



Designation: C 681 – 03

Standard Test Method for Volatility of Oil- and Resin-Based, Knife-Grade, Channel Glazing Compounds¹

This standard is issued under the fixed designation C 681; 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 (ϵ) 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 the standard. The values given in parentheses are for information only.

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 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

3. Terminology

3.1 *Definitions*—Refer to Terminology C 717 for definitions of the following terms: glazing, compound.

3.2 *Description of Term*—Refer to Terminology C 717 for the description of the following term: channel.

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.

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 Sealant Standards.

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

6. Apparatus

6.1 *Cabinet or Room*, capable of maintaining a temperature of $73.4 \pm 3.6^\circ\text{F}$ ($23 \pm 2^\circ\text{C}$) at $50 \pm 5\%$ relative humidity 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 $73.4 \pm 3.6^\circ\text{F}$ ($23 \pm 2^\circ\text{C}$) 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 $73.4 \pm 3.6^\circ\text{F}$ ($23 \pm 2^\circ\text{C}$) for 1 h, weigh accurately to the nearest 0.01 g, and record the weight of the dish plus the sample after heating.

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.