



Standard Test Method of Measuring Relative Resistance of Wall, Floor, and Roof Construction to Impact Loading¹

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^{ε1} NOTE—Units information was editorially corrected in March 2015.

1. Scope

1.1 This test method covers the measurement of the relative resistance of wall, floor, and roof construction to impact loading. The test is not applicable to doors.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

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 and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

D1517 Terminology Relating to Leather

E73 Practice for Static Load Testing of Truss Assemblies

E575 Practice for Reporting Data from Structural Tests of Building Constructions, Elements, Connections, and Assemblies

E631 Terminology of Building Constructions

E661 Test Method for Performance of Wood and Wood-Based Floor and Roof Sheathing Under Concentrated Static and Impact Loads

2.2 Other Standards:

Fed. Spec. V-T-291E(1) Linen Thread³

¹ This test method is under the jurisdiction of ASTM Committee E06 on Performance of Buildings and is the direct responsibility of Subcommittee E06.11 on Horizontal and Vertical Structures/Structural Performance of Completed Structures.

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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 Available from DLA Documents Services, Building 4/D, 700 Robbins Ave., Philadelphia, PA 19111-5094, <http://quicksearch.dla.mil>.

3. Terminology

3.1 *Definitions*—For definitions of terms related to this standard, see Terminology E631.

4. Significance and Use

4.1 The procedures outlined will provide data that can be used to evaluate the relative performance of wall, floor, and roof constructions under conditions representative of those sustained in actual service when subjected to impact by a heavy blunt object. See Test Method E661 for evaluation of floor and roof sheathing and Practice E73 for evaluation of roof trusses.

4.2 The method is intended to be applied to relatively light construction, including, but not limited to, wood floor and roof systems, partitions framed with wood or steel studs, steel floor or roof decking systems, steel siding and wall panels, or thin concrete and masonry walls or slabs and similar assemblies.

5. Summary of Method

5.1 Specimens of wall, floor, and roof construction are subjected to the impact force of a standard impact instrument. Wall sections are tested in the vertical position. Floor and roof sections are tested only in the horizontal position. Because of the inherent differences in the method of applying load, measurements obtained from tests in a horizontal mode are not comparable to measurements obtained from tests in the vertical mode.

6. Apparatus for Floor and Roof Systems, Specimen Horizontal (see Fig. 1)

6.1 *Supports*, steel rollers, two, on a rigid base.

6.2 *Impact Instrument*, made with a shot-filled leather bag as specified in 6.2.1 – 6.2.6. (see Fig. 2.)

6.2.1 *Leather*—The leather used in construction of the bag should be harness leather (Note 1), oak tanned (Note 1) from packer hides (Note 1) or latigo leather (Note 1), alum and vegetable tanned, or both. Leather thickness shall be expressed in ounces (Note 1) (1 oz = 1/4 in. (0.4 mm)).

NOTE 1—See Terminology D1517.