



Standard Practice for Xenon-Arc Exposure of Plastics Intended for Outdoor Applications¹

This standard is issued under the fixed designation D2565; 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.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope*

1.1 This practice covers specific procedures and test conditions that are applicable for xenon-arc exposure of plastics conducted in accordance with Practices [G151](#) and [G155](#). This practice also covers the preparation of test specimens, the test conditions best suited for plastics, and the evaluation of test results.

1.2 The values stated in SI units are to be regarded as standard. The values given in parentheses are mathematical conversions to inch-pound units that are provided for information only and are not considered 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 and health practices and determine the applicability of regulatory limitations prior to use.*

NOTE 1—This practice and ISO 4892-2 address the same subject matter, but differ in technical content.

2. Referenced Documents

2.1 ASTM Standards:²

[D3980](#) Practice for Interlaboratory Testing of Paint and Related Materials (Withdrawn 1998)³

[D5870](#) Practice for Calculating Property Retention Index of Plastics

[E691](#) Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method

[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

[G155](#) Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials

[G169](#) Guide for Application of Basic Statistical Methods to Weathering Tests

2.2 ISO Standard:⁴

[ISO 4892-2](#) Plastics—Methods of Exposure to Laboratory Light Sources—Part 2, Xenon Arc Lamp

2.3 Society of Automotive Engineers' Standards:⁵

[SAE J2412](#) Accelerated Exposure of Automotive Interior Trim Components Using a Controlled Irradiance Xenon-Arc Apparatus

[SAE J2527](#) Accelerated Exposure of Automotive Exterior Materials Using a Controlled Irradiance Xenon-Arc Apparatus

3. Terminology

3.1 The definitions in Terminology [G113](#) are applicable to this practice.

4. Significance and Use

4.1 The ability of a plastic material to resist deterioration of its electrical, mechanical, and optical properties caused by exposure to light, heat, and water can be very significant for many applications. This practice is intended to induce property changes associated with end-use conditions, including the effects of daylight, moisture, and heat. The exposure used in this practice is not intended to simulate the deterioration caused by localized weather phenomena, such as, atmospheric pollution, biological attack, and saltwater exposure.

¹ This practice is under the jurisdiction of ASTM Committee [D20](#) on Plastics and is the direct responsibility of Subcommittee [D20.50](#) on Durability of Plastics.

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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.

³ The last approved version of this historical standard is referenced on www.astm.org.

⁴ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

⁵ Available from SAE International (SAE), 400 Commonwealth Dr., Warrendale, PA 15096, <http://www.sae.org>.

*A Summary of Changes section appears at the end of this standard