Designation: D16 – 24

Standard Terminology for Paint, Related Coatings, Materials, and Applications[1]

This standard is issued under the fixed designation D16; 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 standard consists of technical terms used in standards under the jurisdiction of ASTM Committee D01 (on Paint and Related Coatings, Materials, and Applications), and of definitions suitable for use in these standards.

NOTE 1—When any definition in this standards is quoted or published out of the context of this standard, editorially insert the following delimiting statement "for paints and related coatings, materials, and applications" after the dash following the term (in the absence of an existing delimiting statement). This will limit the filed of application of the term and definition to that approved by this committee.

1.2 In this terminology standard, definitions used in other ASTM standards are indicated by following the definition with the designation of that standard. In some cases, a relevant D01 subcommittee is also listed. Definitions influenced by those used by other organizations are indicated by the acronym of the organization. Primary terms are given in bold, while narrower and unapproved terms are given in italics.

1.3 There are several specialized terminology standards under the jurisdiction of Committee D01, as follows: D804, D1695, D6440, D6488, and D7188. Few definitions from those standards are included in Terminology D16. Therefore, in searches for definitions of paints and coatings terms, these standards should be included where appropriate.

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D804 Terminology Relating to Pine Chemicals, Including Tall Oil and Related Products
D968 Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive
D1475 Test Method for Density of Liquid Coatings, Inks, and Related Products
D1653 Test Methods for Water Vapor Transmission of Organic Coating Films
D1695 Terminology of Cellulose and Cellulose Derivatives
D1729 Practice for Visual Appraisal of Colors and Color Differences of Diffusely-Illuminated Opaque Materials
D1736 Test Method for Efflorescence of Interior Wall Paints (Withdrawn 1997)[3]
D1848 Classification for Reporting Paint Film Failures Characteristic of Exterior Latex Paints (Withdrawn 2003)[3]
D2794 Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)
D3363 Test Method for Film Hardness by Pencil Test
D3450 Test Method for Washability Properties of Interior Architectural Coatings
D4062 Test Method for Leveling of Paints by Draw-Down Method
D4209 Practice for Determining Volatile and Nonvolatile Content of Cellulosics, Emulsions, Resin Solutions, Shellac, and Varnishes
D4366 Test Methods for Hardness of Organic Coatings by Pendulum Damping Tests
D4958 Test Method for Comparison of the Brush Drag of Latex Paints
D5146 Guide to Testing Solvent-Borne Architectural Coatings
D5178 Test Method for Mar Resistance of Organic Coatings
D6440 Terminology Relating to Hydrocarbon Resins
D6488 Terminology Relating to Print Problems
D7188 Terminology for Printing Inks, Materials, and Processes
E284 Terminology of Appearance

[1] This terminology is under the jurisdiction of ASTM Committee D01 on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee D01.16 on Terminology.

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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.

2.2 *EPA Documents:*[4]

450/3-83-013R Glossary for Air Pollution Control of Industrial Coating Operations

Method 24, 40 CFR Part 60, Appendix A Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings

3. Terminology

3.1 For definitions of terms having to do with appearance, see Terminology E284.

3.2 *Definitions:*

abrasion resistance, *n*—*(for coatings)* the ability of a coating to resist being worn away and to maintain its original appearance and structure when subjected to rubbing, scraping, or wear. **D968, D01.23**

acid number, *n*—*(for coatings)* the number of milligrams of potassium hydroxide (KOH) required to neutralize the free acids in 1 g of an oil, resin, varnish, or other substance; generally reported on the nonvolatile content.

acid value—see **acid number**.

acrylic resin—under **resin, synthetic**, see *acrylic resin*.

additive, *n*—a substance added in small quantities to another substance, usually to improve specific properties (for example, a drier, mildewcide, etc.).

adhesion promoter, *n*—a material built into a binder or added to a paint to increase the number and/or strength of interactions to the substrate or the previously applied coating, with the specific aim of improving adhesion. **D01.23**

alkyd resin—under **resin, synthetic**, see *alkyd resin*.

architectural coating, *n*—organic coating intended for on-site application to interior or exterior surfaces of residential, commercial, institutional, or industrial buildings, in contrast to industrial coatings. **D5146, D01.42**

DISCUSSION—They are protective and decorative finishes applied at ambient temperatures. Often called Trade Sales Coatings.

associative thickener, *n*—water-soluble polymers containing hydrophobic groups that are capable of nonspecific hydrophobic association similar to surfactants that elevate viscosity presumably by association between thickener particles or thickener and dispersed particles that may be present in the aqueous system such as latex particles rather than through high molecular weight or chain stiffness of the thickener molecules themselves.

autodeposition, *n*—a single-step immersion metal finishing process in which an organic coating is applied by means of unique surface chemical reactions carried out in an aqueous latex dispersion, also referred to as chemiphoresis. Components within the bath give rise to chemical reactions that slightly solubilize the metallic surface and lead to destabilization, deposition, and coalescence of the dispersed latex particles at that surface.

DISCUSSION—The deposition rate of the latex is controlled by the rate of surface solubilization. The process does not require any pretreatments such as phosphating, needs no external energy input, and gives rise to deposition wherever the solution wets the substrate. Irregularly shaped parts can be uniformly coated.

baking finish, *n*—a paint or varnish that requires baking at temperatures above 150 °F (65 °C) for the development of desired properties.

baking temperature, *n*—a temperature above 150 °F (65 °C).

batch, *n*—the total quantity of a material produced in a single final mixing operation after all production processes are complete, or just prior to filling.

bituminous varnish—under **varnish**, see *bituminous varnish*.

bleeding, *n*—the diffusion of coloring matter through a coating from the substrate; also, the discoloration arising from such diffusion. In the case of printing ink, the spreading or running of a pigment color by the action of a solvent such as water or alcohol.

blister, *n*—a dome-shaped defect caused by the formation of a gas or liquid under a coating film which results in a localized loss of adhesion and lifting of the coating, that is, film, from the substrate.

blistering, *v*—the process of forming a blister.

blistering resistance, *n*—the ability of a coating to resist blistering.

blocking, *n—for coatings other than powder coatings,* the sticking of a coated surface to an adjacent surface when the two surfaces have been in contact for an extended period of time. **D01.42**

brush-drag, *n*—resistance encountered when applying a coating by brush, directly related to the high-shear viscosity of the coating. **D4958, D01.42**

bulking value, *n*—solid volume of a unit weight of material, usually expressed as gallons per pound. For practical purposes this is 0.120 divided by the specific gravity.

caulking compound, *n*—a soft, plastic material, consisting of pigment and vehicle, used for sealing joints in buildings and other structures where normal structural movement may occur.

DISCUSSION—Caulking compound retains its plasticity for an extended period after application. It is available in forms suitable for application by gun and knife and in extruded preformed shapes.

cellulose lacquer—see **lacquer**.

chalking resistance, *n*—the ability of a pigmented coating to resist the formation of a friable powder on its surface caused by the disintegration of the binding medium by degradative weather factors.

checking resistance, *n*—the ability of a coating to resist slight breaks in the film that do not penetrate to the previously applied coating or to the substrate. The breaks should be called cracks if penetration extends to the previously applied coating or to the substrate. See **cracking resistance**.

[4] Available from United States Environmental Protection Agency (EPA), William Jefferson Clinton Bldg., 1200 Pennsylvania Ave., NW, Washington, DC 20460, http://www.epa.gov.