



## Designation: C1246 – 17 (Reapproved 2022)

# Standard Test Method for Effects of Heat Aging on Weight Loss, Cracking, and Chalking of Elastomeric Sealants After Cure<sup>1</sup>

This standard is issued under the fixed designation C1246; 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 effects of heat aging on weight loss, cracking and chalking of elastomeric joint sealants (single and multi-component) for use in building construction.

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

1.3 The committee having jurisdiction for this specification is not aware of any similar ISO standard.

1.4 *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.*

1.5 *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:*<sup>2</sup>

**C717** Terminology of Building Seals and Sealants

**E691** Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method

## 3. Terminology

3.1 Definitions—Definitions of the following terms are found in Terminology **C717**: *cure, elastomeric, joint, sealant, self-leveling sealant, standard conditions.*

<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 **C24.20** on General Test Methods.

Current edition approved Jan. 1, 2022. Published January 2022. Originally approved in 1993. Last previous edition approved in 2017 as C1246 – 17. DOI: 10.1520/C1246-17R22.

<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

## 4. Summary of Test Method

4.1 Sealant is spread on three aluminum panels and the net weight of sealant on each panel is determined. After the three sealant specimens are allowed to cure for 28 days at standard conditions, two specimens are then heat-aged for 21 days in a forced-draft oven maintained at  $70\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$  ( $158\text{ }^{\circ}\text{F} \pm 3.6\text{ }^{\circ}\text{F}$ ). The percentage weight lost during the heat aging period is then determined and examination is made for presence of cracks and chalking.

## 5. Significance and Use

5.1 Weight loss from a sealant after application in a building joint can be detrimental to long term sealant durability. A sealant's service life will be shortened if it contains components, critical to its durability, that are volatilized by high environmental temperatures. Also, development of cracks and chalking lessens a sealant's service life.

5.2 The test described herein measures weight loss, cracking, and chalking. The amount of weight lost during the heat aging period and any cracking or chalking helps predict premature sealant failure. However, a sealant developing no cracks or chalking, or low weight loss in this test, does not necessarily ensure good durability.

## 6. Apparatus

6.1 *Forced-Draft Oven*, controlled at  $70\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$  ( $158\text{ }^{\circ}\text{F} \pm 3.6\text{ }^{\circ}\text{F}$ ).

6.2 *Balance*, sensitive to 0.01 g.

6.3 *Rectangular Brass or TFE-Fluorocarbon Frame*, with inside dimensions 130 mm by 40 mm by 3.2 mm (5 in. by 1½ in. by ⅛ in.).

6.4 *Aluminum Panels*, three, each 152 mm by 80 mm by 0.6 mm to 1.6 mm (24 to 16 gage) (6 in. by 3 in. by 0.024 in. to 0.0625 in.).

6.5 *Straight Edge*, metal or plastic, about 152 mm (6 in.) long.

6.6 *Thin Knife Blade*.

6.7 *Spatula*, steel, about 152 mm (6 in.) long.