Michigan Department of Labor and Economic Growth
Bureau of Fire Services

Fire Marshal Bulletin – 8

Flame Retardants - "Flameproofing" - Interior Finish

Many agencies, facility owners and individuals have inquired as to the use, acceptability, effectiveness and possible health hazards of "Flame Retardants."

Flame retardant materials, usually in a liquid form, are applied by means of spraying, brushing or dipping. They are applied to a material to render it "difficult to ignite" and reduce the flammability. "Flameproof" means that materials will not readily ignite and will not propagate flame under the test conditions of NFPA 701. "Flameproofed" materials are usually combustible materials with the addition of a fire retardant treatment or coating to modify their burning properties.

Current building and fire codes address this type of product by two methods; 1) As interior finish requirement for walls and ceilings, and 2) As flameproofing for curtains and drapes. Currently, codes do not address furniture such as chairs, tables, etc.

Codes require interior finish to be class A, B or C (or correspondingly Class I, II or III). Materials for interior finish use must be tested according to "Test for Surface Burning Characteristics of Building Materials." Designation numbers are ASTM-E84, NFPA 225, UL 723, ANSI A2.5.

When codes (according to the type of facility) require flameproofing for curtains and/or drapes, the product must be tested according to "Flame Resistant Textiles and Films." The designation is National Fire Protection Association Standard 701 (NFPA 701).

In all new construction, products applied in the field to a surface material to satisfy the interior finish requirement are not acceptable. They are acceptable as a method of correcting existing facility conditions which do not meet the code. Note that an existing facility condition is one installed before the effective date of code adoption or rule promulgation.

Curtains and drapes, when required to be "flameproofed," shall have the product treated using a method which has been tested and approved by an approved independent testing laboratory. The test performed must be NFPA 701, and the large scale test is recommended.

The two (2) referenced tests (ASTM-E84 and NFPA 701) are not equal to each other. The test for surface burning characteristics (ASTM-E84) is acceptable in lieu of the flameproofing of textiles (NFPA 701), but the reverse is not true.

There are many claims being made for flame retardants for use in any and all types of facilities. The above stated criteria will be applied to all facilities falling under the jurisdiction of the Bureau of Fire Services (BFS).

The effective life of flame retardant on any material can vary greatly. Some factors effecting the life of the treatment are: The skill and integrity of the applicator, washing, dry cleaning, exterior exposure, humidity and the chemical and physical properties of the material. Testing laboratories do not designate how often a material should or must be retreated. Users of flame retardants should adhere to the recommendations of the manufacturer.

It is suggested that a prospective user request a copy of the test results from an approved testing laboratory to determine the validity of the claims made by a manufacturer or distributor. Toxicity, fungus, asbestos content, shrinkage, etc., are not addressed in fire codes and have not been evaluated by the BFS.

If you have any questions regarding this bulletin, please contact the BFS, Fire Safety Plan Review Division at (517) 241-8847.

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