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Standard for

FIRE-RETARDANT TREATMENTS of BUILDING MATERIALS

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National Fire Protection Association

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This is one of a large number of publications on fire safety issued by the Association. All NFPA standards and recommended practices, including this text, are prepared by the technical committees of the NFPA and adopted at an Annual Meeting of the Association. They are intended to prescribe reasonable measures for minimizing losses of life and property by fire.

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Official NFPA Definitions

SHALL is intended to indicate requirements.

SHOULD is intended to indicate recommendations, or that which is advised but not required.

APPROVED refers to approval by the authority having jurisdiction.

Units of measurements used here are U. S. standard. 1 U. S. gallon = 0.83 Imperial gallons = 3.785 liters. One foot = 0.3048 meters. One inch = 25.40 millimeters. One pound per square inch = 0.06805 atmospheres = 2.307 feet of water.

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FIRE-RETARDANT TREATMENTS OF BUILDING MATERIALS

NFPA No. 703 — 1961

This standard, prepared by the NFPA Committee on Flameproofing and Preservative Treatments, was adopted by the National Fire Protection Association at the 65th Annual Meeting on May 18, 1961.

HISTORY

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 re-examined its approach and expanded the standard to cover all fire-retardant treatments.

The first two chapters of the Standard for Fire-Retardant Treatments of Building Materials have been developed. Chapter One deals with Fire-Retardant Pressure-Impregnations and Chapter Two with Fire-Retardant Coatings. Both chapters were tentatively adopted by the 1960 Annual Meeting and both were submitted for final adoption at the 1961 Annual Meeting.

CONTENTS

Standard for
FIRE-RETARDANT TREATMENTS OF BUILDING MATERIALS

NFPA No. 703 — 1961

Preface.

This standard was developed to deal with fire-retardant treatments of building materials. Although a treatment may not be mentioned in the standard, it does not mean that the treatment is ineffective, but merely that it has not yet been studied by the Committee. As new treatments are developed the standard will be enlarged to deal with these treatments.

Introduction.

The burning characteristics of building materials are reduced 1) by pressure impregnation or 2) by surface coatings.* These treatments are not necessarily equivalent for all applications and an understanding for each individual usage is required.

CHAPTER 1

FIRE-RETARDANT PRESSURE IMPREGNATIONS

10. Scope.

101. These requirements apply to pressure impregnation treatments to reduce the burning characteristics of wood.

11. Definitions.

111. FIRE-RETARDANT CHEMICALS are those chemicals which can be pressure impregnated into wood in sufficient quantity to effectively reduce the combustibility of the wood.

*NOTE: 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 No. 251, Standard Method of Fire Tests of Building Construction and Materials.

112. FIRE-RETARDANT PRESSURE-IMPREGNATED WOOD is wood that has been pressure impregnated with fire-retardant chemicals. The effectiveness of such treatment is determined by suitable tests as listed in Article 13.

12. General.

121. Fire-retardant pressure-impregnated wood shall not be used under such humidity conditions that surface leaching of the chemicals will result (unless it is sealed by a protective coating, which in itself will not increase the flame spread beyond the permissible limits).

122. Chemicals used for the treatment of the wood shall not materially hasten the corrosion of metal fastenings.

123. The treatment shall not materially impair the structural strength of the wood.

13. Tests.

131. Fire-retardant pressure-impregnated wood shall be tested by the Standard Method of Test of Surface Burning Characteristics of Building Materials, NFPA No. 255. The flame-spread rating shall be 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.

14. Effectiveness of Treatment.

141. To be classified as CLASS A FIRE-RETARDANT PRESSURE-IMPREGNATED WOOD the treatment must reduce the flame-spread rating to 25 or less. The rating should be certified by a nationally recognized testing laboratory and each piece of wood should be so identified.

142. To be classified as CLASS B FIRE-RETARDANT PRESSURE-IMPREGNATED WOOD the treatment must reduce the flame-spread rating to between 26 and 75. The rating should be certified by a nationally recognized testing laboratory and each piece of wood should be so identified.

15. Permanency of Treatment.

151. Treatments used to reduce the flame spread of wood shall possess the desired degree of permanency or shall otherwise be protected so as to retain the effectiveness of the treatment under the service conditions encountered in actual use.

CHAPTER 2 — FIRE-RETARDANT COATINGS

20. Scope.

201. These requirements apply to surface treatments to reduce the burning characteristics of building materials through the use of fire-retardant coatings.

21. Definitions.

211. FIRE-RETARDANT COATINGS are materials that may be applied to the surface of building materials to reduce the flame spread.

22. General.

221. Fire-retardant coatings shall remain stable and adhere under all atmospheric conditions where the material is used.

222. A fire-retardant coating shall not be used for unprotected outdoor installations unless suitable for such installations or unless it is sealed by a protective coating which itself will not increase flame spread beyond the permissible limits.

23. Tests.

231. Fire-retardant coatings on building materials shall be tested by the Standard Method of Test of Surface Burning Characteristics of Building Materials (NFPA No. 255). The flame-spread rating shall be 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.

24. Effectiveness of Application.

241. To be classified as a CLASS A FIRE RETARDANT FINISH the coating *as applied* to building materials must reduce the flame-spread rating to 25 or less. The effectiveness of the material shall be certified by a nationally recognized testing laboratory and each container should bear directions for application.

242. To be classified as a CLASS B FIRE RETARDANT FINISH the coating *as applied* to building materials must reduce the flame-spread rating to between 26 and 75. The effectiveness of the material shall be certified by a nationally recognized testing laboratory and each container should bear directions for application.

243. To be effective these coatings must be applied in accordance with the directions to produce the flame-spread rating required. Due considerations should be given to the type of material to be protected, and to the method and amount of coating applied.

244. The authority having jurisdiction may require that the application be certified by the applicator.

25. Maintenance of Protection.

251. Fire-retardant coatings shall possess the desired degree of permanency or shall otherwise be maintained so as to retain the effectiveness of the treatment under the service conditions encountered in actual use.

252. Gaps due to shrinkage or settling may open up fire-retardant coatings enough to expose untreated material with the result that the flame-spread protection gained by the coating will be lost. Periodic visual inspection of the treatment will indicate these faults and the need for additional treatment.

TYPICAL POCKET EDITIONS OF NFPA STANDARDS

Standards published in 4¾ x 7¼ in. size, revised as of June 5, 1961. These standards also appear, with identical text, in the seven volumes of the National Fire Codes, republished annually. For complete list of publications write National Fire Protection Assn., 60 Batterymarch St., Boston 10, Mass.

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