



Approval Standard for Class 1 Interior Wall and Ceiling Materials or Systems for Smoke Sensitive Occupancies

Class Number 4882

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Foreword

The FM Approvals certification mark is intended to verify that the products and services described will meet stated conditions of performance, safety and quality useful to the ends of property conservation. The purpose of Approval Standards is to present the criteria for FM Approval of various types of products and services, as guidance for FM Approvals personnel, manufacturers, users and authorities having jurisdiction.

Products submitted for certification by FM Approvals shall demonstrate that they meet the intent of the Approval Standard, and that quality control in manufacturing and/or applications shall ensure a consistently uniform and reliable product or service. Approval Standards strive to be performance-oriented and to facilitate technological development.

For examining equipment, materials and services, Approval Standards:

- a) must be useful to the ends of property conservation by preventing, limiting or not causing damage under the conditions stated by the Approval listing; and
- b) must be readily identifiable.

Continuance of Approval and Listing depends on compliance with the Approval Agreement, satisfactory performance in the field, on successful re-examinations of equipment, materials and services as appropriate, and on periodic follow-up audits of the manufacturing facility or service/application.

FM Approvals LLC reserves the right in its sole judgment to change or revise its standards, criteria, methods or procedures.

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1. INTRODUCTION

1.1 Purpose

- 1.1.1 This standard states Approval requirements for Class 1 interior wall and ceiling materials or systems for smoke sensitive occupancies.
- 1.1.2 Approval criteria may include, but are not limited to, performance requirements, marking requirements, examination of manufacturing facility(ies), audit of quality assurance procedures, and a follow-up program.

1.2 Scope

- 1.2.1 This standard applies to interior wall and ceiling materials or systems used in cleanrooms, pharmaceutical manufacturing and storage areas, food preparation and storage areas and similar occupancies or other occupancies which are susceptible to smoke damage. Wall and ceiling materials or systems which are categorized for use in cleanrooms meet the requirements of Test Standard for FM Approvals Cleanroom Materials Flammability Test Protocol, Class Number 4910 and American National Standard for Clean Room Materials Flammability Test Protocol ANSI/FM Approvals 4910 in addition to the other requirements of this standard. These materials or systems produce low levels of smoke. Wall and ceiling materials which meet the requirements of this Standard and which are categorized for use in pharmaceutical manufacturing and storage areas, food preparation and storage areas and similar occupancies produce somewhat higher levels of smoke (when compared to those materials or systems which were evaluated for cleanrooms) but produce less smoke than materials and systems evaluated to the Approval Standard for Class 1 Fire Rating of Insulated Wall or Wall and Roof/Ceiling Panels, Interior Finish Materials or Coatings, Class Number 4880 or Approval Standard for Class 1 Exterior Wall Systems, Class Number 4881.

1.3 Basis for Requirements

- 1.3.1 The requirements of this standard are based on experience, research and testing, Approval Standard for Class 1 Fire Rating of Insulated Wall or Wall and Roof/Ceiling Panels, Interior Finish Materials or Coatings, and Exterior Wall Systems, Class Number 4880, Test Standard for FM Approvals Cleanroom Materials Flammability Test Protocol, Class Number 4910 and American National Standard for Clean Room Materials Flammability Test Protocol ANSI/FM Approvals 4910. The advice of manufacturers, users, trade associations and loss control specialists was also considered.
- 1.3.2 The requirements of this standard reflect tests and practices used to examine characteristics of interior wall and ceiling materials or systems used in smoke sensitive occupancies for the purpose of obtaining Approval. Interior wall and ceiling materials or systems used in smoke sensitive occupancies having characteristics not anticipated by this standard may be FM Approved if performance equal, or superior, to that required by this standard is demonstrated, or if the intent of the standard is met. Alternatively, interior wall and ceiling materials or systems used in smoke sensitive occupancies which meet all of the requirements identified in this standard may not be FM Approved if other conditions which adversely affect performance exist or if the intent of this standard is not met.

1.4 Basis for Approval

Approval is based upon satisfactory evaluation of the product and the manufacturer in the following major areas:

1.4.1 Examination and tests on production samples shall be performed to evaluate

- The suitability of the product;
- The performance of the product as specified by the manufacturer and required by FM Approvals; and as far as practical;
- The durability and reliability of the product.

1.4.2 An examination of the manufacturing facilities and audit of quality control procedures is made to evaluate the manufacturer's ability to consistently produce the product which is examined and tested and the marking procedures used to identify the product. These examinations are repeated as part of FM Approvals' product follow-up program.

1.5 Basis for Continued Approval

Continued Approval is based upon:

- Production or availability of the product as currently FM Approved;
- The continued use of acceptable quality assurance procedures;
- Satisfactory field experience;
- Compliance with the terms stipulated in the Approval report;
- Satisfactory re-examination of production samples for continued conformity to requirements; and
- Satisfactory Surveillance Audits conducted as part of FM Approvals' product follow-up program.

Also, as a condition of retaining Approval, manufacturers may not change a product or service without prior authorization by FM Approvals.

1.6 Effective Date

The effective date of an Approval standard mandates that all products tested for Approval after the effective date shall satisfy the requirements of that standard. Products FM Approved under a previous edition shall comply with the new version by the effective date or else forfeit Approval.

This standard is effective immediately upon publication.

1.7 System of Units

Units of measurement used in this standard are International System (SI) units. These are followed, where applicable, by their arithmetic equivalents in United States (U.S.) customary units, enclosed in parentheses. The first value stated shall be regarded as the requirement. The converted equivalent value may be approximate. Appendix A lists the selected units and conversions to U.S. Customary units for measures appearing in this standard. Conversion of SI units is in accordance with SI10-02 IEEE/ASTM SI 10 American National Standard for Use of the International System of Units (SI): The Modern Metric System.

1.8 Applicable Documents

The following standards, test methods and practices are referenced in this standard:

Approval Standard for Class 1 Fire Rating of Insulated Wall or Wall and Roof/Ceiling Panels, Interior Finish Materials or Coatings, and Exterior Wall Systems, Class Number 4880. FM Approvals, PO Box 9102, Norwood, MA 02062.

Test Standard for FM Approvals Cleanroom Materials Flammability Test Protocol, Class Number 4910. FM Approvals, PO Box 9102, Norwood, MA 02062.

American National Standard for Clean Room Materials Flammability Test Protocol ANSI/FM Approvals 4910. FM Approvals, PO Box 9102, Norwood, MA 02062.

ASTM E84, Test Method for Surface Burning Characteristics of Building Materials, ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA, 19428.

ASTM C167, Standard Test Methods for Thickness and Density of Blanket or Batt Thermal Insulations, ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA, 19428.

ASTM C303, Standard Test Method for Dimensions and Density of Preformed Block and Board-Type Thermal Insulation, ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA, 19428.

ASTM D482, Standard Test Method for Ash from Petroleum Products, ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA, 19428.

ASTM D792, Standard Test Method for Specific Gravity (Relative Density) and Density of Plastics by Displacement, ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA, 19428.

ASTM D1505, Test Method for Density of Plastics by the Density-Gradient Technique, ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA, 19428.

ASTM D1622, Standard Test Method for Apparent Density of Rigid Cellular Plastics, ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA, 19428.

ASTM D1929, Test Method for Determining Ignition Temperature of Plastics, ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA, 19428.

ASTM E2058, Standard Test Methods for Measurement of Synthetic Polymer Material Flammability Using a Fire Propagation Apparatus (FPA), ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA, 19428.

ISO 1716:2002: Reaction-To-Fire Tests for Building Products - Determination of the Heat of Combustion, International Organization for Standardization, Geneva, Switzerland.

TEST PROCEDURE CLASS NUMBER 4880: FM APPROVALS 25 ft (7.6 m) HIGH CORNER TEST. FM Approvals, PO Box 9102, Norwood, MA 02062.

TEST PROCEDURE CLASS NUMBER 4880: FM APPROVALS 50 ft (15.2 m) HIGH CORNER TEST. FM Approvals, PO Box 9102, Norwood, MA 02062.

TEST PROCEDURE CLASS NUMBER 4882: FM APPROVALS 16 ft (4.9m) HIGH PARALLEL PANEL TEST. FM Approvals, PO Box 9102, Norwood, MA 02062.

TEST PROCEDURE UNIFORM BUILDING CODE STANDARD 26-3 ROOM FIRE TEST