



Standard Specification for the Performance of Glass in Permanent Glass Railing Systems, Guards, and Balustrades¹

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1. Scope

1.1 This specification covers glass in permanent railing systems, guards and balustrades installed in agricultural, assembly, commercial, educational, industrial, institutional, recreational, and residential buildings.

1.2 This specification is intended to be applied to permanent glass railing systems for buildings and to such railing systems, rails, guards and balustrades having major structural components made of glass, or the secondary components such as infill or balusters made of glass.

1.3 This specification considers that the overall outlook is based on the health and safety of all potential users of buildings. The criteria incorporated in this specification provide for normal and anticipated building uses, but not for abuses for which the building and its components are not designed.

1.4 This specification establishes basic minimum requirements and criteria that lead to satisfactory products under normal use conditions and does not give consideration to design criteria for specific field conditions, the establishment of which is the prerogative and responsibility of the designer, specification writer, and regulatory agencies.

1.5 *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 to determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

E631 Terminology of Building Constructions

¹ This specification is under the jurisdiction of ASTM Committee E06 on Performance of Buildings and is the direct responsibility of Subcommittee E06.56 on Performance of Railing Systems and Glass for Floors and Stairs.

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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.

E2025 Test Method for Evaluating Fenestration Components and Assemblies for Resistance to Impact Energies

F1233 Test Method for Security Glazing Materials And Systems

E935 Test Methods for Performance of Permanent Metal Railing Systems and Rails for Buildings

E1481 Terminology of Railing Systems and Rails for Buildings

E2353 Test Methods for Performance of Glazing in Permanent Railing Systems, Guards, and Balustrades

2.2 Other Standards:

ANSI Z97.1 Glazing Materials Used in Buildings, Safety Performance Specifications and Methods of Test³

CPSC 16 CFR Part 1201 Architectural Glazing Materials, Federal Register⁴

3. Terminology

3.1 *Definitions:* General terms used in this standard test method are defined in Terminologies **E631** and **E1481**. Terms common to this standard test method and referenced test methods are defined in the respective document unless defined herein.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *Failure Load*—A load, which, if placed upon a structure or test piece, is just great enough to break it.

3.2.2 *Glazing Retention*—the property of maintaining the glass or glazing material, post breakage, in a system, such that the glass must be held in the framing system with no opening sufficient to pass a 76 mm (3 in.) solid steel sphere through the system using a horizontally applied force of 18 N (4.0 lbs).

3.2.3 *Guard System*—A protective railing system along the outer edges of locations of an accessible roof, parapet, balcony, landing, platform or ramp, designed to minimize the probability of an accidental fall from the walking surface.

3.2.4 *Interlayer*—a layer of material acting as an adhesive between lites of glazing, which adds additional performance

³ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036.

⁴ Available from U.S. Consumer Product Safety Commission (CPSC), 4330 East-West Hwy., Bethesda, MD 20814.