



Standard Practice for Conducting Tests on Paint and Related Coatings and Materials Using a Fluorescent UV-Condensation Light- and Water-Exposure Apparatus¹

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1. Scope

1.1 This practice covers the selection of test conditions from Practice G 53 to be employed for exposure testing of paint and related coatings and materials.

1.2 *This standard does not purport to address all of the safety problems 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:

- D 358 Specification for Wood to Be Used As Panels in Weathering Tests of Coatings²
- D 523 Test Method for Specular Gloss³
- D 609 Practice for Preparation of Cold-Rolled Steel Panels for Testing Paint, Varnish, Conversion Coatings, and Related Coating Products³
- D 610 Test Method for Evaluating Degree of Rusting on Painted Steel Surfaces²
- D 659 Method of Evaluating Degree of Chalking of Exterior Paints³
- D 660 Test Method for Evaluating Degree of Checking of Exterior Paints³
- D 661 Test Method for Evaluating Degree of Cracking of Exterior Paints³
- D 662 Test Method for Evaluating Degree of Erosion of Exterior Paints³
- D 714 Test Method for Evaluating Degree of Blistering of Paints³
- D 772 Test Method for Evaluating Degree of Flaking (Scaling) of Exterior Paints³
- D 823 Test Methods for Producing Films of Uniform Thickness of Paint, Varnish, and Related Products on Test Panels³
- D 1005 Test Methods for Measurement of Dry Film Thick-

ness of Organic Coatings Using Micrometers³

- D 1186 Test Methods for Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to a Ferrous Base³
- D 1400 Test Method for Nondestructive Measurement of Dry Film Thickness of Nonconductive Coatings Applied to a Nonferrous Metal Base³
- D 1654 Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments³
- D 1729 Practice for Visual Evaluation of Color Differences of Opaque Materials³
- D 1730 Practices for Preparation of Aluminum and Aluminum-Alloy Surfaces for Painting⁴
- D 1731 Practices for Preparation of Hot-Dip Aluminum Surfaces for Painting⁴
- D 1732 Practices for Preparation of Magnesium Alloy Surfaces for Painting⁴
- D 2092 Practice for Preparation of Zinc-Coated (Galvanized) Steel Surfaces for Painting²
- D 2244 Test Method for Calculation of Color Differences from Instrumentally Measured Color Coordinates³
- D 2616 Test Method for Evaluation of Visual Color Difference With a Gray Scale
- D 4214 Test Methods for Evaluating Degree of Chalking of Exterior Paint Films³
- E 97 Test Method for Directional Reflectance Factor, 45-deg 0-deg, of Opaque Specimens by Broad-Band Filter Reflectometry⁵
- G 53 Practice for Operating Light- and Water-Exposure Apparatus (Fluorescent UV-Condensation Type) for Exposure of Nonmetallic Materials⁶

3. Significance and Use

3.1 Organic coatings on exterior exposure are subjected to attack by degrading elements of the weather, particularly ultraviolet light, oxygen, and water. This practice may be used for evaluating the behavior of films exposed in apparatus that produces ultraviolet radiation, high temperatures, and water condensation on the films. This apparatus is used to make an

¹ This practice is under the jurisdiction of ASTM Committee D-1 on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee D01.27 on Accelerated Testing.

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² *Annual Book of ASTM Standards*, Vol 06.02.

³ *Annual Book of ASTM Standards*, Vol 06.01.

⁴ *Annual Book of ASTM Standards*, Vol 02.05.

⁵ Discontinued; see 1992 *Annual Book of ASTM Standards*, Vol 14.02.

⁶ *Annual Book of ASTM Standards*, Vol 14.02.