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NFPA 703 Fire Retardant Impregnated Wood and Fire Retardant Coatings for Building Materials 1985

National Fire Protection Association Batterymarch Park, Quincy, MA 02269

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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.

Statement on NFPA Procedures

This material has been developed under the published procedures of the National Fire Protection Association, which are designed to assure the appointment of technically competent Committees having balanced representation. While these procedures assure the highest degree of care, neither the National Fire Protection Association, its members, nor those participating in its activities accepts any liability resulting from compliance or noncompliance with the provisions given herein, for any restrictions imposed on materials or processes, or for the completeness of the text.

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NFPA 703

Standard for

Fire Retardant Impregnated Wood and Fire Retardant Coatings for Building Materials

1985 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, released by the Correlating Committee on Building Construction, and acted on by the National Fire Protection Association, Inc. at its Annual Meeting held May 13-17, 1985 in Chicago, Illinois. It was issued by the Standards Council on June 6, 1985, with an effective date of June 26, 1985, and supersedes all previous editions.

The 1985 edition of this standard 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, the Committee, in its many subsequent meetings, reexamined its approach and expanded the standard to cover all fire retardant treatments.

The standard was tentatively adopted by 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.

This 1985 edition includes the addition of a new Chapter 4 which lists referenced publications whose use is mandated within this standard.

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This list represents the membership at the time the Committee was balloted on the text of this edition. Since that time, changes in the membership may have occurred.

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.

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NFPA 703

Standard for

Fire Retardant Impregnated Wood and Fire Retardant Coatings for Building Materials

1985 Edition

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

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]

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.

NOTE: 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."

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. Other approved methods of impregnation, providing at least equal performance, are also acceptable.

2-2 Definitions.

Fire Retardant Impregnated Wood. Lumber and plywood that has been impregnated by an approved process with fire retardant chemicals and demonstrates one of the following classes:

Fire Retardant Treated Wood. A special class of fire retardant impregnated wood that has a flame spread rating of 25 or less with no evidence of significant progressive combustion when tested for 30 minutes duration by the test listed in Section 2-4. In addition, the flame front does not progress more than 10½ ft (3.2 m) beyond the centerline of the burner at any time during the test.

Class A Fire Retardant Impregnated Wood has a flame spread rating of 25 or less when tested for 10 minutes duration by the test listed in Section 2-4.

Class B Fire Retardant Impregnated Wood has a flame spread rating of greater than 25 but not more than 75 when tested for 10 minutes duration by the test listed in Section 2-4.

2-3 General.

2-3.1 Where fire retardant impregnated wood is to be subjected to sustained humidity of 80 percent or more or exposure to the weather, certification by a testing laboratory must indicate that there is no increase in listed classification when subjected to the "Standard Rain Test" described in ASTM D-2898, *Test Method for Accelerated Weathering of Fire Retardant-Treated Wood for Fire Testing*.

2-3.2 Fire retardant impregnated lumber and plywood shall be dried after treatment to a moisture content not to exceed 19 percent for lumber and 15 percent for plywood.

2-4 Tests. Fire retardant impregnated treated wood shall be tested by NFPA 255, *Standard Method of Test of Surface Burning Characteristics of Building Materials* (UL 723, ASTM E-84).[2]

2-5 Identification. Fire retardant impregnated lumber and plywood shall be labeled (see definition of "Labeled" in Chapter 1) to indicate performance with the preceding requirements.

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.

[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*.

[2]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 asbestos-cement board and the 100 point is fixed by the performance of untreated red oak flooring.

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 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 coating unless both the fire retardant coating and the overcoat have been tested as a system and are found to meet the requirements of Section 3-2.

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* (UL 723, ASTM E-84).[1]

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 indicate that there is no increase in listed classification when subject to the "Standard Rain Test" described in ASTM D-2898, *Test Method for Accelerated Weathering of Fire Retardant-Treated Wood for Fire Testing.*

[1]The flame spread rating is expressed numerically on a scale for which the zero point is fixed by the performance of asbestos-cement board and the 100 point is fixed by the performance of red oak flooring.

3-5 Maintenance of Protection. Fire retardant coatings shall possess the desired degree of permanency and shall be maintained so as to retain the effectiveness of the treatment under the service conditions encountered in actual use.

3-6 Identification.

3-6.1 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 current as of the date of the NFPA issuance of this document. These references are listed separately to facilitate updating to the latest edition by the user.

4-1.1 NFPA Publication. National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

NFPA 255-1984, *Standard Method of Test of Surface Burning Characteristics of Building Materials* (UL 723, ASTM E-84)

4-1.2 Other Publication.

American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

ASTM D-2898-1981, *Test Method for Accelerated Weathering of Fire Retardant-Treated Wood for Fire Testing*

Appendix A Referenced Publications

A-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 current as of the date of the NFPA issuance of this document. These references are listed separately to facilitate updating to the latest edition by the user.

A-1.1 NFPA Publication. National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

NFPA 251-1985, *Standard Methods of Fire Tests of Building Construction and Materials*

Bibliography of NFPA Standards

1 Fire Prevention Code
10 Portable Extinguishers
10L Model Enabling Act
11 Foam Ext. Systems
11A Medium and High Expansion Foam Syst.
11C Mobile Foam Apparatus
12 Carbon Dioxide Systems
12A Halon 1301 Systems
12B Halon 1211 Systems
12CT Halon 2402 Systems
13 Sprinkler Systems
13A Sprinkler Maintenance
13D Sprinkler Sys., Dwellings
13E Sprinkler Prop., F.D. Operations at
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16A Closed Head Foam-Water Sprinkler Systs.
17 Dry Chem. Ext. Systems
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53M Oxy. Atmospheres
54 Nat'l Fuel Gas Code
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59 LP-Gas, Utility Plants
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61B Grain Elevators
61C Feed Mills
61D Agricultural Commodities
65 Aluminum Processing
650 Pneumatic Conveying Systs.
651 Aluminum, Magnesium Powder
654 Plastics, Expl. Prevent.
655 Sulfur Fires
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68 Explosion Venting
69 Explosion Prev. Syst.
70 *Nat'l Electrical Code®*
70A Dwelling Electrical Code
70B Elect. Equip. Maint.
70E Employee Electrical Safety
70L Inspection of Elect. Installations
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72A Local Protective Syst.
72B Auxiliary Sig. System
72C Remote Station System
72D Proprietary Sig. Syst.
72E Auto. Fire Detectors
72F Emergency Voice/Alarm Comm. Systs.
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256 Tests Roof Coverings
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409 Aircraft Hangars
410 Aircraft Maintenance
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414 Rescue Vehicles
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418 Roof-top Heliports
419 Airport Water Systems
421 Aircraft Interior F. P.
422M Aircraft Fire Investigators Manual
423 Aircraft Engine Test Facilities
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501C Recreational Vehicles
501D Recreational Vehicle Pks.
502 Highways, Tunnels, Bridges
505 Powered Industrial Trucks
512 Truck Fire Protection
513 Motor Freight Terminals
601 Guard Service
601A Guard Operations
701 Fire Tests, Textiles, Films
702 Wearing Apparel
703 Fire-Retardant Treatments of Bldg. Mat'ls.
704 Ident. of Materials
801 Radioactive Mat'l. Facil.
802 Nuclear Research Reactors
803 Light Water Nuclear Power Plants
901 Uniform Coding for F. P.
902M Field Incident Manual
903M Property Survey Manual
904M Investigative Report Manual
907M Investigation of Fires of Elec. Origin
910 Libraries and Library Collections
911 Museums and Museum Collections
1001 Fire Fighter Prof. Qual.
1002 Driver Prof. Qual.
1003 Airport Fire Fighter Prof. Qual.
1004 Fire Fighter Medical Technicians
1021 Fire Officer Prof. Qual.
1031 Fire Inspector Prof. Qual.
1041 Fire Instructor Prof. Qual.
1121L Model State Fireworks Law
1122 Unmanned Rockets Code
1123 Fireworks, Public Display
1124 Fireworks, Mfg., Trans., Stge.
1141 Fire Prot. in Planned Building Groups
1201 Organization, Fire Services
1202 Fire Dept. Organization
1221 Public Fire Serv. Comm.
1231 Suburban & Rural Water Supplies
1301 Public Fire Prev. Criteria
1401 Training Reports, Records
1402 Building Training Centers
1410 Initial Fire Attack
1501 Fire Dept. Safety Officer
1901 Automotive Fire Apparatus
1904 Aerial Ladders & Elev. Platforms
1921 Portable Pumping Units
1931 Fire Dept. Ground Ladders
1932 Fire Dept. Ground Ladders, Use, Maint., Testing
1961 Fire Hose
1962 Fire Hose Care, Use
1963 Hose Connection Threads
1971 Protective Clothing
1972 Fire Fighters' Helmets
1973 Gloves for Structural Fire Fighters
1975 Station/Work Uniforms
1981 Self-Contained Breathing App.
1982 Personal Alert Safety System for Fire Fighters
1983 Life Safety Rope