



Standard Practice for Application of Sprayed Fire-Resistive Materials (SFRMs)¹

This standard is issued under the fixed designation E1513/E1513M; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

^{ε1} NOTE—Designation was changed to dual and units information was corrected editorially in August 2015.

1. Scope

1.1 This practice covers guidelines for application of sprayed fiber and cementitious fire-resistive materials.

1.2 This practice is general in nature. It is not intended to cover all requirements for application.

1.3 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system are not necessarily exact equivalents; therefore, to ensure conformance with the standard, each system shall be used independently of the other, and values from the two systems shall not be combined.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.* Specific precautionary statements are given in Section 10 and 14.1.2.

1.5 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

E119 Test Methods for Fire Tests of Building Construction and Materials

E605/E605M Test Methods for Thickness and Density of Sprayed Fire-Resistive Material (SFRM) Applied to Structural Members

E631 Terminology of Building Constructions

E736/E736M Test Method for Cohesion/Adhesion of Sprayed Fire-Resistive Materials Applied to Structural Members

E759/E759M Test Method for Effect of Deflection on Sprayed Fire-Resistive Material Applied to Structural Members

E760/E760M Test Method for Effect of Impact on Bonding of Sprayed Fire-Resistive Material Applied to Structural Members

E1368 Practice for Visual Inspection of Asbestos Abatement Projects

3. Terminology

3.1 *Definitions:*

3.1.1 Many items in this practice are defined in Terminology **E631**.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *application, n*—an act of applying sprayed fire-resistive materials.

3.2.2 *sprayed cementitious material, n*—consisting of one or more binders, aggregates, and fibers, the material is mixed with water to form a slurry and is conveyed through a hose to a nozzle where compressed air is typically used to disperse the material into a spray pattern and directed to the substrate requiring protection.

3.2.3 *sprayed fire-resistive materials (SFRM), n*—materials that are sprayed onto substrates to provide fire-resistive protection of the substrates.

¹ This practice is under the jurisdiction of ASTM Committee **E06** on Performance of Buildings and is the direct responsibility of Subcommittee **E06.21** on Serviceability. Current edition approved Aug. 1, 2015/April 1, 2020. Published August 2015/April 2020. Originally approved in 1993. Last previous edition approved in 2014/2015 as **E1513 – 93 (2014)**/**E1513/E1513M – 93 (2015)**^{ε1}. DOI: 10.1520/E1513 – E1513M – 93R15E01-10.1520/E1513_E1513M – 93R20.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

3.2.4 *sprayed mineral fiber material, n*—consisting of one or more binders, fibers, and aggregates, the material is conveyed by low pressure air through a hose to a nozzle where it is mixed with atomized water and directed to the substrate requiring protection.

4. Summary of Practice

4.1 This practice describes the procedures for selecting, specifying, applying, and testing SFRM.

5. Significance and Use

5.1 This practice is intended for use by the material specifier, general contractor, applicator, or any individual group requiring information regarding the application of SFRM.

5.2 This practice is not intended to replace the manufacturers' application instructions.

6. Materials

6.1 The SFRM shall be either sprayed fiber or cementitious types. The material shall be manufactured in accordance with the manufacturer's specifications and quality control procedures. The material shall be free of any contamination that could impair its performance.

7. Storage and Handling

7.1 All materials shall be delivered to the job site in clearly labeled, unopened bags. Labels shall include the manufacturer, product name, surface burning characteristics of the product, and list of appropriate fire resistance classified assemblies in which the product is a component.

7.2 Materials with a shelf life shall be used within that period. Materials that have gone beyond their shelf life shall be removed from the job site, or manufacturer shall provide documentation attesting that the product is still usable for its original intended purpose.

7.3 Materials shall be kept dry until used and stored off the ground under cover.

8. Equipment and Utilities

8.1 Equipment used for application shall be of a type recommended by the SFRM manufacturer. Equipment shall include, but is not limited to: application machine, material mixer, material hoses, stand pipe, and spray nozzles.

8.2 The following utilities are typically provided by the general contractor: electricity, potable water, and lighting.

8.3 The following utilities may be needed depending upon job conditions and, if needed, shall be provided by the general contractor:

8.3.1 Heating (see 12.1.1), and

8.3.2 Forced ventilation (see 12.1.2).

9. Fire Resistance Classifications

9.1 *General*—Required fire resistance classifications are outlined by building codes such as those published by BOCA,³ SBCCI,⁴ ICBO⁵ and enforced by local authorities having jurisdiction. Required fire resistance classifications are determined by construction type, occupancy, and location.

9.2 Architects and material specifiers shall indicate on construction drawings and in specifications the required fire resistance classification(s) for a project. They shall also indicate what elements of that project are to be so protected. (See **Note 1**.)

NOTE 1—The architect and material specifier may indicate on construction drawings and in specifications a reference number for a fire resistance system capable of providing the required protection.

10. Safety

10.1 Current OSHA, applicable local ordinances, or code regulations shall be followed at all times.

10.1.1 Equipment shall have safety guards that meet applicable OSHA regulations in place. Grounded electrical connections shall be used.

10.1.2 *Protective Equipment*—All persons in the application area shall wear protective equipment as required. Examples of equipment that may be needed are: respirators, dust masks, coveralls, goggles or safety glasses, and hard hats.

³ Building Officials and Code Administrators International, available from International Code Council (ICC), 500 New Jersey Ave., NW, 6th Floor, Washington, DC 20001, <http://www.iccsafe.org>.

⁴ Southern Building Code Congress International, Inc., available from International Code Council (ICC), 500 New Jersey Ave., NW, 6th Floor, Washington, DC 20001, <http://www.iccsafe.org>.

⁵ International Conference of Building Officials, available from International Code Council (ICC), 500 New Jersey Ave., NW, 6th Floor, Washington, DC 20001, <http://www.iccsafe.org>.