Designation: E736/E736M – 19

Standard Test Method for Cohesion/Adhesion of Sprayed Fire-Resistive Materials Applied to Structural Members[1]

This standard is issued under the fixed designation E736/E736M; 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.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope

1.1 This test method covers a procedure for measuring the cohesion/adhesion or bond strength (tensile) perpendicular to the surface of sprayed fire-resistive material (SFRM) applied to rigid backing. These fire-resistive materials include sprayed fibrous and cementitious materials. The test method is applicable to both laboratory and field procedures as indicated in Section 7.

1.2 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.

1.3 *This standard does not purport to address all of the safety problems, 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.*

1.4 *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]

E84 Test Method for Surface Burning Characteristics of Building Materials

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

E1494 Practice for Testing Physical Properties of Friable Surfacing Materials

3. Summary of Test Method

3.1 The cohesion/adhesion is determined using a metal or plastic cap with a hook attached. The cap is attached to the SFRM with a suitable adhesive. An increasing load, measured by a scale, is applied manually until failure occurs.

4. Significance and Use

4.1 The intent of this test method is to determine a property of SFRM that may be used to provide an indication of its in-place serviceability. Satisfactory performance of SFRM applied to structural members and assemblies depends upon its ability to withstand the various influences that may occur during construction and during the life of the structure, as well as upon its satisfactory performance under fire conditions.

4.2 For cohesion/adhesion testing of installed asbestos-containing sprayed fire-resistive materials, refer to Practice E1494.

5. Apparatus

5.1 Fig. 1 illustrates a suitable apparatus.

5.2 *Bottle Screw Cap,*[3] metal or rigid plastic 51 to 83 mm [2 to 3¼ in.] in inside diameter and 12 mm [½ in.] in nominal depth. A hook shall be attached at the center. Where deck profile does not allow the use of an 83 mm [3¼ in.] diameter cap due to area restriction, a minimum 51 mm [2 in.] diameter cap shall be used.

[1] This test method is under the jurisdiction of ASTM Committee E06 on Performance of Buildings and is the direct responsibility of Subcommittee E06.21 on Serviceability.

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[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] Refer to Appendix X1.2 for a list of bottle screw cap supply houses that have been found satisfactory for this purpose. Many local suppliers are also available.