



Standard Test Method for Evaluating the Engagement Between Windows and Insect Screens as an Integral System¹

This standard is issued under the fixed designation E 1748; 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.

1. Scope

1.1 This test method covers the evaluation of the static load resistance of an insect screen in its functional position in a window under load conditions prescribed by appropriate specifying authorities.

1.2 This test method is applicable to insect screens larger than 12 in. (300 mm) in least dimension that can be accessed from both the interior and exterior direction when the insect screen is in the functional position.

1.3 This test method evaluates both the interior and exterior static load resistance of the insect screen attachment to the window frame.

1.4 This test method describes the apparatus and the procedure to be used for applying static loads to specimens.

1.5 The values stated in inch-pound units are to be regarded as the standard. The SI values given in parentheses are for information only.

1.6 *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:

E 631 Terminology of Building Construction²

2.2 ANSI Standard:

ANSI/SMA 6001 Specifications for Metal Protection Screens³

2.3 Screen Manufacturer's Association Standard:

SMA/SMT 31 Testing Procedures and Equipment Bulletin for Attachment of Screening to Frame⁴

3. Terminology

3.1 Definitions—Definitions are in accordance with Terminology E 631, unless otherwise indicated.

nology E 631, unless otherwise indicated.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *engagement*—the physical state of clearances or interferences of an insect screen attached to or contained within a window unit.

3.2.2 *insect screen*—a frame holding a woven netting of sufficient strand diameter and spacing to allow ventilation while providing some degree of protection against insects.

4. Summary of Test Method

4.1 This test method consists of installing a window unit with its insect screen(s) in the functional position into a test frame and then applying a specified static load to the insect screen for a duration of 60 s in both the interior and exterior directions.

5. Significance and Use

5.1 This test method is a design tool to evaluate the engagement between the window and insect screen under static loading. The ability of insect screens to remain engaged depends on the magnitude, duration, repetition of loads, and the method of engagement. The platen size and shape were chosen to prevent screen cloth damage during static loading. The 60-s duration was arbitrarily chosen to standardize this test method.

5.2 This test method is not intended for evaluating retention of woven screen mesh to a screen frame.

NOTE 1—The procedure described in SMA/SMT 31 is one method that has been developed for such evaluation.

5.3 This test method is not intended for evaluating retention of security or protection screens used as a deterrent against vandalism or forced entry.

NOTE 2—The procedure described in ANSI/SMA 6001 is one method that has been developed for such evaluation.

5.4 This test method is not intended for evaluating the retention of insect screens being used as a restraint of occupants within the building as a means of preventing accidental falls.

5.5 This test method is not intended for evaluating retention of insect screens for their ability to withstand impacts from windborne debris as might develop during hurricanes or other windstorm events.

¹ This test method is under the jurisdiction of ASTM Committee E-6 on Performance of Buildings and is the direct responsibility of Subcommittee E06.51 on Component Performance of Windows, Curtain Walls, and Doors.

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² *Annual Book of ASTM Standards*, Vol 04.07.

³ Available from American National Standards Institute, 11 W. 42nd St., 13th Floor, New York, NY 10036.

⁴ Available from Screen Manufacturer's Assn., 3950 N. Lakeshore Dr., Chicago, IL 60613-3431.