



Designation: C 1183 – 91 (Reapproved 1997)

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 states in metric units are to be regarded as the standard. The values in parentheses are for information only.

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.*

2. Referenced Documents

- 2.1 *ASTM Standards:*
 - C 717 Terminology of Building Seals and Sealants²
 - D 1475 Test Method for Density of Liquid Coatings, Inks and Related Products³
 - D 2452 Test Method for Extrudability of Oil- and Resin-Base Caulking Compounds²

3. Terminology

3.1 *Definitions*—See Terminology C 717 for applicable definitions of the following terms: caulking, compound, elastomeric and nonsag sealant, 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 measures the volume of sealant extruded in 1 min at a given pressure (kPa or psi).

5. Classification of Sealants

5.1 The sealant shall be classified by type as follows:

- 5.1.1 *Type S*—single-component sealant, and
- 5.1.2 *Type M*—multi-component sealant.

6. Apparatus

6.1 *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.).

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

6.3 *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.

6.4 *Caulking Gun*, 177 mL (6 fluid oz) capacity, air powered.

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

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

6.7 *Balance*, accurate to ± 0.1 g (0.035 oz).

6.8 *Pycnometer*, or suitable apparatus to obtain a specific gravity.

6.9 *Thermometer*.

6.10 *Spatula*.

7. Test Conditions

7.1 Unless otherwise specified by those authorizing the tests, standard conditions for all tests are $23 \pm 2^\circ\text{C}$ ($73.4 \pm 3.6^\circ\text{F}$) and $50 \pm 5\%$ relative humidity.

8. Procedure

8.1 *Type S (Single-Component)*

8.1.1 Condition the unopened container of sealant for at least 16 h at standard conditions.

8.1.2 Determine the specific gravity of the sealant as described in Test Method D 2452 or D 1475, or use another scientifically correct technique.

8.1.3 Place a sufficient amount of sealant into the polyethylene cartridge to fill it completely with the plunger in place, and level with the back of the cartridge.

NOTE 1—The cartridge filling is most easily accomplished by extruding the sealant into the test cartridge through the nozzle end. Avoid any air entrapment as this will significantly affect the accuracy of the results.

¹ This test method is under the jurisdiction of ASTM Committee C-24 on Building Seals and Sealants and is the direct responsibility of Subcommittee C24.20 on General Test Methods.

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

³ *Annual Book of ASTM Standards*, Vol 06.01.