



Designation: D 5161 – 04

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

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1. Scope

1.1 This guide is intended to aid the coating specification writer in selecting and specifying the appropriate inspection requirements. 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

- D 1186 Test Methods for Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to a Ferrous Base
- D 1400 Test Method for Nondestructive Measurement of Dry Film Thickness of Nonconductive Coatings Applied to a Nonferrous Metal Base
- D 3276 Guide for Painting Inspectors (Metal Substrates)
- D 4285 Test Method for Indicating Oil or Water in Compressed Air
- D 4414 Practice for Measurement of Wet Film Thickness by Notch Gages
- D 4417 Test Methods for Field Measurement of Surface Profile of Blast Cleaned Steel
- D 4940 Test Method for Conductimetric Analysis of Water Soluble Ionic Contamination of Blasting Abrasives
- D 5162 Practice for Discontinuity (Holiday) Testing of Nonconductive Protective Coating on Metallic Substrates

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.

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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.

TABLE 1 Inspection Requirements

| Suggested Inspection Requirements | Service Environments | | | |
|------------------------------------|----------------------|----------|--------|-----------|
| | Mild | Moderate | Severe | Immersion |
| Pre-Surface Preparation: | | | | |
| Visual for contaminants | X | X | X | X |
| Visual for surface anomalies | | | X | X |
| Surface Preparation: | | | | |
| Air supply for contaminants | | | X | X |
| Abrasives for type and cleanliness | | | X | X |
| Ambient conditions and dew point | | | X | X |
| Surface anomalies | | | X | X |
| Degree of cleanliness | X | X | X | X |
| Profile | | X | X | X |
| Visual final for contamination | | | X | X |
| Coating Application: | | | | |
| Materials | | X | X | X |
| Mixing | | | X | X |
| Equipment | | X | X | X |
| Air supply for contaminants | | X | X | X |
| Ambient conditions and dew point | | | X | X |
| Wet film thickness | | | X | X |
| Intercoat parameters | | X | X | X |
| Appearance between coats | | | X | X |
| Dry film thickness between coats | | | X | X |
| Final Acceptance: | | | | |
| Appearance | X | X | | |
| Visual runs and sags | | X | X | X |
| Visual holidays and pinholes | | | X | X |
| Dry film thickness | | X | X | X |
| Holiday tests | | | | X |
| Repairs | | | X | X |
| Final cure | | | X | X |

E 337 Test Method for Measuring Humidity with a Psychrometer (the Measurement of Wet and Dry-Bulb Temperatures)

2.2 SSPC Standard:³

³ Available from The Society for Protective Coatings (SSPC), 40 24th St., 6th Floor, Pittsburgh, PA 15222-4656.