



Designation: ~~D6577–06 (Reapproved 2011)~~^{ε1} **D6577 – 15**

Standard Guide for Testing Industrial Protective Coatings¹

This standard is issued under the fixed designation D6577; 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.

~~^{ε1} NOTE—References to withdrawn standards were removed editorially in September 2011.~~

1. Scope

1.1 This guide covers the selection and use of test methods and procedures for testing industrial protective coatings. Selection of the standards to be followed must be governed by experience and the requirements in each individual case, together with agreement between the supplier and the user.

1.2 This guide covers the testing of liquid coatings as applied on substrate by brushing, rolling, spraying, or other means appropriate to the coating and circumstance.

NOTE 1—The term “industrial protective coating” as used in this guide is described in the scope of Subcommittee D01.46¹ as “paints applied to substrates on-site of structures and buildings, especially where subject to corrosive environments, as industrial, urban, and marine environments.”

NOTE 2—Guides for testing other coating types, such as Guides [D4712](#), [D5146](#), [D5324](#) or for surface preparation, coating application, such as Guide [D3276](#), are available and should be used when it is applicable.

1.3 *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

[B117 Practice for Operating Salt Spray \(Fog\) Apparatus](#)

[C868 Test Method for Chemical Resistance of Protective Linings \(Withdrawn 2015\)](#)³

[D16 Terminology for Paint, Related Coatings, Materials, and Applications](#)

[D56 Test Method for Flash Point by Tag Closed Cup Tester](#)

[D93 Test Methods for Flash Point by Pensky-Martens Closed Cup Tester](#)

[D185 Test Methods for Coarse Particles in Pigments](#)

[D344 Test Method for Relative Hiding Power of Paints by the Visual Evaluation of Brushouts](#)

[D522 Test Methods for Mandrel Bend Test of Attached Organic Coatings](#)

[D523 Test Method for Specular Gloss](#)

[D562 Test Method for Consistency of Paints Measuring Krebs Unit \(KU\) Viscosity Using a Stormer-Type Viscometer](#)

[D609 Practice for Preparation of Cold-Rolled Steel Panels for Testing Paint, Varnish, Conversion Coatings, and Related Coating Products](#)

[D610 Practice for Evaluating Degree of Rusting on Painted Steel Surfaces](#)

[D660 Test Method for Evaluating Degree of Checking of Exterior Paints](#)

[D661 Test Method for Evaluating Degree of Cracking of Exterior Paints](#)

[D662 Test Method for Evaluating Degree of Erosion of Exterior Paints](#)

[D714 Test Method for Evaluating Degree of Blistering of Paints](#)

[D772 Test Method for Evaluating Degree of Flaking \(Scaling\) of Exterior Paints](#)

[D822 Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings](#)

[D823 Practices for Producing Films of Uniform Thickness of Paint, Varnish, and Related Products on Test Panels](#)

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 D01.46 on Industrial Protective Coatings.

Current edition approved Sept. 1, 2011; Dec. 1, 2015. Published October 2011; December 2015. Originally approved in 2000. Last previous edition approved in 2006 as [D6577–06](#); [D6577–06 \(2011\)](#)^{ε1}. DOI: [10.1520/D6577-06R11E01](#); [10.1520/D6577-15](#).

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](#).

- D869 Test Method for Evaluating Degree of Settling of Paint
- D870 Practice for Testing Water Resistance of Coatings Using Water Immersion
- D968 Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive
- D1005 Test Method for Measurement of Dry-Film Thickness of Organic Coatings Using Micrometers
- D1014 Practice for Conducting Exterior Exposure Tests of Paints and Coatings on Metal Substrates
- D1200 Test Method for Viscosity by Ford Viscosity Cup
- D1210 Test Method for Fineness of Dispersion of Pigment-Vehicle Systems by Hegman-Type Gage
- D1212 Test Methods for Measurement of Wet Film Thickness of Organic Coatings
- D1296 Test Method for Odor of Volatile Solvents and Diluents
- D1308 Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes
- D1474 Test Methods for Indentation Hardness of Organic Coatings
- D1475 Test Method For Density of Liquid Coatings, Inks, and Related Products
- D1535 Practice for Specifying Color by the Munsell System
- D1640 Test Methods for Drying, Curing, or Film Formation of Organic Coatings
- D1653 Test Methods for Water Vapor Transmission of Organic Coating Films
- D1654 Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments
- D1729 Practice for Visual Appraisal of Colors and Color Differences of Diffusely-Illuminated Opaque Materials
- D1730 Practices for Preparation of Aluminum and Aluminum-Alloy Surfaces for Painting
- D1731 Practices for Preparation of Hot-Dip Aluminum Surfaces for Painting
- D1732 Practices for Preparation of Magnesium Alloy Surfaces for Painting
- D1735 Practice for Testing Water Resistance of Coatings Using Water Fog Apparatus
- D1849 Test Method for Package Stability of Paint
- D2196 Test Methods for Rheological Properties of Non-Newtonian Materials by Rotational Viscometer
- D2197 Test Method for Adhesion of Organic Coatings by Scrape Adhesion
- D2200 Practice for Use of Pictorial Surface Preparation Standards and Guides for Painting Steel Surfaces
- D2201 Practice for Preparation of Zinc-Coated and Zinc-Alloy-Coated Steel Panels for Testing Paint and Related Coating Products
- D2243 Test Method for Freeze-Thaw Resistance of Water-Borne Coatings
- D2244 Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates
- D2247 Practice for Testing Water Resistance of Coatings in 100 % Relative Humidity
- D2354 Test Method for Minimum Film Formation Temperature (MFFT) of Emulsion Vehicles
- D2369 Test Method for Volatile Content of Coatings
- D2371 Test Method for Pigment Content of Solvent-Reducible Paints
- D2574 Test Method for Resistance of Emulsion Paints in the Container to Attack by Microorganisms
- D2616 Test Method for Evaluation of Visual Color Difference With a Gray Scale
- D2621 Test Method for Infrared Identification of Vehicle Solids From Solvent-Reducible Paints
- D2697 Test Method for Volume Nonvolatile Matter in Clear or Pigmented Coatings
- D2794 Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)
- D2803 Guide for Testing Filiform Corrosion Resistance of Organic Coatings on Metal
- D2805 Test Method for Hiding Power of Paints by Reflectometry
- D2832 Guide for Determining Volatile and Nonvolatile Content of Paint and Related Coatings
- D3134 Practice for Establishing Color and Gloss Tolerances
- D3168 Practice for Qualitative Identification of Polymers in Emulsion Paints
- D3170 Test Method for Chipping Resistance of Coatings
- D3276 Guide for Painting Inspectors (Metal Substrates)
- D3278 Test Methods for Flash Point of Liquids by Small Scale Closed-Cup Apparatus
- 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
- D3793 Test Method for Low-Temperature Coalescence of Latex Paint Films by Porosity Measurement (Withdrawn 2012)³
- D3912 Test Method for Chemical Resistance of Coatings and Linings for Use in Nuclear Power Plants
- D3924 Specification for Environment for Conditioning and Testing Paint, Varnish, Lacquer, and Related Materials
- D3925 Practice for Sampling Liquid Paints and Related Pigmented Coatings
- D3928 Test Method for Evaluation of Gloss or Sheen Uniformity
- 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
- D4062 Test Method for Leveling of Paints by Draw-Down Method

- D4138 Practices for Measurement of Dry Film Thickness of Protective Coating Systems by Destructive, Cross-Sectioning Means
- D4141 Practice for Conducting Black Box and Solar Concentrating Exposures of Coatings
- D4212 Test Method for Viscosity by Dip-Type Viscosity Cups
- D4214 Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films
- D4287 Test Method for High-Shear Viscosity Using a Cone/Plate Viscometer
- D4400 Test Method for Sag Resistance of Paints Using a Multinotch Applicator
- D4457 Test Method for Determination of Dichloromethane and 1,1,1-Trichloroethane in Paints and Coatings by Direct Injection into a Gas Chromatograph
- D4541 Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers
- D4585 Practice for Testing Water Resistance of Coatings Using Controlled Condensation
- D4587 Practice for Fluorescent UV-Condensation Exposures of Paint and Related Coatings
- D4712 Guide for Testing Industrial Water-Reducible Coatings (Withdrawn 2014)³
- D4752 Practice for Measuring MEK Resistance of Ethyl Silicate (Inorganic) Zinc-Rich Primers by Solvent Rub
- D4958 Test Method for Comparison of the Brush Drag of Latex Paints
- D5009 Test Method for Evaluating and Comparing Transfer Efficiency of Spray Applied Coatings Under Laboratory Conditions
- D5031 Practice for Enclosed Carbon-Arc Exposure Tests of Paint and Related Coatings
- D5064 Practice for Conducting a Patch Test to Assess Coating Compatibility
- D5065 Guide for Assessing the Condition of Aged Coatings on Steel Surfaces
- D5146 Guide to Testing Solvent-Borne Architectural Coatings
- D5162 Practice for Discontinuity (Holiday) Testing of Nonconductive Protective Coating on Metallic Substrates
- D5178 Test Method for Mar Resistance of Organic Coatings
- D5201 Practice for Calculating Formulation Physical Constants of Paints and Coatings
- D5286 Test Methods for Determination of Transfer Efficiency Under General Production Conditions for Spray Application of Paints
- D5324 Guide for Testing Water-Borne Architectural Coatings
- D5327 Practice for Evaluating and Comparing Transfer Efficiency of Spray Applied Coatings Under General Laboratory Conditions
- D5402 Practice for Assessing the Solvent Resistance of Organic Coatings Using Solvent Rubs
- D5894 Practice for Cyclic Salt Fog/UV Exposure of Painted Metal, (Alternating Exposures in a Fog/Dry Cabinet and a UV/Condensation Cabinet)
- D5895 Test Methods for Evaluating Drying or Curing During Film Formation of Organic Coatings Using Mechanical Recorders
- D6093 Test Method for Percent Volume Nonvolatile Matter in Clear or Pigmented Coatings Using a Helium Gas Pycnometer
- D6132 Test Method for Nondestructive Measurement of Dry Film Thickness of Applied Organic Coatings Using an Ultrasonic Coating Thickness Gage
- D6578 Practice for Determination of Graffiti Resistance
- D6677 Test Method for Evaluating Adhesion by Knife
- D6695 Practice for Xenon-Arc Exposures of Paint and Related Coatings
- D6905 Test Method for Impact Flexibility of Organic Coatings
- D6943 Practice for Immersion Testing of Industrial Protective Coatings and Linings
- D6944 Practice for Determining the Resistance of Cured Coatings to Thermal Cycling
- D7055 Practice for Preparation (by Abrasive Blast Cleaning) of Hot-Rolled Carbon Steel Panels for Testing of Coatings
- D7091 Practice for Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to Ferrous Metals and Nonmagnetic, Nonconductive Coatings Applied to Non-Ferrous Metals
- D7187 Test Method for Measuring Mechanistic Aspects of Scratch/Mar Behavior of Paint Coatings by Nanoscratching
- D7868 Practice for Determining the Dry Fall (Fog) Properties of Protective Coatings
- E84 Test Method for Surface Burning Characteristics of Building Materials
- F1249 Test Method for Water Vapor Transmission Rate Through Plastic Film and Sheeting Using a Modulated Infrared Sensor
- G7 Practice for Atmospheric Environmental Exposure Testing of Nonmetallic Materials
- G8 Test Methods for Cathodic Disbonding of Pipeline Coatings
- G14 Test Method for Impact Resistance of Pipeline Coatings (Falling Weight Test)
- G20 Test Method for Chemical Resistance of Pipeline Coatings
- G42 Test Method for Cathodic Disbonding of Pipeline Coatings Subjected to Elevated Temperatures
- G50 Practice for Conducting Atmospheric Corrosion Tests on Metals
- G62 Test Methods for Holiday Detection in Pipeline Coatings
- G80 Test Method for Specific Cathodic Disbonding of Pipeline Coatings (Withdrawn 2013)³
- G85 Practice for Modified Salt Spray (Fog) Testing
- G90 Practice for Performing Accelerated Outdoor Weathering of Nonmetallic Materials Using Concentrated Natural Sunlight

- G95 Test Method for Cathodic Disbondment Test of Pipeline Coatings (Attached Cell Method)
- G106 Practice for Verification of Algorithm and Equipment for Electrochemical Impedance Measurements
- G113 Terminology Relating to Natural and Artificial Weathering Tests of Nonmetallic Materials
- G141 Guide for Addressing Variability in Exposure Testing of Nonmetallic Materials
- G147 Practice for Conditioning and Handling of Nonmetallic Materials for Natural and Artificial Weathering Tests
- G151 Practice for Exposing Nonmetallic Materials in Accelerated Test Devices that Use Laboratory Light Sources
- G152 Practice for Operating Open Flame Carbon Arc Light Apparatus for Exposure of Nonmetallic Materials
- G153 Practice for Operating Enclosed Carbon Arc Light Apparatus for Exposure of Nonmetallic Materials
- G154 Practice for Operating Fluorescent Ultraviolet (UV) Lamp Apparatus for Exposure of Nonmetallic Materials
- G155 Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials

2.2 Federal Standards:⁴

U.S. Federal Test Method Standard No. 141C:

- 1022 Sampling for Inspection and Testing
- 2112 Application by Roller
- 2131 Application of Sprayed Films
- 2141 Application of Brushed Films
- 2161 Application of Film with Film Applicator (Magnetic Chuck)
- 2162 Application of Film with Film Applicator Using Suction Panel Holder
- 3011 Condition in Container
- 4061 Drying Time
- 4321 Brushing Properties
- 4331 Spraying Properties
- 4335 Roller Coating Properties
- 4401 Odor Test

2.3 U.S. Environmental Protection Agency Standard:⁵

EPA Federal Reference Method 24 Determination of Volatile Matter Content, Density, Volume Solids, and Weight Solids of Surface Coatings

2.4 NACE Standard:⁶

TM-01-74 NACE TM0174 Laboratory Methods for the Evaluation of Protective Coatings and Lining Materials in Immersion Service

2.5 ANSI Standard:⁷

N512 Protective Coatings (Paints) for the Nuclear Industry

3. Terminology

3.1 *Definitions:* <https://standards.iteh.ai/catalog/standards/sist/6e89864b-fbbf-4ae3-add4-fde2f409c890/astm-d6577-15>

3.1.1 For definitions of terms used in this guide, refer to Terminology **D16**.

3.1.2 The definitions given in Terminology **G113** relating to natural and artificial weathering tests are applicable to this guide.

4. Significance and Use

4.1 This guide is intended to provide assistance in selecting appropriate tests for evaluating the general performance level to be expected of a coating or coating system on a given substrate exposed to a given type of environment. **Table 1** represents a listing of all the tests.

4.2 Surface preparation or cleanliness prior to application of the coating can be critical to the proper performance of the coating.

4.3 Results obtained in the tests cited in this guide may not be adequate for predicting coating service life of a specific coating system in a specific environmental exposure. A suitable control coating system of known performance in the service environment should be included in the testing for comparison.

5. Conditions Affecting Performance

5.1 Practical requirements and performance of industrial coatings may vary with the following:

5.1.1 *Substrate Type*—Ferrous, nonferrous, previously coated surfaces, masonry, and other materials.

5.1.2 *Substrate Conditions and Surface Profile*—Cleanliness, porosity, smoothness, and weathering of the substrates.

⁴ Available from Standardization Documents Order Desk, DODSSP, Bldg. 4, Section D, DLA Document Services, Building 4/D, 700 Robbins Ave., Philadelphia, PA 19111-5098, <http://dodssp.daps.dla.mil>; 19111-5094, <http://quicksearch.dla.mil>.

⁵ Available from U.S. Government Printing Office Superintendent of Documents, 732 N. Capitol St., NW, Mail Stop: SDE, Washington, DC 20401, <http://www.access.gpo.gov>.

⁶ Available from NACE International (NACE), 1440 South Creek Dr., Houston, TX 77084-4906, <http://www.nace.org>.

⁷ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

TABLE 1 List of Test Methods by Properties

Property or Related Test	Section	ASTM Standard	Federal Test Method Standard No. 141C
Scope:			
Guides	1.2	D3276, D4712, D5146, D5324	...
Terminology	3.1.1	D16	...
	3.1.2	G113	...
Sampling and Test Conditions:			
Sampling	6.2	D823, D3925	1022
Test conditions	6.3	D3924	...
Liquid Coatings Properties:			
Condition in container	7.1	...	3011
Coarse particles and foreign matter	7.2	D185	...
Density or weight per gallon	7.3	D1475	...
Fineness of dispersion	7.4	D1210	...
Settling	7.5	D869	...
Viscosity:	7.6		
Newtonian fluids	7.6.1	D1200, D2196, D4212	...
Consistency	7.6.2	D562	...
High-shear viscosity	7.6.3	D4287, D4958	...
Flash point	7.7	D56, D93, D3278	...
Freeze-thaw stability	7.8	D2243	...
Odor	7.9	D1296	4401
Microorganism resistance	7.10	D2574	...
Package stability	7.11	D1849	...
Volatile content of coatings	7.12	D2369, D2832	...
Volume solids	7.13	D2697, D5201, D6093	...
Volatile organic content	7.14	D1475, D2369, D3792, D3960 D4017, D4457	...
Chemical analysis	7.15	D2371, D2621, D3168	...
Transfer efficiency	7.16	D5009, D5286, D5327	...
Application and Film Formation:	8		
Panel preparation	8.1	D609, D1730, D1731, D2200, D7055	...
Application properties	8.2	D7868	2112, 2131, 2141, 2161, 2162, 4321, 4331, 4335
Drying properties	8.3	D1640, D5895	4061
Leveling properties	8.4	D4062	...
Wet film thickness	8.5	D1212	...
Low temperature coalescence of paints	8.6	D2354, D3793	...
Touch-up	8.7	D3359, D3928	...
Sag resistance	8.8	D4400	...
Pot life	8.9
Appearance of Dry Film:	9		
Color:	9.1		
Color difference by visual evaluation	9.1.1	D1729, D2616	...
Color difference by instrumental evaluation	9.1.2	D2244, D3134	...
Color description by visual evaluation	9.1.3	D1535	...
Color description by instrumental evaluation	9.1.4	D2244	...
Gloss	9.2	D523, D3134	...
Hiding power	9.3	D344, D2805	...
Properties of Dry Film:	10		
Abrasion resistance	10.1	D968, D4060	...
Adhesion	10.2	D2197, D3359, D4541	...
Dry film thickness	10.3	D1005, D4138, D6132, D7091	...
Elongation	10.4	D522	...
Internal stresses	10.5
Hardness	10.6	D1474, D3363, D5178, D7187	...
Discontinuity (Holiday)	10.7	D5162, G62	...
Impact resistance	10.8	D2794, D3170, D6905, G14	...
Burning characteristics	10.9	E84	...
Slip coefficient and creep resistance	10.10
Performance of Dry Film	11		
Moisture vapor transmission rate	11.1	D1653, F1249	...
Cathodic disbonding	11.2	G8, G42, G80, G85	...
Chemical resistance	11.3	C868, D1308, D3912, D4752, D5402, G20, G106	...
Moisture resistance	11.4	D870, D1735, D2247, D4585	...
Exterior exposure:	11.5		
Conducting	11.5.1	D1014, G50	...
Atmospheric exposure	11.5.2	G7	...
Accelerated outdoor weathering	11.5.3	D4141, G90	...
Patch test	11.5.4	D5064	...
Laboratory exposure:	11.6		
Accelerated weathering	11.6.1	G141, G147, G151	...
Enclosed carbon arc	11.6.1.1	D5031, G153	...
Open flame carbon arc	11.6.1.2	D822, G152	...

TABLE 1 *Continued*

Property or Related Test	Section	ASTM Standard	Federal Test Method Standard No. 141C
Xenon arc	11.6.1.3	D6695, G155	...
Fluorescent UV	11.6.1.4	D4587, G154	...
Corrosion resistance:	11.6.2	B117, D5894, G85	
Cyclic wet/dry test (Prohesion)	11.6.2.1	G85	...
Cyclic corrosion/UV	11.6.2.2	D5894	...
Salt for (spray)	11.6.2.3	B117, G85	...
Filiform corrosion	11.6.2.4	D2803	...
Report results	11.7	D610, D660, D661, D662, D714, D772, D1654, D4214, D5065	...

5.1.3 *Substrate Aspects of Structure*—Construction defects or defects due to age such that excessive moisture makes its way through a porous substrate or is trapped in components; design defects that cause galvanic corrosion; environmental exposure to deteriorating materials such as deicing salts, improperly prepared welds, or other site-specific detrimental conditions.

5.1.4 Type, quality, and suitability of the surface treatment or primer used and time of drying before coating application.

5.1.5 Application methods and techniques.

5.1.6 *Application and Cure Conditions*—Environmental conditions, such as temperature and relative humidity, during application and drying.

5.1.7 *Service Conditions*—Environmental conditions such as solar radiation, temperature, humidity, and chemical and mechanical stress.

6. Sampling and Test Conditions

6.1 Prior to sampling, the condition of the container should be checked since damage to it may cause evaporation, skinning, or other undesirable effects on the coating.

6.2 Sample in accordance with Practice D3925 or Method 1022 of Federal Test Method Standard No. 141C. Prepare coating films of uniform thickness on test panels in accordance with Practices D823.

6.3 Tests and observations shall be at standard laboratory conditions in accordance with Specification D3924 unless otherwise specified or agreed upon between the supplier and the user.

7. Liquid Coatings Properties

7.1 *Condition in Container*—Thickening, settling, and separation are undesirable and objectionable if a liquid coating cannot be reconditioned and made suitable for application with a reasonable amount of stirring. The referenced test method, Method 3011.1 covers procedures for determining changes in properties after storage. Determine the condition in the container in accordance with Method 3011.1 of U.S. Federal Test Method Standard No. 141C.

7.2 *Coarse Particles and Foreign Matter*—Liquid coatings must be free of coarse particles and foreign matter to be able to form uniform films of good appearance. A typical maximum value is 0.5 weight % of the total material. Determine the content of coarse particles and foreign matter in accordance with Test Methods D185. This referenced method uses material retained in a 325-mesh (45- μ m) screen as a measure of coarse particle and foreign matter.

7.3 *Density or Weight per Gallon*—The density as measured by weight per gallon is used to help ensure product uniformity from batch to batch. Test Method D1475 gives a procedure for measuring the density of the coating at specified temperature. A calibrated weight-per-gallon cup is used. Determine the density in accordance with Test Method D1475.

7.4 *Fineness of Dispersion*—Pigmented paints involve the dispersion of colored pigments and filler pigments into the liquid vehicle. Generally, the more finely a pigment is dispersed, the more efficiently it is being utilized. The fineness of dispersion (or fineness of “grind”) provides a means to measure and report the degree to which pigment agglomerates have been broken down in the dispersion process. The degree of dispersion can affect paint properties such as color, gloss, and pigment settling. Determine fineness of dispersion in accordance with Test Method D1210.

7.5 *Settling*—The amount and type of settling is an indication of how well the pigments remain in suspension and how easily settled pigment can be remixed. Pigments and fillers dispersed in paints are subject to settling as generally described in Stokes Law. Determine the degree of settling in accordance with Test Method D869.

7.6 *Viscosity*—Viscosity refers to the flow resistance of a fluid. Viscosity values are often related to application properties such as flow, leveling, and sag resistance and should fall within an agreed-upon range.

7.6.1 *Viscosity of Newtonian or Near Newtonian Fluids*—(constant viscosity regardless of shear rate), may be measured in accordance with Test Methods D1200 and D4212. This viscosity measurement is used to determine package viscosity and application viscosity. Viscosity of non-Newtonian materials should be measured in accordance with Test Methods D2196 since it