



Standard Practice for Conducting Exposures to Daylight Filtered Through Glass¹

This standard is issued under the fixed designation G24; 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 reappraisal. A superscript epsilon (ε) indicates an editorial change since the last revision or reappraisal.

1. Scope*

1.1 This practice evaluates the resistance of nonmetallic materials to solar radiation filtered through glass in passively ventilated and non-vented enclosures. For exposures in under glass enclosures with forced air circulation, refer to Practice [G201](#).

1.2 For direct exposures, refer to Practice [G7](#).

1.3 This practice is limited to the method of conducting the exposures. The preparation of test specimens and evaluation of results are covered in various standards for the specific materials.

1.4 Exposure conducted according to this practice can use two types of exposure cabinets.

1.4.1 *Type A*—A cabinet that allows passive ventilation of specimens being exposed behind glass.

1.4.2 *Type B*—Enclosed cabinet with exterior painted black that does not provide for ventilation of specimens exposed behind glass. Exposures conducted using a Type B cabinet are typically referred to as “black box under glass exposures.”

1.5 Type A exposures of this practice are technically similar to Method B of ISO 877-2.

1.6 The values stated in SI units are to be regarded as the standard. The inch-pound units given in parentheses are for information only.

1.7 *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

[C1036](#) Specification for Flat Glass

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.

[D3424](#) Practice for Evaluating the Relative Lightfastness and Weatherability of Printed Matter

[D4303](#) Test Methods for Lightfastness of Colorants Used in Artists' Materials

[D6901](#) Specification for Artists' Colored Pencils

[E824](#) Test Method for Transfer of Calibration From Reference to Field Radiometers

[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

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

[G201](#) Practice for Conducting Exposures in Outdoor Glass-Covered Exposure Apparatus with Air Circulation

2.2 Other Documents:

WMO Guide to Meteorological Instruments and Methods of Observation WMO No. 8, Seventh Edition.³

ISO 105 B01 Textiles—Tests for Colour Fastness, International Standards Organization, Geneva, Switzerland.⁴

ISO 877-1 Plastics – Methods of Exposure to Solar Radiation – Part 1: General Guidance⁴

ISO 877-2 Plastics – Methods of Exposure to Solar Radiation – Part 2: Direct Weathering and Exposure Behind Window Glas

AATCC TM 16, Option 6 Colorfastness to Light, Daylight⁵

AATCC Test Method 16.1-2012 Colorfastness to Light: Outdoor

3. Terminology

3.1 Definitions:

³ Available from World Meteorological Organization (WMO), 7bis, avenue de la Paix, Case Postale No. 2300, CH-1211 Geneva 2, Switzerland, <http://www.wmo.int>.

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 American Association of Textile Chemists and Colorists (AATCC), P.O. Box 12215, Research Triangle Park, NC 27709, <http://www.aatcc.org>.

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