

FESHM 6040.2: FIRE CONSTRUCTION REQUIREMENTS – INTERIOR FINISH MATERIALS

Revision History

Author	Description of Change	Revision Date
J. Priest & J. Niehoff	<ul style="list-style-type: none">• Applied FESHM template• Clarified guidance on Chapter content• Added UL 94 and Vertical Burn Test• Deleted Table of suggested Manufactures	December 2014
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1.0 INTRODUCTION

The general requirements to be followed for interior finish materials are contained in National Fire Protection Association (NFPA) codes and standards. Tests of interior finishes are typically conducted by Underwriters Laboratory (UL) utilizing the American National Standards Institute (ANSI) standards.

In order to limit the potential for fast spreading fires and the development of large quantities of toxic combustion products, it is preferable to use interior finish materials which have "flame spread" ratings of 25 or less and "smoke developed" ratings of 450 or less as determined by the American Society for Testing Materials (ASTM). Of particular concern are thermal and acoustic insulating materials manufactured with expanded foam, most of which greatly exceed these values. This chapter describes procedures for the selection and safe use of interior finish materials.

2.0 REFERENCE

- Fermilab Environmental Safety Health Manual (FESHM) 6010, Fire Protection Program
- ANSI/UL 723, Standard for Test for Surface Burning Characteristics at Building Materials, 2010
- ANSI/UL 94, Standard for Tests for Flammability of Plastic Materials for Parts in Devices and Appliances, 2013
- ASME D 2850, Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials, 2006
- ASTM E 84, Standard Test Method for Surface Burning Characteristics of Building Materials, 2010
- NFPA 101, Life Safety Code, 2012 Edition
- NFPA 253, Standard Method of Test for Critical Radiant Flux of Floor Covering System Using Radiant Heat Energy Source, 2011 Edition
- NFPA 261, Standard Method of Test for Determining Resistance of Mock-up Upholstered Furniture Material Assemblies to Ignition by Smoldering Cigarettes, 2013 Edition
- NFPA 265, Standard Methods of Tests for Evaluating Room Fire Growth Contribution of Textile Covering on Full Height Panels and Walls, 2011 Edition
- NFPA 286, Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth, 2011 Edition
- NFPA 701, Standard Methods of Fire Tests for Flame Propagation of Textiles and Films, 2010 Edition

3.0 PROCEDURES

3.1 Building Materials Classification

3.1.1. Class A - 25/450 Flame Spread/Smoke Development Rating

- If practical, interior finish materials should have a flame spread rating of 25 or less and a smoke developed rating of 450 or less as determined by the ASTM E-84 (NFPA 255) test. (Note: Manufacturers often avoid presenting results in terms of these ratings when their products "fail" the ASTM E 84 test.)
- ESH&Q-FPE must review proposed installation involving foam insulation boards or spray foams when used outside manufacturer's installation specifications.

3.1.2. Class B or C - Greater than 25/450 Flame Spread/Smoke Development Rating

- Materials with a flame spread rating >25 and smoke developed rating >450 may be covered by a rigid noncombustible thermal barrier such as sheetrock to mitigate the consequences of the higher flame spread and smoke development properties. In order to be effective, the material should be in direct contact with the barrier.

3.2 Plastic Materials for Devices and Appliances**3.2.1. V-0 Classification**

- The after-flame time for each individual specimen is less than 10 seconds. The total after-flame time for any condition set is less than 50 seconds. The cotton indicator is not ignited by flaming particles or drops.
- ESH&Q-FPE must review proposed installation involving V-1 classifications or higher.