processing of a Standard in its next revision cycle.

Technical Committee tab: View current committee member rosters or apply to a committee.

Technical Questions tab: For members and Public Sector Officials/AHJs to submit questions about codes and standards to NFPA staff. Our Technical Questions Service provides a convenient way to receive timely and consistent technical assistance when you need to know more about NFPA codes and standards relevant to your work. Responses are provided by NFPA staff on an informal basis.

Products & Training tab: List of NFPA’s publications and training available for purchase.