



Designation: C765 – 23

Standard Test Method for Low-Temperature Flexibility of Preformed Tape Sealants¹

This standard is issued under the fixed designation C765; 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 covers a laboratory procedure for testing the low-temperature flexibility of preformed tape sealants.

1.2 The values stated in SI 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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *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:*²

C717 Terminology of Building Seals and Sealants

E145 Specification for Gravity-Convection and Forced-Ventilation Ovens

3. Terminology

3.1 **Definitions**—The definitions of the following terms used in this test method are found in Terminology **C717**: preformed tape sealant, sealant.

4. Summary of Test Method

4.1 The preformed tape sealant to be tested is applied to an aluminum panel. The assembly is heat aged, then placed in the

freezer where the panel is quickly bent over a mandrel. The specimen is examined for cracking and loss of adhesion.

5. Significance and Use

5.1 Preformed tape sealants are tacky, deformable solids that are used under compression between two substrates in a variety of sealing applications. This procedure is not intended to simulate an actual use condition, but it will give some indication of the flexibility and adhesion of a tape at low temperature. It can serve to differentiate between flexible tapes that can take some movement and those that tend to harden or embrittle on aging and crack or lose adhesion when flexed at low temperature. It will also aid in identifying sealants that have poor flexibility because they are overextended and contain a low level of binder as well as those sealants having binders that will embrittle at low temperature.

6. Apparatus

6.1 **Freezer Unit**, capable of maintaining a temperature of $-23^{\circ}\text{C} \pm 2^{\circ}\text{C}$ ($-10^{\circ}\text{F} \pm 3.6^{\circ}\text{F}$).

6.2 **Aluminum Panel** (mill finish), approximately 0.635 mm (0.025 in.) thick, 76 mm (3 in.) wide, and 152 mm (6 in.) long.

6.3 **Steel Mandrel**, 25.4 mm (1 in.) in diameter, with supporting holder or rack.

6.4 **Vented Air Circulating Oven**, that complies with Specification **E145** and is capable of maintaining a temperature of $70^{\circ}\text{C} \pm 2^{\circ}\text{C}$ ($158^{\circ}\text{F} \pm 3.6^{\circ}\text{F}$).

7. Sampling

7.1 Samples to be tested shall be taken from a fresh roll of tape sealant after first removing and discarding approximately the first 0.61 m (2 ft) of the roll.

8. Test Specimen

8.1 Prepare the test specimen as follows:

8.1.1 Clean the 76 mm by 152 mm (3 in. by 6 in.) aluminum panel with methyl ethyl ketone or similar solvent.

8.1.2 Place a 102 mm (4 in.) length of tape in the center of the panel with its length paralleling that of the panel, leaving the release paper in place on the preformed tape sealant.

8.1.3 Use a hand roller to apply pressure along the length of the tape sealant to ensure adhesion of the preformed tape sealant to the panel.

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 Test Methods.

Current edition approved May 1, 2023. Published June 2023. Originally approved in 1973. Last previous edition approved in 2015 as C765 – 97 (2015). DOI: 10.1520/C0765-23.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.