



Standard Terminology Relating to Protective Coating and Lining Work for Power Generation Facilities¹

This standard is issued under the fixed designation D4538; 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 reappraisal. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reappraisal.

1. Scope

1.1 This terminology covers terms and their definitions relevant to the use of protective coatings in nuclear power plants.

2. Referenced Documents

2.1 ASTM Standards:²

- D16 Terminology for Paint, Related Coatings, Materials, and Applications
- D1193 Specification for Reagent Water
- D3843 Practice for Quality Assurance for Protective Coatings Applied to Nuclear Facilities
- D3911 Test Method for Evaluating Coatings Used in Light-Water Nuclear Power Plants at Simulated Design Basis Accident (DBA) Conditions
- D4227 Practice for Qualification of Coating Applicators for Application of Coatings to Concrete Surfaces
- D4228 Practice for Qualification of Coating Applicators for Application of Coatings to Steel Surfaces
- D4537 Guide for Establishing Procedures to Qualify and Certify Personnel Performing Coating and Lining Work Inspection in Nuclear Facilities
- D4787 Practice for Continuity Verification of Liquid or Sheet Linings Applied to Concrete Substrates
- D5144 Guide for Use of Protective Coating Standards in Nuclear Power Plants
- D5161 Guide for Specifying Inspection Requirements for Coating and Lining Work (Metal Substrates) (Withdrawn 2013)³
- D5162 Practice for Discontinuity (Holiday) Testing of Non-conductive Protective Coating on Metallic Substrates

¹ This terminology 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 D33.92 on Definitions.

Current edition approved Dec. 1, 2015. Published December 2015. Originally approved in 1986. Last previous edition approved in 2013 as D4538 – 13 DOI: 10.1520/D4538-15.

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.

- D5367 Practice for Evaluating Coatings Applied Over Surfaces Treated With Inhibitors Used to Prevent Flash Rusting of Steel When Water or Water/Abrasive Blasted
- D5962 Guide for Maintaining Unqualified Coatings (Paints) Within Level I Areas of a Nuclear Power Facility (Withdrawn 2008)³

2.2 Other Documents:⁴

- USNRC Regulatory Guide 8.8 Ensuring Occupational Radiation Exposure ALARA at Nuclear Power Stations
- 10CFR20.1 Standards for Protection Against Radiation

3. Terminology

acceptable coating or lining system, *n*—safety-related coating or lining system for which a suitability for application review that meets the plant licensing requirements has been completed and there is reasonable assurance that, when properly applied and maintained, the coating or lining will not detach under normal or accident conditions. **D5144**

ALARA, *n*—concept of reducing radiation exposure to personnel to levels “as low as reasonably achievable,” as defined in the USNRC Regulatory Guide 8.8 and 10CFR20.1(C). **D5144**

blistering, *n*—formation of bubbles in a coating (paint) film. See D16 (take out “ability to resist”). **D3911**

boiling water reactor (BWR), *n*—reactor in which the water moderator-coolant is boiled directly within the reactor core and the pressure in the reactor vessel is only slightly greater than the steam turbine pressure. **D3911**

certification, *n*—written documentation of qualification.

checking, *n*—slight breaks in the film that do not penetrate to the previously applied coating or to the substrate.

chemical spray, *n*—solution of chemicals that could be used during a loss of coolant accident (LOCA) to suppress the incident, to scavenge fission products, and to return the facility to near-ambient conditions. **D3911**

⁴ 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>.