



Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials¹

This standard is issued under the fixed designation E1886; 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 performance of exterior windows, curtain walls, doors, and impact protective systems impacted by missile(s) and subsequently subjected to cyclic static pressure differentials. A missile propulsion device, an air pressure system, and a test chamber are used to model some conditions which may be representative of windborne debris and pressures in a windstorm environment. This test method is applicable to the design of entire fenestration or impact protection systems assemblies and their installation. The performance determined by this test method relates to the ability of elements of the building envelope to remain unbreached during a windstorm.

NOTE 1—Exception: Exterior garage doors and rolling doors are governed by ANSI/DASMA 115 and are beyond the scope of this test method.

1.2 The specifying authority shall define the representative conditions (see 10.1).

1.3 The values stated in SI units are to be regarded as the standard. Values given in parentheses are for information only. Certain values contained in reference documents cited herein may be stated in inch-pound units and must be converted by the user.

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. Specific hazard statements are given in Section 7.*

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

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2. Referenced Documents

2.1 ASTM Standards:²

E330 Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference

E631 Terminology of Building Constructions

E997 Test Method for Structural Performance of Glass in Exterior Windows, Curtain Walls, and Doors Under the Influence of Uniform Static Loads by Destructive Methods

E1233 Test Method for Structural Performance of Exterior Windows, Doors, Skylights, and Curtain Walls by Cyclic Air Pressure Differential

E1996 Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricanes

2.2 ASCE/SEI Standard:³

ASCE/SEI 7 American Society of Civil Engineers Minimum Design Loads for Buildings and Other Structures

2.3 American Lumber Standard:⁴

Document PS20-94 American Softwood Lumber Standard

2.4 ANSI/DASMA Standard:⁵

ANSI/DASMA 115 Standard Method for Testing Sectional Garage Doors and Rolling Doors: Determination of Structural Performance Under Missile Impact and Cyclic Wind Pressure

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 American Society of Civil Engineers (ASCE), 1801 Alexander Bell Dr., Reston, VA 20191, <http://www.asce.org>.

⁴ Available from American Lumber Standard Committee, Inc. (ALSC), P.O. Box 210, Germantown, MD 20875-0210, <http://www.alsc.org>.

⁵ Available from Door & Access Systems Manufacturers Association International (DASMA), 1300 Sumner Avenue, Cleveland, OH 44115-2851, <http://www.dasma.com>.