



Standard Guide for Environmental and Performance Verification of Factory- Applied Liquid Coatings¹

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1. Scope

1.1 This guide provides a generic testing procedure to verify the air pollution-prevention characteristics and basic properties of liquid coatings applied to metal, plastic, wood, or composite substrates in a factory/manufacturing environment. Thus it may be used to evaluate these liquid coatings to verify their volatile organic compound (VOC) and organic hazardous air pollutant (HAP) content as well as basic performance properties.

1.2 This guide is adapted from a procedure used by the US Environmental Protection Agency (EPA) to establish third party verification of the physical properties and performance of coatings that have potential to reduce air emissions. The data from the verification testing is available on the internet at the EPA's Environmental Technology Verification (ETV) Program website (<http://www.epa.gov/etv/centers/center6.html>) under the "P2 Innovative Coatings and Coating Equipment Pilot."

1.3 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.4 *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 to determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*²

B117 Practice for Operating Salt Spray (Fog) Apparatus

B499 Test Method for Measurement of Coating Thicknesses

by the Magnetic Method: Nonmagnetic Coatings on Magnetic Basis Metals

D522 Test Methods for Mandrel Bend Test of Attached Organic Coatings

D523 Test Method for Specular Gloss

D1729 Practice for Visual Appraisal of Colors and Color Differences of Diffusely-Illuminated Opaque Materials

D1735 Practice for Testing Water Resistance of Coatings Using Water Fog Apparatus

D2244 Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates

D2369 Test Method for Volatile Content of Coatings

D2794 Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)

D3359 Test Methods for Measuring Adhesion by Tape Test

D3363 Test Method for Film Hardness by Pencil Test

D3792 Test Method for Water Content of Coatings by Direct Injection Into a Gas Chromatograph

D3960 Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings

D4017 Test Method for Water in Paints and Paint Materials by Karl Fischer Method

D4060 Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser

D4457 Test Method for Determination of Dichloromethane and 1,1,1-Trichloroethane in Paints and Coatings by Direct Injection into a Gas Chromatograph

D5402 Practice for Assessing the Solvent Resistance of Organic Coatings Using Solvent Rubs

D5767 Test Methods for Instrumental Measurement of Distinctness-of-Image Gloss of Coating Surfaces

D6133 Test Method for Acetone, *p*-Chlorobenzotrifluoride, Methyl Acetate or *t*-Butyl Acetate Content of Solvent-borne and Waterborne Paints, Coatings, Resins, and Raw Materials by Direct Injection Into a Gas Chromatograph

D6438 Test Method for Acetone, Methyl Acetate, and Parachlorobenzotrifluoride Content of Paints, and Coatings by Solid Phase Microextraction-Gas Chromatography

¹ This guide is under the jurisdiction of ASTM Committee D01 on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee D01.55 on Factory Applied Coatings on Preformed Products.

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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.