



## Standard Test Method for Heat Resistance of Hot-Applied Sealants Under Dead Load Shear<sup>1</sup>

This standard is issued under the fixed designation C 1367; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope

1.1 This test method covers a laboratory procedure for determining the heat resistance of hot-applied sealants, herein referred to as sealant. This test method is conducted under dead load in a shear mode.

1.2 The values stated in SI units are to be regarded as the standard. The values given in parentheses are provided for information purposes 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:

- B 209 Specification for Aluminum and Aluminum-Alloy Sheet and Plate<sup>2</sup>
- C 717 Terminology of Building Seals and Sealants<sup>3</sup>
- C 1036 Specification for Flat Glass<sup>4</sup>

### 3. Terminology

3.1 *Definitions*—Definitions of the following terms used in this test method are found in Terminology C 717, 4.1: adhesive failure, cohesive failure, hot-applied sealant, sealant, and substrate.

3.2 *Definitions of Terms Specific to This Standard*—Definitions of the following terms used in this test method are found in Terminology C 717, 4.2: applicator and specified temperature.

### 4. Summary of Test Method

4.1 The hot-applied sealant is placed between glass and aluminum substrates. The specimen is heated in shear mode with a weight suspended from the specimen. The time that it takes for the specimen to fail is recorded.

### 5. Significance and Use

5.1 Sealants are generally subjected to stresses in end-use applications. This test method measures the heat resistance of sealants when subjected to dead load shear stresses while under heat.

### 6. Apparatus

6.1 *Applicator<sup>5</sup> or Oven*, capable of maintaining the sealant within  $\pm 2.8^\circ\text{C}$  ( $\pm 5^\circ\text{F}$ ) of the specified temperature.

6.2 *Substrates*:

6.2.1 Annealed glass that is 25.4 mm wide by 76.2 mm long and 6.35 mm thick (1 in. by 3 in. by 0.25 in.). (See Specification C 1036.)

6.2.2 Aluminum alloy 5052-H32 that is 25.4 mm wide by 76.2 mm long and 0.508 mm thick (1 in. by 3 in. by 0.020 in.). (See Specification B 209.)

6.2.3 Other substrates may be used when specified (Fig. 1).

6.3 *Template*, to provide 3.28-mm ( $\frac{1}{8}$ -in.) sealant thickness (Fig. 2).

6.4 *Hot Knife*.

6.5 *Test Oven*, capable of maintaining  $70^\circ\text{C}$  ( $158^\circ\text{F}$ ) within  $\pm 2.8^\circ\text{C}$  ( $\pm 5^\circ\text{F}$ ). This oven must contain some apparatus for suspending the specimens in shear mode during testing. Automatic timing devices and recorders may be used to record the time it takes for the test specimens to shear apart.

### 7. Sampling

7.1 Sealant shall be free of external surface contaminants such as talc, oil, dust, and moisture. Handling of the sealant surfaces in contact with the substrate shall be minimized.

7.2 A 1.0-kg (2.2-lb) representative sample shall be taken from bulk stock for testing.

### 8. Test Specimens

8.1 Prepare five test specimens from the bulk sample by using the applicator or oven method.

8.1.1 *Applicator Method*:

8.1.1.1 Clean the glass surface with an approved glass cleaner.

<sup>1</sup> 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 Sealant Standards.

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<sup>2</sup> *Annual Book of ASTM Standards*, Vol 02.02.

<sup>3</sup> *Annual Book of ASTM Standards*, Vol 04.07.

<sup>4</sup> *Annual Book of ASTM Standards*, Vol 15.02.

<sup>5</sup> The sole source of supply of the apparatus known to the committee at this time is a Hardman PSA gun, Hardman Inc., Belleville, NJ 07109. If you are aware of alternative suppliers, please provide this information to ASTM Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee,<sup>1</sup> which you may attend.