



Standard Specification for Ball Drop Impact Resistance of Laminated Architectural Flat Glazing¹

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1. Scope

1.1 This specification covers the destructive ball drop testing of laminated flat glass products intended for use in architectural glazing applications.

1.2 This specification is intended for use as an in-plant quality control test to evaluate the impact performance of laminated flat glass when a 2.3 kg, 83 mm diameter smooth solid steel ball is dropped from a specified height.

1.3 This specification does not yield data that is a substitute for safety glazing test requirements of ANSI Z97.1 or CPSC 16 CFR 1201. Qualification under this specification provides a basis for judgment of the ability of specimens to withstand the appropriate shot-bag impact. This specification provides a mechanism to allow fabricators a less cumbersome and lower cost method for the evaluation of impact performance that may be performed on a frequent basis while reducing the amount of waste materials generated from traditional impact tests.

1.4 This specification is applicable to symmetrical and asymmetrical annealed, heat-strengthened, chemically strengthened, fully tempered laminated architectural flat glass including but not limited to: float, patterned, sheet, sand-blasted, grooved, and fritted.

1.5 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

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. Some specific hazards statements are given in Section 4 on Hazards.*

¹ This specification is under the jurisdiction of ASTM Committee F12 on Security Systems and Equipment and is the direct responsibility of Subcommittee F12.10 on Systems Products and Services.

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2. Referenced Documents

2.1 *ASTM Standards:*²

[C162 Terminology of Glass and Glass Products](#)

[C1036 Specification for Flat Glass](#)

[C1048 Specification for Heat-Strengthened and Fully Tempered Flat Glass](#)

[C1172 Specification for Laminated Architectural Flat Glass](#)

[C1422 Specification for Chemically Strengthened Flat Glass](#)

[E631 Terminology of Building Constructions](#)

[F3007](#)

2.2 *ANSI Standards:*³

[Z26.1 American National Standard for Safety Glazing Materials for Glazing Motor Vehicles and Motor Vehicle Equipment Operating on Land Highways—Safety Standard](#)

[Z97.1 American National Standard for Safety Glazing Materials Used in Buildings—Safety Performance Specification and Methods of Test](#)

2.3 *Other Standards:*

[CPSC 16 CFR 1201 Safety Standard for Architectural Glazing Materials](#)⁴

[GANALD-100-06 Standard Test Method for Ball Drop Impact of Laminated Architectural Flat Glass](#)⁵

3. Terminology

3.1 *Definitions:*

3.1.1 For definition of terms used in this specification, refer to Terminologies [C162](#) and [E631](#).

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 National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

⁴ Available from U.S. Consumer Product Safety Commission (CPSC), 4330 East West Hwy., Bethesda, MD 20814, <http://www.cpsc.gov>.

⁵ Available from Glass Association of North America (GANA), Laminating Division, 2945 SW Wanamaker Dr., Suite A, Topeka, KS 66614-5321, <http://www.glasswebsite.com>.