



Standard Guide for Use of Silicone Sealants for Protective Glazing Systems¹

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1. Scope

1.1 This guide covers the use of silicone sealants in protective glazing systems for building construction. Protective glazing includes systems designed for use in applications subject to natural disasters such as hurricanes, earthquakes, windstorms and forms of forced entry such as blasts, burglary, and ballistic attack.

1.2 While other glazing accessories and components are used in protective glazing, this document specifically describes the use of silicone sealants for protective glazing systems.

1.3 This guide provides information useful to design professionals, architects, manufacturers, installers, and others for the design and installation of silicone sealants for protective glazing systems.

1.4 A silicone sealant is only one component of a glazing system. A glazing system that meets the testing and code requirement for impact glazing must successfully integrate the frame and its anchorage, glass, or other glazing materials, protective film or interlayer and silicone sealant into a high performance system. Compliance with code or other requirements can be determined through physical testing of the glazing system or through computer simulation.

1.5 Glazing systems using silicone sealants that have successfully met the test requirements for missile impact and bomb blast test requirements incorporate the use of silicone sealants specifically formulated, tested, and marketed for this application. Sealants that are commonly used today comply with Specifications **C920** and **C1184**.

1.6 This guide does not discuss sealants intended to protect against radioactivity or provide biological containment.

1.7 The committee with jurisdiction over this standard is not aware of any comparable standards published by other organizations.

1.8 *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 requirements prior to use.

2. Referenced Documents

2.1 ASTM Standards:²

C717 Terminology of Building Seals and Sealants

C719 Test Method for Adhesion and Cohesion of Elastomeric Joint Sealants Under Cyclic Movement (Hockman Cycle)

C794 Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants

C920 Specification for Elastomeric Joint Sealants

C1087 Test Method for Determining Compatibility of Liquid-Applied Sealants with Accessories Used in Structural Glazing Systems

C1135 Test Method for Determining Tensile Adhesion Properties of Structural Sealants

C1184 Specification for Structural Silicone Sealants

C1193 Guide for Use of Joint Sealants

C1394 Guide for In-Situ Structural Silicone Glazing Evaluation

C1401 Guide for Structural Sealant Glazing

C1472 Guide for Calculating Movement and Other Effects When Establishing Sealant Joint Width

D624 Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers

E631 Terminology of Building Constructions

E1886 Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials

F1642 Test Method for Glazing and Glazing Systems Subject to Airblast Loadings

2.2 GSA Standard:

US General Services Administration (GSA) Standard Test Method for Glazing and Window Systems Subject to Dynamic Overpressure Loading³

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 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 U.S. General Services Administration (GSA), 1800 F Street, NW Washington, DC 20405