



Designation: C1635 – 22

Standard Test Method to Evaluate Adhesion/Cohesion Properties of a Sealant at Fixed Extension¹

This standard is issued under the fixed designation C1635; 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 describes a laboratory procedure for measuring the adhesion/cohesion properties of a sealant when subjected to tensile loads resulting from an applied specified strain. The adhesion/cohesion properties are evaluated before, during, and after water immersion.

1.2 This test method examines the adhesive and cohesive performance of a sealant on a specified substrate at a strain equivalent to a multiple of the strain/movement capability (Class in accordance with Specification C920) designated by the manufacturer for the given sealant in accordance with Specification C920.

1.3 The values stated in SI units are to be regarded as standard. The values given in parentheses after SI units are provided for information only and are not considered standard.

1.4 *Comparable Tests*—Other comparable tests are ISO 10590 and 8340.

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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.6 *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

C717 Terminology of Building Seals and Sealants

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

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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.

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

C920 Specification for Elastomeric Joint Sealants

C1375 Guide for Substrates Used in Testing Building Seals and Sealants

2.2 ISO Standards:³

ISO 8340 Building construction — Sealants — Determination of tensile properties at maintained extension

ISO 10590 Building construction — Sealants — Determination of tensile properties of sealants at maintained extension after immersion in water

3. Terminology

3.1 *Definitions*—Refer to Terminology C717 for definitions of terms used in this standard, including but not limited to the following: adhesive failure, casting spacers, cohesive failure, standard conditions.

3.2 *separators*—the device or item used to maintain the specimens at fixed extension.

4. Summary of Test Method

4.1 Test specimens made in accordance with dimensions set forth in Test Method C719 are fabricated and allowed to cure.

4.2 Test specimens are extended at standard conditions as defined in Terminology C717 to a specified strain and blocked at the strain for a specified period of time.

4.3 The test specimens are examined for adhesive or cohesive failure, or both, of the sealant at 0, 24 and 168 h.

4.4 A duplicate set of three test specimens are cured at standard conditions as defined in Terminology C717, extended to a specified strain, and then immersed (totally) in deionized water or specified medium (3 specimens/liter of liquid).

4.5 Immersed test specimens are observed at 0, 24 and 168 and other additional specified hours.

³ Available from International Organization for Standardization (ISO), ISO Central Secretariat, Chemin de Blandonnet 8, CP 401, 1214 Vernier, Geneva, Switzerland, <https://www.iso.org>.