



Designation: D4799/D4799M – 17 (Reapproved 2023)

Standard Practice for Accelerated Weathering Test Conditions and Procedures for Bituminous Materials (Fluorescent UV, Water Spray, and Condensation Method)¹

This standard is issued under the fixed designation D4799/D4799M; 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 describes test conditions and procedures for fluorescent UV and condensation exposures conducted according to Practices [G151](#) and [G154](#) for bituminous roofing and waterproofing materials. (See Terminology [G113](#).)

1.2 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

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

[D36/D36M Test Method for Softening Point of Bitumen \(Ring-and-Ball Apparatus\)](#)

[D1669/D1669M Practice for Preparation of Test Panels for Accelerated and Outdoor Weathering of Bituminous Coatings](#)

[D1670/D1670M Test Method for Failure End Point in Accelerated and Outdoor Weathering of Bituminous Materials](#)

[G113 Terminology Relating to Natural and Artificial Weathering Tests of Nonmetallic Materials](#)

[G141 Guide for Addressing Variability in Exposure Testing of Nonmetallic Materials](#)

[G147 Practice for Conditioning and Handling of Nonmetallic Materials for Natural and Artificial Weathering Tests](#)

[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 Materials](#)

3. Summary of Test Method

3.1 Thin films of bitumen are uniformly applied to aluminum panels. Shingles and similar materials are cut to size and exposed to specified cycles of temperature, light, and water. A choice of six test cycles is given along with options for determining the period of exposure and evaluating results.

4. Significance and Use

4.1 This weathering apparatus is used for comparing the weathering characteristics of bituminous materials against a control material for which the outdoor weathering characteristics are known. It is not possible to establish a precise correlation between accelerated and natural weathering because (1) there are geographical climatic variations, local weather variations, and variations in local pollutants, and (2) the relation between accelerated and natural weathering is material dependent. Acceleration factors differ between materials as well as between formulations of the same material. Guide [G141](#) provides guidance regarding this issue.

NOTE 1—This practice can be used for other than bituminous materials, but the significance and use have not been evaluated.

5. Apparatus

5.1 The fluorescent UV and condensation apparatus used shall conform to the requirements defined in Practices [G151](#) and [G154](#).

¹ This practice is under the jurisdiction of ASTM Committee [D08](#) on Roofing and Waterproofing and is the direct responsibility of Subcommittee [D08.02](#) on Steep Roofing Products and Assemblies.

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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.