



Standard Test Method for Accelerated Weathering of Solvent-Release-Type Sealants¹

This standard is issued under the fixed designation C1257; 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 includes two laboratory accelerated exposure procedures for predicting the effects of ultraviolet or ultraviolet/visible radiation, heat, and moisture on color, chalking, cracking, and adhesion of solvent-release sealants.

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.*

1.4 The committee with jurisdiction over this standard is not aware of any comparable standards published by other organizations.

2. Referenced Documents

2.1 *ASTM Standards:*²

C717 Terminology of Building Seals and Sealants

C1442 Practice for Conducting Tests on Sealants Using Artificial Weathering Apparatus

G113 Terminology Relating to Natural and Artificial Weathering Tests of Nonmetallic Materials

G151 Practice for Exposing Nonmetallic Materials in Accelerated Test Devices that Use Laboratory Light Sources

G154 Practice for Operating Fluorescent Ultraviolet (UV) Lamp Apparatus for Exposure of Nonmetallic Materials

G155 Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials

3. Terminology

3.1 *Definitions:*

¹ This test method is under the jurisdiction of ASTM Committee C24 on Building Seals and Sealants and is the direct responsibility of Subcommittee C24.40 on Weathering.

Current edition approved March 15, 2015. Published April 2015. Originally approved in 1994. Last previous edition approved in 2012 as C1257-06a(2012). DOI: 10.1520/C1257-15.

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.

3.1.1 Refer to Terminology **C717** and **G113** for definitions of terms used in this test method: standard conditions.

4. Summary of Test Method

4.1 Four test specimens are prepared in U-shaped aluminum channels. After curing, three of the specimens are exposed in the laboratory accelerated weathering device and the fourth specimen is stored under standard conditions as an unexposed file specimen. At the end of the exposure period, the specimens are examined for chalking, color change, center cracking, edge cracking, and loss of adhesion versus the unexposed file specimen.

5. Significance and Use

5.1 It is difficult to establish a precise correlation between laboratory accelerated and natural weathering because of (1) geographical climatic variations, local weather variation from normal, and local pollutants and (2) the fact that the acceleration factor is material dependent, varying with the type of material as well as its formulation. This test method is used to determine the resistance of a sealant to laboratory accelerated weathering and, if a control material with known outdoor weathering performance is used, the relative weathering performance of the sealant against that of the control material.

5.2 This test method is conducted using aluminum channels. Other substrate materials may show different results.

6. Apparatus

6.1 *Exposure Apparatus:*

6.1.1 *Fluorescent UV/Condensation Apparatus*, that conforms to the requirements in Practices **G151** and **G154** with UVA-340 type lamps.

6.1.2 *Xenon-Arc Apparatus*, that conforms to the requirements in Practices **G151** and **G155** with daylight type filters.

6.2 *Four-Mill Finish Aluminum U-Channels*, 76 mm long by 19 mm wide by 9.5 mm deep (3 by ¾ by ⅜ in.) inside dimensions. Additional substrate materials may be specified.

6.3 *Steel Spatula.*

7. Procedure

7.1 Condition sufficient compound in an original closed container for at least 24 h at standard conditions.