



Designation: **C910–06 (Reapproved 2011) C910 – 16**

Standard Test Method for Bond and Cohesion of One-Part Elastomeric Solvent Release-Type Sealants¹

This standard is issued under the fixed designation C910; 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 determines the bond and cohesion of one-part, elastomeric, solvent release-type sealants after high- and low-temperature aging.

1.2 The subcommittee with jurisdiction is not aware of any similar ISO standard.

1.3 *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.*

NOTE 1—Currently there is no ISO standard similar to this test method.

2. Referenced Documents

2.1 *ASTM Standards:*²

C717 Terminology of Building Seals and Sealants

D1191 Test Method for Concrete Joint Sealers (Withdrawn 1996)³

E145 Specification for Gravity-Convection and Forced-Ventilation Ovens

3. Terminology

3.1 *Definitions*—Refer to Terminology **C717** for definitions of the following terms used in this test method: elastomer, elastomeric, sealant, standard conditions, solvent-release sealant.

4. Apparatus

4.1 *Extension Machine*, as shown in Fig. 1, so designed that the test specimen can be automatically extended at a constant rate of 3.18 mm (1/8 in.)/h from a joint width of 12.7 mm (1/2 in.) to 14.29 mm (9/16 in.) at $-23 \pm 3^\circ\text{C}$ ($-10 \pm 5^\circ\text{F}$).

4.2 *Oven*, forced-draft type, having temperature controlled at $70 \pm 2^\circ\text{C}$ ($158 \pm 3.6^\circ\text{F}$). See Specification **E145**.

4.3 *Oven*, convection type, having temperature controlled at $50 \pm 1^\circ\text{C}$ ($122 \pm 2^\circ\text{F}$).

4.4 *Freezer Chest or Cold Box*, having temperature controlled at $-23 \pm 3^\circ\text{C}$ ($-10 \pm 5^\circ\text{F}$).

4.5 *Mortar Blocks*, six, prepared as described in Test Methods **D1191**, except that the blocks shall be approximately 25.4 mm (1 in.) wide by 76.2 mm (3 in.) long by 25.4 mm (1 in.) thick and surfaced by wet grinding on an iron lap with No. 60 silicon carbide or aluminum oxide grain.

4.6 *Plates*, six, of water-white polished float or plate glass approximately 25.4 mm (1 in.) wide by 76.2 mm (3 in.) long by 6.35 mm (1/4 in.) thick.

4.7 *Aluminum Alloy Plates*, six, 6063-T5 or 6061-T6 clear anodized a minimum of 20 min over a scale-free finish, approximately 25.4 mm (1 in.) wide by 76.2 mm (3 in.) long by 6.35 mm (1/4 in.) thick.

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. Current edition approved Dec. 1, 2011; Jan. 15, 2016. Published January 2012; March 2016. Originally approved in 1979. Last previous edition approved in 2006 as **C910-06(2011)**. DOI: 10.1520/C0910-06R11-10.1520/C0910-16.

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 The last approved version of this historical standard is referenced on www.astm.org.



NOTE 1—Three-dimensional view of compression-extension machine with automatic control units shows four specimens ready for compression-extension cycling.

FIG. 1 Compression-Extension Machine

<https://standards.iteh.ai/catalog/standards/sist/cb028fce-b01a-4ed2-894e-6bbb71fe1be4/astm-c910-16>

4.8 *Polyethylene Spacer Bars*, nine, approximately 12.7 mm (½ in.) by 12.7 mm (½ in.) by 50.8 mm (2 in.), 18 bars 12.7 mm (½ in.) by 12.7 mm (½ in.) by 25.4 mm (1 in.) and 18 bars 14.29 mm (⅞ in.) by 6.35 mm (¼ in.) by 25.4 mm (1 in.).

5. Reagents

5.1 *Acetone or Methyl Ethyl Ketone Solvents.*

5.2 *Detergent Solution.*^{4,5}

5.3 *Distilled Water.*

6. Sampling

6.1 Take all test specimens from a previously unopened container.

7. Procedure

7.1 Clean the glass and aluminum plate first with solvent, with detergent solution, followed by a final rinse with distilled water. Allow plates to air dry. Prepare the six mortar blocks as described in 4.5.

7.2 Precondition the unopened containers of sealant at $23 \pm 2^\circ\text{C}$ ($73.4 \pm 3.6^\circ\text{F}$) and $50 \pm 5\%$ relative humidity standard conditions for a minimum of 24 h.

⁴ Neodol 25-35, a registered trademark of Shell Oil Co., One Shell Plaza, Houston, TX 77002, has been found suitable.

⁵ Dawn, a registered trademark of Proctor and Gamble Co., P.O. Box 579, Cincinnati, OH 54201, or Palmolive Green, a registered trademark of Colgate Palmolive Co., 300 T. Park Ave., New York, New York, have been found suitable for this purpose.