Fire Retardant
Impregnated
Wood and
Fire Retardant
Coatings for
Building
Materials
1992 Edition



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Policy Adopted by NFPA Board of Directors on December 3, 1982

The Board of Directors reaffirms that the National Fire Protection Association recognizes that the toxicity of the products of combustion is an important factor in the loss of life from fire. NFPA has dealt with that subject in its technical committee documents for many years.

There is a concern that the growing use of synthetic materials may produce more or additional toxic products of combustion in a fire environment. The Board has, therefore, asked all NFPA technical committees to review the documents for which they are responsible to be sure that the documents respond to this current concern. To assist the committees in meeting this request, the Board has appointed an advisory committee to provide specific guidance to the technical committees on questions relating to assessing the hazards of the products of combustion.

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NFPA 703

Standard for

Fire Retardant Impregnated Wood and Fire Retardant Coatings for Building Materials

1992 Edition

This edition of NFPA 703, Standard for Fire Retardant Impregnated Wood and Fire Retardant Coatings for Building Materials, was prepared by the Technical Committee on Building Construction, and acted on by the National Fire Protection Association, Inc. at its Fall Meeting held November 18-20, 1991 in Montréal, Québec, Canada. It was issued by the Standards Council on January 17, 1992, with an effective date of February 10, 1992, and supersedes all previous editions.

The 1992 edition of this document has been approved by the American National Standards Institute.

Changes other than editorial are indicated by a vertical rule in the margin of the pages on which they appear. These lines are included as an aid to the user in identifying changes from the previous edition.

Origin and Development of NFPA 703

At a 1957 meeting in New York City, the Committee on Flameproofing and Preservative Treatments undertook to develop a standard for flameproofing of wood. Since that meeting the fire retardant coating industry has expanded considerably, and it is obvious that fire retardant admixtures of plastics and other building materials will require coverage by 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 previous 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 4 that listed referenced publications whose use is mandated within this standard.

For 1992 the Committee provided clarification in several areas defining fire resistance.

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James A. Milke, University of Maryland, MD Ernest E. Miller, Industrial Risk Insurers Alvin O. Peterson, Rogers Lovelock & Fritz Lyndon Welch, Ann Arbor, MI Robert A. Wessel, Gypsum Assoc.

Alternates

Kathleen H. Almand, American Iron & Steel Institute

(Alternate to D. F. Boring)

Kenneth E. Bland, Nat'l Forest Products Assoc. (Alternate to P. H. Billing)

Donald J. Boehmer, Rolf Jensen & Assoc., Inc. (Alternate for Rolf Jensen & Assoc., Inc.)

David W. Frable, U.S. General Services Administration

(Alternate to W. I. Blazek)

Harlan C. Ihlenfeldt, Kemper Group (Alternate to E. M. Wetmore)

Douglas A. Remaley, Town of Nags Head, NC Rep. International Association of Fire Chiefs (Alternate for IAFC Rep.)

Stephen V. Skalko, Portland Cement Assoc. (Alternate to J. J. Messersmith, Jr.)

Peter J. Gore Willse, Industrial Risk Insurers (Alternate to IRI Rep.)

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

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NFPA 703

Standard for

Fire Retardant Impregnated Wood and

Fire Retardant Coatings for Building

Materials

1992 Edition

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

Information on referenced publications can be found in Chapter 4 and Appendix B.

Chapter 1 General

1-1* Scope. This standard provides criteria for defining and identifying fire retardant impregnated wood and fire retardant coated building materials.

1-2 Definitions.

Authority Having Jurisdiction.* The "authority having jurisdiction" is the organization, office or individual responsible for "approving" equipment, an installation or a procedure.

Labeled. Equipment or materials to which has been attached a label, symbol or other identifying mark of an organization 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.

Chapter 2 Fire Retardant Impregnated Wood

- **2-1 Application.** These requirements apply to pressure impregnation treatments that reduce certain burning characteristics of wood. Pressure impregnated lumber and plywood shall be treated for fire retardance in accordance with the requirements of the American Wood Preservers' Association Standard C1, *All Timber Product-Preservative Treatment by Pressure Process*, as modified herein. Other approved methods of impregnation of wood products providing at least equal performance shall also be considered acceptable.
- 2-2 Results of Treatment All Species.
- 2-2.1 Conditions of Material.
- **2-2.1.1 Moisture Content.** Subsequent to treatment, fire retardant treated lumber and plywood shall be air-dried or

kiln-dried to an average moisture content of 19 percent or less for lumber and 15 percent or less for plywood in accordance with end-use requirements.

- **2-2.1.1.1 Air-Drying.** When material is air dried it shall not be exposed to conditions that could cause chemicals to leach out.
- **2-2.1.1.2 Kiln-Drying.** During kiln-drying the dry bulb temperature of the kiln shall not exceed 16°F until the average moisture content of the wood has dropped to 25 percent or less.

2-2.2 Performance Rating.

- **2-2.2.1 Fire Hazard Classification.** Material shall have a flame spread index of 25 or less with no evidence of significant progressive combustions when tested for 30 minutes by the test listed in Section 2-3. In addition, the flame front shall not progress more than 10.5 feet beyond the center line of the burner at any time during the test.
- **2-2.2.2 Interior Type A.** Where experience demonstrates a specific need for the use of materials with low hygroscopicity, material shall have an equilibrium moisture content of not more than 28 percent when tested in accordance with the ASTM D3201 procedures at 92 ± 2 percent relative humidity.
- **2-2.2.3 Interior Type B.** Where experience demonstrates no specific need for the use of material with low hygroscopicity, the material shall have an equilibrium moisture content of not more than 28 percent when tested in accordance with the ASTM D3201 procedures at 78 ± 2 percent relative humidity.
- **2-2.2.4 Exterior Type.** Where material is to be used outdoors subject to rainfall or subjected to sustained humidity of 80 percent or more, material shall show no increase in flame spread index when subjected to the standard rain test described in ASTM D2898, Standard Methods for Accelerated Weathering of Fire Retardant-Treated Wood for Fire Testing Method A.
- **2-3* Tests.** Fire retardant treated wood shall be tested in accordance with NFPA 255, Standard Method of Test of Surface Burning Characteristics of Building Materials.
- **2-4 Inspection and Identification.** Inspection is required by an independent and qualified test agency that establishes the requirements for treatment relative to the preceding requirements. All fire retardant treated wood products shall be labeled by the testing agency certifying such ratings.
- **2-5 Exposure.** Design criteria for fire retardant impregnated wood shall take into consideration the temperature and humidity conditions to which the material will be exposed.

Chapter 3 Fire Retardant Coatings for Building Materials

3-1 Application. These requirements apply to fire retardant coatings such as paints and other surface coatings used to reduce certain burning characteristics of building materials.

3-2 Definitions.

Fire Retardant Coating. A coating that reduces the flame spread of Douglas Fir and all other tested combustible surfaces to which it is applied by at least 50 percent or to a flame spread classification value of 75 or less, whichever is the lesser value, and has a smoke developed rating not exceeding 200.

Class A Fire Retardant Coating. As applied to building materials, shall reduce the flame spread to 25 or less and have a smoke developed rating not exceeding 200.

Class B Fire Retardant Coating. As applied to building materials, shall reduce the flame spread to greater than 25 but not more than 75 and have a smoke developed rating not exceeding 200.

3-3 General.

- **3-3.1** Fire retardant coatings shall remain stable and adhere under all atmospheric conditions to which the material is exposed.
- **3-3.2** A fire retardant coating shall not be used for unprotected outdoor installations unless labeled for such installations.
- **3-3.3** The classification of fire retardant coatings is applicable only when the coating is applied at the rates of coverage and to the type or kind of surfaces indicated on the test report when the coating is applied in accordance with the directions supplied by the manufacturer with the container.
- **3-3.4** These coatings shall be applied in accordance with the manufacturer's direction.
- **3-3.5** The authority having jurisdiction may require that the application be certified by the applicator as being in conformance with the manufacturer's direction for application.
- **3-3.6** Fire retardant coating shall not be overcoated 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.

3-4 Tests.

- **3-4.1*** Fire retardant coatings shall be tested by NFPA 255, Standard Method of Test of Surface Burning Characteristics of Building Materials.
 - **3-4.2** 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 must indi-

- cate that there is no increase in listed classification when subjected to the "Standard Rain Test" described in ASTM D2898, Standard Methods for Accelerated Weathering of Fire Retardant-Treated Wood for Fire Testing.
- **3-5 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.
- **3-6 Identification.** Each container of fire retardant coating material shall be labeled to indicate conformance with the preceding requirements and shall include the manufacturer's instructions for application.

Chapter 4 Referenced Publications

- **4-1** The following documents or portions thereof are referenced within this standard and shall be considered part of the requirements of this document. The edition indicated for each reference is the current edition as of the date of the NFPA issuance of this document.
- **4-1.1 NFPA Publication.** National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101.

NFPA 255, Standard Method of Test of Surface Burning Characteristics of Building Materials, 1990 edition.

4-1.2 Other Publications.

4-1.2.1 ASTM Publications. American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

ASTM D2898-1981, Standard Methods for Accelerated Weathering of Fire Retardant-Treated Wood for Fire Testing

ASTM D3201-1986, Standard Test Method for Hygroscopic Properties of Fire-Retardant Wood and Wood-Base Products.

- **4-1.2.2 AWPA Publication.** American Wood Preservers Association, P.O. Box 286, Woodstock, MD 21163-0286.
- C-1, All Timber Product-Preservative Treatment by Pressure Process, 1991.

Appendix A

This Appendix is not a part of the requirements of this NFPA document, but is included for information purposes only.

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 NFPA 251, *Standard Methods of Fire Tests of Building Construction and Materials*.

- A-1-2 Authority Having Jurisdiction. The phrase "authority having jurisdiction" 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, 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 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-2-3** Test methods similar to NFPA 255 include UL 723 and ASTM E84. Under the criteria of NFPA 255, the flame spread rating 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 untreated red oak flooring.
- **A-3-4.1** The flame spread rating 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.

Conditions of material 2-2.1

Appendix B Referenced Publications

- **B-1** The following documents or portions thereof are referenced within this standard for informational purposes only and thus should not be considered part of the requirements of this document. The edition indicated for each reference is the current edition as of the date of the NFPA issuance of this document.
- **B-1.1 NFPA Publication.** National Fire Protection Association, I Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101.

NFPA 251, Standard Methods of Fire Tests of Building Construction and Materials, 1990 edition.

B-1.2 Other Publications.

- **B-1.2.1 UL Publication.** Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062.
- UL 723, Test for Surface Burning Characteristics of Building Materials, 6th edition.
- **B-1.2.2 ASTM Publication.** American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

ASTM E84-1990, Standard Test Method for Surface Burning Characteristics of Building Materials.

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SUBMITTING PROPOSALS ON NFPA TECHNICAL COMMITTEE DOCUMENTS

Contact NFPA Standards Administration for final date for receipt of proposals on a specific document.

Note: All proposals must be received by 5:00 p.m. E.S.T./E.D.S.T. on the published proposal closing date.

INSTRUCTIONS

Use a separate proposal form for submitting each proposed amendment.

- 1. Type or print legibly in black ink.
- 2. Indicate the number, edition year, and title of the document. Also indicate the specific section or paragraph that the proposed amendment applies to.
- 3. Check the appropriate box to indicate whether this proposal recommends adding new text, revising existing text, or deleting text.
- 4. In the space identified as "Proposal" indicate the exact wording you propose as new or revised text, or the text you propose be deleted.
- 5. In the space titled "Statement of Problem and Substantiation for Proposal" state the problem which will be resolved by your recommendation and give the specific reason for your proposal. Include copies of test results, research papers, fire experience, or other materials that substantiate your recommendation.
- 6. Check the appropriate box to indicate whether or not this proposal is original material, and if it is not, indicate the source of the material.
- 7. Sign the proposal.

If supplementary material (photographs, diagrams, reports, etc.) is included, you may be required to submit sufficient copies for all members and alternates of the technical committee. The technical committee is authorized to abstract the "Statement of Problem and Substantiation for Proposal" if it exceeds 200 words for publication in the Technical Committee Reports.

NOTE: The NFPA Regulations Governing Committee Projects in Paragraph 10-10 state: Each proposal shall be submitted to the Council Secretary and shall include:

- (a) identification of the submitter and his affiliation (Committee, organization, company) where appropriate, and
- (b) identification of the document, paragraph of the document to which the proposal is directed, and
- (c) a statement of the problem and substantiation for the proposal, and
- (d) proposed text of proposal, including the wording to be added, revised (and how revised), or deleted.

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Note: All proposals must be received by 5:00 p.m. E.S.T./E.D.S.T.	on the published proposal closing da
Date 5/18/85 Name John B. Smith	Tel. No. 617-555-1212
Address 9 Seattle St., Seattle, WA 02255	
Representing (Please indicate organization, company or self) Fire N	Marshals Assn. of North America
. a) Document Title: Protective Signaling Systems NFPA N	o. & Year NFPA 72D
b) Section/Paragraph: 2-7.1 (Exception)	FOR OFFICE USE ONLY
. Proposal recommends: (Check one) □ new text	Log #:
revised text	Date Rec'd:
🗵 deleted text.	Proposal #:
Proposal (include proposed new or revised wording,	
or identification of wording to be deleted):	^
Statement of Problem and Substantiation for Proposal:	
A properly installed and maintained system should be free of The occurrence of one or more ground faults should be requir "trouble" signal because it indicates a condition that could co to future malfunction of the system. Ground fault protection available on these systems for years and its cost is negligible. It on all systems will promote perter installations, maintenance.	ed to cause a ntribute has been widely Requiring
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Address				
Representing	(Please indicate orga	nization, company o	r self)	
1. a) Docume	nt Title:		NFPA No. & Y	ear
b) Section/	Paragraph:		·	FOR OFFICE USE ONLY Log #:
2. Proposal re	commends: (Check o	one) 🗆 new text revised text		Date Rec'd:
		deleted text.		Proposal #:
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(Note: Original material i from another source.)	s considered to be the submitter's o	wn idea based on or as a result of his	own experience thought, or rese	arch and to the best of his knowledge is not copied
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