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Standard Guide for Secondary Seal for Sealed Insulating Glass Units for Structural Sealant Glazing Applications[1]

This standard is issued under the fixed designation C 1249; 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 guide covers design and fabrication considerations for the edge seal of conventionally sealed insulating glass units, herein referred to as IG units. The IG units described are used in structural silicone sealant glazing systems, herein referred to as SSG systems. SSG systems typically are either two or four sided, glazed with a structural sealant. Other conditions such as one, three, five, six sided may be used.

1.2 This guides does not cover the IG units of other than conventional edge seal design (Fig. 1); however, the information contained herein may be of benefit to the designers of such IG units.

1.3 In an SSG system, IG units are retained to a metal framing system by a structural seal (Fig. 2). The size and shape of that seal, as well as numerous other SSG system design considerations, are not addressed in this guide.

1.4 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.5 *This standard does not purport to address all of the safety problems, 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:*

C 639 Test Method for Rheological (Flow) Properties of Elastomeric Sealants[2]

C 679 Test Method for Tack-Free Time of Elastomeric Sealants[2]

C 717 Terminology of Building Seals and Sealants[2]

C 794 Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants[2]

C 1087 Test Method for Determining Compatibility of Liquid-Applied Sealants with Accessories Used in Structural Glazing Systems[2]

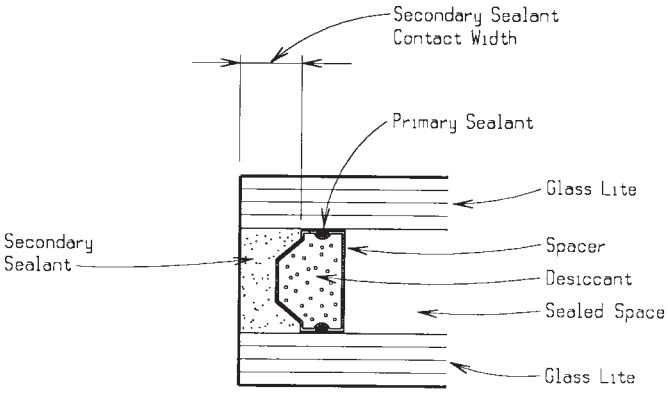

FIG. 1 Sealed IG Edge Seal: Basic Components

C 1135 Test Method for Determining Tensile Adhesion Properties of Structural Sealants[2]

C 1184 Specification for Structural Silicone Sealants[2]

E 631 Terminology of Building Constructions[2]

E 773 Test Method for Seal Durability of Sealed Insulating Glass Units[2]

E 774 Specification for Sealed Insulating Glass Units[2]

2.2 *Other Standards:*

Sigma 73-8-2B Test Methods for Chemical Effects of Glazing Compounds on Elastomeric Edge Seals[3]

3. Terminology

3.1 *Definitions:*

3.1.1 Refer to Terminology C 717 for definitions of the following terms used in this guide: adhesive failure, bead, cohesive failure, compatibility, cure, elongation, gasket, glazing, joint, lite, modulus, non-sag sealant, seal, sealant, sealant backing, setting block, shelf-life, silicone sealant, spacer, structural sealant, substrate, tooling, and working life. Refer to Terminology E 631 for the definition of sealed insulating glass as used in this guide.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *desiccant*—a hygroscopic material that adsorbs water or may adsorb solvent vapors, or both (see Fig. 1).

3.2.1.1 *Discussion*—The desiccant maintains a low relative humidity in sealed insulating glass.

[1] This guide is under the jurisdiction of ASTM Committee C24 on Building Seals and Sealants and is the direct responsibility of Subcommittee C24.10 on Specifications, Guides and Practices.

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[2] *Annual Book of ASTM Standards*, Vol 04.07.

[3] Available from SIGMA, 111 E. Wacker Dr., Ste. 600, Chicago, IL 60601.

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