



Standard Test Method for Determining the Outgassing Potential of Sealant Backing¹

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1. Scope

1.1 This test method provides a procedure for determining the outgassing potential of a sealant backing when it is punctured during or after installation, with the puncture occurring before the sealant cures.

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 *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:*²

C717 Terminology of Building Seals and Sealants

C1193 Guide for Use of Joint Sealants

3. Terminology

3.1 *Definitions*—Refer to Terminology **C717** for the following terms used in this test method: sealant, cure, sealant backing, joint, substrate, non-sag sealant, tooling, and outgassing.

4. Summary of Test Method

4.1 A sample of sealant backing material is placed between nonporous substrates in a compressed condition, simulating the placing of sealant backing on a job site. The sealant backing is then punctured at intervals along its exposed face. A sealant is applied immediately after puncture, and it is tooled to make a typical butt joint as described in Guide **C1193**. After tooling, the specimen is placed in an air circulating oven at elevated

temperature for 1 h and then removed. The specimen is compressed 12½ % of its diameter and in the compressed state returned to the oven. The specimen is removed after another hour in the oven and compressed another 12½ % and returned to the oven, where it remains for another 2 h. The specimen is removed from the oven, and the sealant is allowed to finish curing at room temperature, while in the compressed condition. The sealant is then removed from the specimen, and the back face (the face against the sealant backing) is examined. The sealant is slit in half along its length and the size of any voids estimated.

5. Significance and Use

5.1 This test method is an indicator of a potential sealing problem that could occur if a sealant backing is flawed in manufacture or transportation to the job site, or abused during the installation. If flawed, some sealant backing materials, in combination with certain environmental conditions, can outgas, generating voids in the applied sealant before the sealant cures, thereby potentially compromising the cured sealant's intended performance.

5.2 Voids are also known to be caused by other means and under certain conditions such as air entrapment during sealant application, trapped air in the substrate releasing into the uncured sealant, incompatibility of the sealant with the sealant backing or substrate, or inhospitable installation conditions in the field. This test method is limited to identifying the outgassing potential of a punctured sealant backing by formation of a void in the soft uncured sealant under conditions of heat and compression.

6. Apparatus

6.1 *Air Circulating Oven*, capable of maintaining a temperature of 122°F (50°C).

6.2 *Test Frame and Stylus*, as described in **Annex A1**.

7. Test Specimens

7.1 Sealant backing should be 307.8-mm (12-in.) long and of a width appropriate for use in 12.7-mm (½-in.) wide joints. The proper width will be as specified by the sealant backing manufacturer.

NOTE 1—The test method is specifically for 12.7-mm (½-in.) wide joints and sealant backings used in such joints. The procedure is adapted

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.

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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.