



Designation: D7052/D7052M – 17

Standard Test Method for Determining Impact Resistance of New Low Slope Roof Membranes Using Steel Balls (Z8295Z)¹

This standard is issued under the fixed designation D7052/D7052M; 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 reappraisal. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reappraisal.

1. Scope

1.1 This test method covers the determination of impact resistance of new low slope roof membranes when applied directly over rigid insulation or cover board, or structural concrete, lightweight insulating concrete, gypsum, cementitious wood fiber or wood roof decks. The procedures were developed to determine the potential for puncture or fracture of the new roof membrane resulting from impacts by free falling steel balls resulting in specific impact energies when the new roof membrane is applied over its tested substrate within an assembly.

1.2 This test method is intended to verify that products as described will meet a specific stated condition of impact resistance performance. Testing of asphalt shingles is beyond the scope of this test method. The tests yield classification identified as Class 2 and Class 3.

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 may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

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

2. Referenced Documents

2.1 ASTM Standards:²

A295/A295M Specification for High-Carbon Anti-Friction Bearing Steel

D1079 Terminology Relating to Roofing and Waterproofing
G154 Practice for Operating Fluorescent Ultraviolet (UV) Lamp Apparatus for Exposure of Nonmetallic Materials

3. Terminology

3.1 For definitions of terms used in this standard, see Terminology D1079.

3.2 Definitions:

3.2.1 *adhered roof membrane*—a single ply or base ply (part of a multi-ply system) membrane that is adhered using an adhesive.

3.2.2 *field seam*—a splice made in the field of a roof membrane which joins two sheets together using an adhesive, splicing tape, heat or solvent-welding.

3.2.3 *mechanically fastened membranes*—a single ply or base ply (part of a multi-layer system) membrane which has been positively attached at intervals to the substrate, usually with fasteners and plates, or other mechanical devices such as battens, or both.

4. Classification

4.1 *Class 2*—A designation achieved when a roof membrane subjected to an impact energy of approximately 11.0 ± 0.3 J [8.1 ± 0.2 ft-lb] in accordance to this test method meets the results stated in Section 11.

4.2 *Class 3*—A designation achieved when a roof membrane subjected to an impact energy of approximately 19.4 ± 0.4 J [14.3 ± 0.3 ft-lb] in accordance to this test method meets the results stated in Section 11.

NOTE 1—Class 1 is beyond the scope of this test method.

5. Summary of Test Method

5.1 This test method subjects roof membranes to impacts by dropping a solid steel ball ten times from the appropriate apparatus (Figs. 1 and 2) onto test samples of the roof membrane being examined.

5.2 Roof membrane samples are conditioned in a fluorescent ultraviolet condensation type artificial weathering apparatus.

5.2.1 Impact testing is performed on samples which are conditioned and not conditioned.

¹ This test method is under the jurisdiction of ASTM Committee D08 on Roofing and Waterproofing and is the direct responsibility of Subcommittee D08.20 on Roofing Membrane Systems.

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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.