



Standard Test Method for Determining the Tensile Properties of an Insulating Glass Edge Seal for Structural Glazing Applications¹

This standard is issued under the fixed designation C1265; 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 a laboratory procedure for quantitatively measuring the tensile strength, stiffness, and adhesion properties of insulating glass edge seals that are used in structural sealant glazing applications. Edge seals for these applications use a structural sealant to bond both glass lites and the edge spacer into a monolithic sealed insulating glass unit. In typical applications, the structural sealant acts to hold the outside lite in place under wind and gravity load and to maintain the edge spacer in its proper position. Hereafter, the term “insulating glass” will be abbreviated as “IG.”

1.2 The characterization of the IG secondary sealant properties, as defined by this test method, are strongly dependent on glass and edge spacer cleaning procedures, IG spacer profile, location of spacer, and primary IG sealant application. Users of this test method must recognize that the IG edge seal assembly influences the secondary sealant properties.

1.3 The values determined by this test method will be characteristic of the particular edge seal assembly that is tested.

NOTE 1—Presently, only elastomeric, chemically curing silicone sealants specifically formulated for use as the secondary seal of IG units are recognized as having the necessary durability for use in structural sealant glazing applications.

1.4 The values stated in SI (metric) units are to be regarded as the standard. The inch-pound values given in parentheses are approximate equivalents, provided for information purposes.

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 determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards*:²

C717 Terminology of Building Seals and Sealants

3. Terminology

3.1 *Definitions*—Refer to Terminology C717 for definitions of the following terms used in this test method: *adhesive failure, cohesive failure, elastomeric, glazing, lite, primer, seal, sealant, silicone sealant, structural sealant, substrate.*

4. Summary of Test Method

4.1 Five specimens are fabricated to duplicate the edge seal design of an IG unit for structural glazing applications. After the secondary structural sealant is cured the specimens are tested to failure in tension. Testing is conducted at $23 \pm 2^\circ\text{C}$ ($74 \pm 3.6^\circ\text{F}$) at a rate of 5 ± 0.5 mm (0.2 ± 0.02 in.) per minute. Strength, load-displacement response, failure mode, and primary IG edge seal behavior are recorded.

5. Significance and Use

5.1 Frequently IG units are adhered with a structural sealant to a metal framing system. In such applications, only the inward lite of glass is usually adhered to the frame. As a result, a significant portion of any outward-acting or negative wind load must be carried in tension by the joint seal between the two lites of the IG unit. This test will not provide information on the integrity of the IG unit primary seal; however, it may provide data on load sharing between the primary IG vapor seal and the secondary structural sealant.

5.2 Although this test method prescribes one environmental condition, other environmental conditions and exposure cycles can be employed for specific project evaluation. Such deviations should be described when reporting the data.

¹ This test method is under the jurisdiction of ASTM Committee of C24 on Building Seals and Sealants and is the direct responsibility of Subcommittee C24.30 on Adhesion.

Current edition approved Dec. 1, 2011. Published December 2011. Originally approved in 1994. Last previous edition approved in 2005 as C1265-94(2005) ^{ε1}. DOI: 10.1520/C1265-94R11.

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.