



Standard Practice for Evaluating Durability of Building Construction Sealants by Laboratory Accelerated Weathering Procedures¹

This standard is issued under the fixed designation C 1519; 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 practice covers the method for the determination of the durability of a sealant based on its ability to function in cyclic movement maintaining adhesion and cohesion after repeated exposure to laboratory accelerated weathering procedures.

1.2 This practice describes two laboratory accelerated weathering procedures for evaluating the durability of a sealant.

1.3 The RILEM TC139–DBS Durability Test Method is related to this practice.

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

C 719 Test Method for Adhesion and Cohesion of Elastomeric Joint Sealants Under Cyclic Movement (Hockman Cycle)²

E 691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method³

G 113 Terminology Relating to Natural and Artificial Weathering Tests of Nonmetallic Materials⁴

G 141 Guide for Addressing Variability in Exposure Testing on Nonmetallic Materials⁴

G 151 Practice for Exposing Nonmetallic Materials in Accelerated Test Devices That Use Laboratory Light Sources⁴

G 154 Practice for Operating Fluorescent Light Apparatus For UV Exposure to Nonmetallic Materials⁴

G 155 Practice for Operating Xenon Arc Light Apparatus

for Exposure of Nonmetallic Materials⁴

2.2 RILEM Standard

RILEM TC139–DBS Durability Test Method Determination of changes in adhesion, cohesion, and appearance of elastic weatherproofing sealants for high movement facade joints after exposure to artificial weathering⁵

3. Terminology

3.1 The definitions given in Terminology C 717 on terms relating to building seals and sealants and in Terminology G 113 on terms relating to natural and artificial weathering tests are applicable to this practice.

4. Significance and Use

4.1 This practice describes the procedure to evaluate and/or compare the durability of sealants when subjected to accelerated weathering and cyclic movement in a joint.

4.2 Sealant installation procedures, design considerations and movement during cure affect the aging processes and are fundamental to the success of any sealant. These factors are not addressed with this test procedure.

4.3 The amount, type and frequency of movement a sealant experiences during its lifetime strongly depends on the materials used in construction and on the orientation of the joint toward sunlight and many other factors that are not uniform or consistent.

4.4 Climatic exposures will differ with the orientation of the building and shading as well as with local and regional climatic conditions. Climates in a given location can vary from year to year because of differences in solar radiation, temperature, rainfall, and atmospheric conditions. Further, the quality and intensity of solar radiation on the earth's surface varies with geographic location, season, time of day, and cloud cover.

4.5 Variations in results may be expected when operating conditions are varied within the accepted limits of this practice. Therefore, all test results using this practice must be accompanied by a report of the specific operating conditions as required in Section 11. Refer to Practice G 151 for detailed information on the caveats applicable to use of results obtained according to this practice.

¹ This practice 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 May 10, 2002. Published June 2002. Originally published as C 1519 – 02. Last previous edition C 1519 – 02.

² Annual Book of ASTM Standards, Vol 04.07.

³ Annual Book of ASTM Standards, Vol 04.06.

⁴ Annual Book of ASTM Standards, Vol 14.04.

⁵ Published in *Materials and Structures* (2001), pp. 34, 579–588.