



Designation: E760/E760M – 92 (Reapproved 2020)

Standard Test Method for Effect of Impact on Bonding of Sprayed Fire-Resistive Material Applied to Structural Members¹

This standard is issued under the fixed designation E760/E760M; 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 determining the effect of impact loading on the bonding of sprayed fire-resistive material (SFRM) applied to the underside of steel floor deck. These materials include sprayed fibrous and cementitious materials applied directly in contact with the structural members. The test method is applicable only to laboratory procedures.

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 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.*

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](#)

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.

Current edition approved April 1, 2020. Published April 2020. Originally approved in 1980. Last previous edition approved in 2015 as E760/E760M–92 (2015)^{ε1}. DOI: 10.1520/E0760_E0760M–92R20.

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.

[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](#)

[E695 Test Method of Measuring Relative Resistance of Wall, Floor, and Roof Construction to Impact Loading](#)

3. Summary of Test Method

3.1 In this test method, a cellular steel deck with a concrete topping sprayed with fire-resistive material is subjected to a leather bag drop impact while supported horizontally at its ends.

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 The test method measures the behavior of SFRM when the floor construction to which it is applied is subjected to shock loading and evaluates adhesion and resistance to spalling, cracking, and delamination. It is an indication of the ability of SFRM to remain in place and resist removal during anticipated service conditions.

5. Apparatus

5.1 *Supports*—Rigid base to provide at least 50 mm [2 in.] bearing and a clear span between supports of at least 3 m [10 ft].

5.2 *Impact Instrument*—A lead shot- or steel shot-filled leather bag weighing 27.2 kg [60 lb] and equipped with a leather hoisting strap, both as described in Test Method [E695](#).

5.3 *Rule*—To measure the height of drop (1.2 m [4 ft]) with an accuracy of 12.8 mm [$\frac{1}{2}$ in.].