



Designation: E2461 – 12 (Reapproved 2017)

Standard Practice for Determining the Thickness of Glass in Airport Traffic Control Tower Cabs¹

This standard is issued under the fixed designation E2461; 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 practice covers the determination of the thickness of glass installed in airport traffic control towers (ATCT) to resist a specified design loading with a selected probability of breakage less than or equal to either 1 lite per 1000 or 4 lites per 1000 at the first occurrence of the design wind loading.

1.2 The procedures apply to common outward sloping cab glass designs for which the specified loads do not exceed 10 kPa (210 psf).

1.3 The procedures assume control tower cab glass has an aspect ratio no greater than 2.

1.4 The procedures assume control tower cab glass has an area no less than 1.86 square metres (20 square feet).

1.5 The procedures apply only to annealed monolithic, annealed laminated, or annealed insulating glass having a rectangular or trapezoidal shape.

1.6 The use of the procedures assumes the following:

1.6.1 Annealed monolithic and annealed laminated glass installed in ATCTs shall have continuous lateral support along two parallel edges, along any three edges, or along all four edges;

1.6.2 Insulating glass shall have continuous lateral support along all four edges; and

1.6.3 Supported glass edges are simply supported and free to slip in plane.

1.7 The procedures do not apply to any form of wired, patterned, etched, sandblasted, or glass types with surface treatments that reduce the glass strength.

1.8 The procedures do not apply to any form of heat treated glass, chemically strengthened glass, or any type of glass with surface treatments intended to increase the glass strength.

1.9 The procedures address the determination of thickness and construction type to resist a specified design wind load at

a selected probability of breakage. The final glass thickness and construction determined also depends upon a variety of other factors (see 5.3).

1.10 These procedures do not address blast loading on glass.

1.11 The values stated in SI units are to be regarded as standard. The values given in parentheses are mathematical conversions to inch-pound units that are provided for information only and are not considered standard.

1.12 *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.*

1.13 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

C162 Terminology of Glass and Glass Products

C1036 Specification for Flat Glass

E631 Terminology of Building Constructions

E1300 Practice for Determining Load Resistance of Glass in Buildings

2.2 *American Society of Civil Engineers Standard:*³

ASCE 7 Minimum Design Loads for Buildings and Other Structures

3. Terminology

3.1 *Definitions:*

3.1.1 For definitions of general terms related to building construction used in this practice refer to Terminology **E631**,

¹ This practice is under the jurisdiction of ASTM Committee **E06** on Performance of Buildings and is the direct responsibility of Subcommittee **E06.52** on Glass Use in Buildings.

Current edition approved April 1, 2017. Published April 2017. Originally approved in 2005. Last previous edition in 2012 as E2461-12. DOI: 10.1520/E2461-12R17.

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>.