



Designation: D5161 – 04a

Standard Guide for Specifying Inspection Requirements for Coating and Lining Work (Metal Substrates)¹

This standard is issued under the fixed designation D5161; 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.

1. Scope

1.1 This guide is intended to aid the coating specification writer in selecting and specifying the appropriate inspection criteria. It indicates the inspection requirements that may be employed for each of four service environments including mild, moderate, severe, and immersion (see Table 1).

1.2 In order to aid the user in determining when to specify inspection requirements, a relationship between the consequence of failure and the suggested level of inspection is demonstrated (see Fig. 1).

1.3 It is not the intent of this guide to address the selection of protective coating systems, to specify surface preparation and application requirements, or to be a referenced document in a specification.

2. Referenced Documents

2.1 ASTM Standards:²

D1186 Test Methods for Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to a Ferrous Base (Withdrawn 2006)³

D1400 Test Method for Nondestructive Measurement of Dry Film Thickness of Nonconductive Coatings Applied to a Nonferrous Metal Base (Withdrawn 2006)³

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)

D3363 Test Method for Film Hardness by Pencil Test

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

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

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

D5162 Practice for Discontinuity (Holiday) Testing of Nonconductive Protective Coating on Metallic Substrates

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

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

2.2 SSPC Standard:⁴

SSPC VIS 1 Visual Standard for Abrasive Blast Cleaned Steel

SSPC VIS 3 Visual Standard for Power- and Hand-Tool Cleaned Steel

3. Terminology

3.1 *Service Environments Terms are as follows:*

3.1.1 *mild service, n*—indoor or protected outdoor areas not subject to rain, dew or corrosive elements, or both.

3.1.2 *moderate service, n*—areas subject to weather away from coastal or corrosive industrial environments, or both.

3.1.3 *severe service, n*—corrosive/erosive environments including coastal salt laden atmosphere, industrial atmosphere, and high intensity sunlight.

3.1.4 *immersion service, n*—wetted surfaces of tanks, containers, pits, etc. and surfaces that are normally wet with condensation or exposed to other corrosive environments.

4. Significance and Use

4.1 The requirements for inspection should be addressed in all protective coating and lining work specifications.

¹ 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.

Current edition approved Aug. 1, 2004. Published September 2004. Originally approved in 1991. Last previous edition approved in 2004 as D5161 – 04. DOI: 10.1520/D5161-04A.

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.

⁴ Available from Society for Protective Coatings (SSPC), 40 24th St., 6th Floor, Pittsburgh, PA 15222-4656, http://www.sspc.org.