



Standard Practice for Conducting Exposures in Outdoor Glass-Covered Exposure Apparatus with Air Circulation¹

This standard is issued under the fixed designation G201; 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 basic principles and operating procedures for using outdoor glass-covered exposure apparatus with air circulation. This practice is limited to the procedures for obtaining, measuring and controlling conditions of exposure. A number of exposure procedures are listed in [Appendix X1](#); however, this practice does not specify the exposure conditions best suited for the material to be tested.

1.2 For direct weathering exposures, refer to Practice [G7](#). For exposures behind glass without air circulation, refer to Practice [G24](#).

1.3 Test specimens are exposed to solar radiation filtered through glass under partially controlled environmental test conditions. Different glass types and operating parameters are described.

1.4 Specimen preparation and evaluation of the results are covered in ASTM methods or specifications for specific materials. More specific information for determining the change in properties after exposure and reporting these results is described in Practices [D5870](#), [D2244](#) and Test Method [D523](#).

1.5 The values stated in SI units are to be regarded as standard.

1.6 *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

[D523](#) Test Method for Specular Gloss

¹ This practice is under the jurisdiction of ASTM Committee [G03](#) on Weathering and Durability and is the direct responsibility of Subcommittee [G03.02](#) on Natural and Environmental Exposure Tests.

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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.

[D2244](#) Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates

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

[E903](#) Test Method for Solar Absorptance, Reflectance, and Transmittance of Materials Using Integrating Spheres

[E1084](#) Test Method for Solar Transmittance (Terrestrial) of Sheet Materials Using Sunlight

[G7](#) Practice for Atmospheric Environmental Exposure Testing of Nonmetallic Materials

[G24](#) Practice for Conducting Exposures to Daylight Filtered Through Glass

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

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

[G173](#) Tables for Reference Solar Spectral Irradiances: Direct Normal and Hemispherical on 37° Tilted Surface

[G177](#) Tables for Reference Solar Ultraviolet Spectral Distributions: Hemispherical on 37° Tilted Surface

[G179](#) Specification for Metal Black Panel and White Panel Temperature Devices for Natural Weathering Tests

[G183](#) Practice for Field Use of Pyranometers, Pyrheliometers and UV Radiometers

2.2 Other Document:³

WMO No. 8 Guide to Meteorological Instruments and Methods of Observation, Fifth Edition

GM 9538P Weathering Exposure Tests for Interior Trims

2.3 ISO Standard:⁴

ISO 9060 Solar energy — Specification and classification of instruments for measuring hemispherical solar and direct solar radiation

3. Terminology

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

³ Available from World Meteorological Organization (WMO), 7bis, avenue de la Paix, Case postale 2300, CH-1211 Geneva 2, Switzerland, <http://www.wmo.int>.

⁴ Available from International Organization for Standardization (ISO), 1, ch. de la Voie-Creuse, Case postale 56, CH-1211, Geneva 20, Switzerland, <http://www.iso.ch>.