



Designation: C681 – 14 (Reapproved 2019)

## Standard Test Method for Volatility of Oil- and Resin-Based, Knife-Grade, Channel Glazing Compounds<sup>1</sup>

This standard is issued under the fixed designation C681; 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 describes the determination of the volatility of oil- and resin-based, knife-grade, channel glazing compounds.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.3 The subcommittee with jurisdiction 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:*

**C717 Terminology of Building Seals and Sealants**

### 3. Terminology

3.1 *Definitions*—Refer to Terminology **C717** for definitions of the following terms: glazing, compound, channel, and standard conditions.

### 4. Summary of Test Method

4.1 The channel glazing compound is placed into a tared aluminum dish and weighed. The test specimen is then placed

into an oven for a period of 3 h. After cooling, the test specimen is reweighed and the percent of volatile matter calculated.

### 5. Significance and Use

5.1 This test method provides a guide as to the amount of volatile matter that will be emitted from a channel glazing compound when tested by this test method.

### 6. Apparatus

6.1 *Cabinet or Room*, capable of maintaining standard conditions of temperature and relative humidity as defined in **C717** for extended periods of time.

6.2 *Forced-Draft Oven*, capable of maintaining a temperature of  $220 \pm 5^{\circ}\text{F}$  ( $104 \pm 3^{\circ}\text{C}$ ) for extended periods of time.

6.3 *Dish*, aluminum foil, 2.5 in. (64 mm) in diameter by 0.75 in. (19 mm) deep, with a flat bottom.

6.4 *Balance*, laboratory analytical type.

6.5 *Steel Spatula or Putty Knife*, with a blade about 4 in. (102 mm) long and 0.75 in. (19 mm) wide.

6.6 *Desiccator*.

### 7. Procedure

7.1 Condition a sample of channel glazing compound in a tightly closed container 24 h at standard conditions prior to testing. Mix the channel glazing compound thoroughly with a spatula to ensure uniformity of the sample to be tested.

7.2 Weigh the aluminum foil dish to the nearest 0.01 g and record the tare weight.

7.3 Transfer approximately 3 to 5 g of the compound into the tared aluminum foil dish, using the spatula, and spread the compound uniformly over the bottom of the dish.

7.4 Weigh the dish containing the compound quickly and accurately to the nearest 0.01 g. Record the combined weight of the dish and the compound.

7.5 Place the dish containing the compound into an oven controlled at  $220 \pm 5^{\circ}\text{F}$  ( $104 \pm 3^{\circ}\text{C}$ ) for a period of 3 h, cool in desiccator at standard conditions for 1 h, weigh accurately to the nearest 0.01 g, and record the weight of the dish plus the sample after heating.

<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 Test Methods.

Current edition approved May 1, 2019. Published May 2019. Originally approved in 1971. Last previous edition approved in 2014 as C681 – 14. DOI: 10.1520/C0681-14R19.



## 8. Calculation

8.1 Calculate the percent of volatile matter,  $V$ , in the channel glazing compound as follows:

$$V = \frac{A - B}{C} \times 100 \quad (1)$$

where:

- $A$  = weight of the dish plus the sample, g,
- $B$  = weight of the dish plus the sample after heating, g, and
- $C$  = sample weight, g.

## 9. Report

9.1 Report the percent of volatile matter, calculated to the nearest 0.5 %.

## 10. Precision

10.1 The multioperator-day precision for the volatility test is  $\pm 0.5$  %.

## 11. Keywords

11.1 channel glazing compound; knife grade; volatility

*ASTM International takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this standard. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.*

*This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, at the address shown below.*

*This standard is copyrighted by ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, United States. Individual reprints (single or multiple copies) of this standard may be obtained by contacting ASTM at the above address or at 610-832-9585 (phone), 610-832-9555 (fax), or service@astm.org (e-mail); or through the ASTM website (www.astm.org). Permission rights to photocopy the standard may also be secured from the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, Tel: (978) 646-2600; <http://www.copyright.com/>*