



Designation: D5498 – 12a (Reapproved 2018)

# Standard Guide for Developing a Training Program for Personnel Performing Coating and Lining Work Inspection for Nuclear Facilities<sup>1</sup>

This standard is issued under the fixed designation D5498; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 This guide is intended to assist those responsible for developing a program for the indoctrination and training of personnel performing coating and lining inspection work for nuclear facilities.

1.2 It is recognized that organizations and job responsibilities vary widely among utilities and also among various support and service companies. It is the responsibility of the user of this guide to identify the appropriate subject matter for its program and its specific needs.

1.3 Users of this guide must ensure that coating and lining work complies not only with this guide, but also with the licensee's plant-specific quality assurance program and licensing commitments.

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:*<sup>2</sup>

- D16 Terminology for Paint, Related Coatings, Materials, and Applications
- D610 Practice for Evaluating Degree of Rusting on Painted Steel Surfaces
- D714 Test Method for Evaluating Degree of Blistering of Paints
- D1005 Test Method for Measurement of Dry-Film Thickness of Organic Coatings Using Micrometers

- D2240 Test Method for Rubber Property—Durometer Hardness
- D2583 Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor
- D3276 Guide for Painting Inspectors (Metal Substrates)
- D3359 Test Methods for Rating Adhesion by Tape Test
- D3363 Test Method for Film Hardness by Pencil Test
- D3843 Practice for Quality Assurance for Protective Coatings Applied to Nuclear Facilities
- D3925 Practice for Sampling Liquid Paints and Related Pigmented Coatings
- D4138 Practices for Measurement of Dry Film Thickness of Protective Coating Systems by Destructive, Cross-Sectioning Means
- D4212 Test Method for Viscosity by Dip-Type Viscosity Cups
- D4214 Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films
- D4258 Practice for Surface Cleaning Concrete for Coating
- D4259 Practice for Abrading Concrete
- D4260 Practice for Liquid and Gelled Acid Etching of Concrete
- D4261 Practice for Surface Cleaning Concrete Masonry Units for Coating
- D4262 Test Method for pH of Chemically Cleaned or Etched Concrete Surfaces
- D4263 Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method
- D4285 Test Method for Indicating Oil or Water in Compressed Air
- D4414 Practice for Measurement of Wet Film Thickness by Notch Gages
- D4417 Test Methods for Field Measurement of Surface Profile of Blast Cleaned Steel
- D4537 Guide for Establishing Procedures to Qualify and Certify Personnel Performing Coating and Lining Work Inspection in Nuclear Facilities
- D4538 Terminology Relating to Protective Coating and Lining Work for Power Generation Facilities
- D4541 Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers

<sup>1</sup> This guide is under the jurisdiction of ASTM Committee D33 on Protective Coating and Lining Work for Power Generation Facilities and is the direct responsibility of Subcommittee D33.04 on Quality Systems and Inspection.

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<sup>2</sup> 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.

D4610 Guide for Determining the Presence of and Removing Microbial (Fungal or Algal) Growth on Paint and Related Coatings

D4752 Practice for Measuring MEK Resistance of Ethyl Silicate (Inorganic) Zinc-Rich Primers by Solvent Rub

D4787 Practice for Continuity Verification of Liquid or Sheet Linings Applied to Concrete Substrates

D4940 Test Method for Conductimetric Analysis of Water Soluble Ionic Contamination of Blast Cleaning Abrasives

D5144 Guide for Use of Protective Coating Standards in Nuclear Power Plants

D5162 Practice for Discontinuity (Holiday) Testing of Non-conductive Protective Coating on Metallic Substrates

D5163 Guide for Establishing a Program for Condition Assessment of Coating Service Level I Coating Systems in Nuclear Power Plants

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

D6132 Test Method for Nondestructive Measurement of Dry Film Thickness of Applied Organic Coatings Using an Ultrasonic Coating Thickness Gage

D6237 Guide for Painting Inspectors (Concrete and Masonry Substrates)

D6386 Practice for Preparation of Zinc (Hot-Dip Galvanized) Coated Iron and Steel Product and Hardware Surfaces for Painting

D6677 Test Method for Evaluating Adhesion by Knife

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

D7167 Guide for Establishing Procedures to Monitor the Performance of Safety-Related Coating Service Level III Lining Systems in an Operating Nuclear Power Plant

D7234 Test Method for Pull-Off Adhesion Strength of Coatings on Concrete Using Portable Pull-Off Adhesion Testers

D7682 Test Method for Replication and Measurement of Concrete Surface Profiles Using Replica Putty

E337 Test Method for Measuring Humidity with a Psychrometer (the Measurement of Wet- and Dry-Bulb Temperatures)

F1869 Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride

F2170 Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes

G12 Test Method for Nondestructive Measurement of Film Thickness of Pipeline Coatings on Steel (Withdrawn 2013)<sup>3</sup>

G62 Test Methods for Holiday Detection in Pipeline Coatings

2.2 *ASME Codes and Standards*:<sup>4</sup>

ASME Boiler and Pressure Vessel Code, Section XI Rules for Inservice Inspection of Nuclear Power Plant Components

2.3 *International Organization for Standardization (ISO)*:<sup>5</sup>

ISO 8502–03 Preparation of Steel Substrates before Application of Paint and Related Products — Tests for the Assessment of Surface Cleanliness — Part 3: Assessment of Dust on Steel Surfaces Prepared for Painting (Pressure-Sensitive Tape Method)

2.4 *SSPC: The Society for Protective Coatings Standards*:<sup>6</sup>

SSPC-AB 1 Mineral and Slab Abrasives

SSPC-AB 2 Cleanliness of Recycled Ferrous Metallic Abrasive

SSPC-AB 3 Ferrous Metallic Abrasive

SSPC-AB 4 Recyclable Encapsulated Abrasive Media

SSPC Guide 15 Field Methods for Retrieval and Analysis of Soluble Salts on Steel and Other Nonporous Substrates

SSPC-PA1 Shop, Field and Maintenance Painting of Steel

SSPC-PA2 Measurement of Dry Paint Thickness with Magnetic Gage

SSPC-PA 9 Measurement of Dry Coating Thickness on Cementitious Substrates Using Ultrasonic Gages

SSPC-PA 10 Guide to Safety and Health Requirements for Industrial Painting Projects

SSPC-PA Guide 11 Protecting Edges, Crevices, and Irregular Steel Surfaced by Stripe Coating

SSPC-SP 1 Solvent Cleaning

SSPC-SP 2 Hand Tool Cleaning

SSPC-SP 3 Power Tool Cleaning

SSPC-SP 5/NACE No. 1 White Metal Blast Cleaning

SSPC-SP 6/NACE No. 3 Commercial Blast Cleaning

SSPC-SP 7/NACE No. 4 Brush-Off Blast Cleaning

SSPC-SP 8 Pickling

SSPC-SP 10/NACE No. 2 Near-White Blast Cleaning

SSPC-SP 11 Power Tool Cleaning to Bare Metal

SSPC-SP 13/NACE No. 6 Surface Preparation of Concrete

SSPC-SP 14/NACE No. 8 Industrial Blast Cleaning

SSPC-SP 15 Commercial Grade Power Tool Cleaning

SSPC-SP 16 Brush-Off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-Ferrous Metals

SSPC-VIS 1 Guide and Reference Photographs for Steel Surfaces Prepared by Dry Abrasive Blast Cleaning

SSPC-VIS 2 Method of Evaluating Degree of Rusting on Painted Steel Surfaces

SSPC-VIS 3 Guide and Reference Photographs for Steel Surfaces Prepared by Hand and Power Tool Cleaning

<sup>4</sup> Available from American Society of Mechanical Engineers (ASME), ASME International Headquarters, Three Park Ave., New York, NY 10016-5990, <http://www.asme.org>.

<sup>5</sup> Available from International Organization for Standardization (ISO), 1, ch. de la Voie-Creuse, Case postale 56, CH-1211, Geneva 20, Switzerland, <http://www.iso.ch>.

<sup>6</sup> Available from Society for Protective Coatings (SSPC), 40 24th St., 6th Floor, Pittsburgh, PA 15222-4656, <http://www.sspc.org>.

<sup>3</sup> The last approved version of this historical standard is referenced on [www.astm.org](http://www.astm.org).