



Standard Test Method for Extrusion Rate of Elastomeric Sealants¹

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1. Scope

1.1 This test method covers two laboratory procedures for determining the extrusion rate of elastomeric sealants for use in building construction.

1.2 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the 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.*

1.4 There is no known ISO equivalent to this test method.

2. Referenced Documents

2.1 *ASTM Standards:*²

C717 Terminology of Building Seals and Sealants

D1475 Test Method For Density of Liquid Coatings, Inks, and Related Products

D2452 Test Method for Extrudability of Oil- and Resin-Based Caulking Compounds

3. Terminology

3.1 *Definitions*—See Terminology **C717** for applicable definitions of the following terms: caulking, compound, elastomeric and nonsag sealant, sealant, latex sealant.

4. Significance and Use

4.1 Sealants are supplied with various rheological properties ranging from pourable liquids to nonsagging pastes. Single-

component sealants are supplied ready for use upon opening the container. Multicomponent sealants are supplied as a base component(s) and a curing agent separately packaged. After mixing the two or more parts, the sealant is ready for application. This test method is intended to provide a means to measure the extrusion rate spanning the range of rheological properties.

4.2 This test method also covers the option of measuring the freeze-thaw and heat stability of such sealants.

4.3 This test method provides for an option of either a metal or plastic nozzle. It is intended that the metal nozzle be used when greater precision is required, such as in ASTM specifications. The plastic nozzle may be used for general screening of sealant properties or for developmental purposes when a large number of test specimens are being tested.

4.4 This test method measures the volume of sealant extruded over a given period of time at a given pressure (kPa or psi).

5. Apparatus

5.1 *High Density Polyethylene Cartridge*, with plunger and cap, 177 mL [6 fluid oz] capacity, with the front end having an inside diameter of 13.7 ± 0.05 mm [0.540 ± 0.002 in.].

5.2 *Nozzle*.

5.2.1 *Metal Nozzle*, threaded to fit threaded end of polyethylene cartridge with the dimensions given in **Fig. 1**.

5.2.2 *Polyethylene Cartridge Nozzle*, 64 mm [$2 \frac{1}{2}$ in.] in length with 3-mm [$\frac{1}{8}$ in.] orifice

5.3 *Air Supply*, to provide 280 ± 7 kPa [40 ± 1 psi] pressure with appropriate fittings and air lines to attach to an air powered gun for convenience of use.

5.4 *Caulking Gun*, 177 mL [6 fluid oz] capacity, air powered.

5.5 *Freezer*, capable of maintaining $-17 \pm 1^\circ\text{C}$ [$0 \pm 2^\circ\text{F}$].

5.6 *Circulating Air Oven*, capable of maintaining $50 \pm 1^\circ\text{C}$ [$122 \pm 2^\circ\text{F}$].

5.7 *Time Device*, a clock or stop-watch graduated in seconds.

5.8 *Small Container*, can, cup, and so forth, as receiver for extruded sealant.

¹ This test method is under the jurisdiction of ASTM Committee C24 on Building Seals and Sealants and is the direct responsibility of Subcommittee C24.20 on General Test Methods.

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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.