

SSPC: The Society for Protective Coatings

COATING STANDARD NO. 42

Epoxy Polyamide Coating, Performance-Based

1. Scope

This standard contains performance requirements for a two-component epoxy polyamide coating for use as a primer on blast cleaned steel surfaces. The coating may also be applied in multiple coats for enhanced barrier protection. Individual products meeting minimum performance requirements of this standard may vary in formulation, raw materials, and application characteristics.

2. Description

2.1 This coating, when properly applied and cured, is suitable for use on steel surfaces in SSPC Environmental Zones 2A (frequently wet by fresh water), 2B (frequently wet by salt water), 3A (chemical, acidic), 3B (chemical, neutral), and 3C (chemical, alkaline).⁽¹⁾

2.2 This coating is intended for application by brush, spray, or roller for use as a primer under a compatible topcoat, or in multiple applications as an epoxy multi-coat system. The performance requirements in this standard are intended for qualification of a single-coat application.

2.3 Units of Measure: This standard makes use of both the IEEE/ASTM SI 10⁽²⁾, "American National Standard for Metric Practice" International System Units (SI) and U.S. Customary units. S.I. Units are presented first, followed by an approximate conversion into U.S. Units. The measurements may not be exact equivalents; therefore, each system shall be used independently of the other.

3. Referenced Standards

3.1 The date of the referenced standard in effect at the time of publication of this standard shall govern unless otherwise specified. Standards marked with an asterisk (*) are referenced only in the Notes, which are not requirements of this standard.

3.2 If there is a conflict between the requirements of any of the cited reference documents and this standard, the requirements of this standard shall prevail.

3.3 SSPC STANDARDS AND JOINT STANDARDS:

SSPC-PA 2	Determining Compliance to Dry Coating Thickness Requirements
SSPC-PA 15	Material and Preparation Requirements for Steel Test Panels Used to Evaluate the Performance of Industrial Coatings
SSPC-PA 16	Method for Evaluating Scribe Undercutting on Coated Steel Test Panels Following Corrosion Testing
SSPC-VIS 2	Standard Method for Evaluating Degree of Rusting on Painted Steel Surfaces
SSPC-Guide 13	Guide for the Identification and Use of Industrial Coating Materials in Computerized Product Databases

3.4 ASTM INTERNATIONAL STANDARDS:

ASTM D522	Standard Test Methods for Mandrel Bend Test of Attached Organic Coatings
* ASTM D523	Standard Test Method for Specular Gloss
* ASTM D562	Standard Test Method for Consistency of Paints Using the Stormer Viscometer
ASTM D660	Standard Test Method for Evaluating Degree of Checking of Exterior Paints
ASTM D661	Standard Test Method for Evaluating Degree of Cracking of Exterior Paints
ASTM D714	Standard Test Method for Evaluating Degree of Blistering of Paints
* ASTM D1296	Standard Test Method for Odor of Volatile Solvents and Diluents
ASTM D1308	Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes
* ASTM D1475	Standard Test Method for Density of Liquid Coatings, Inks, and Related Products

⁽¹⁾ SSPC Environmental Zones are defined in "Using SSPC Coating Material Standards, available as a downloadable pdf file from <http://www.sspc.org/media/documents/Technical_Committee_Documents/Using_SSPC_Coating_Material_Standards_1.pdf>

⁽²⁾ AS M international, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959 or referenced AS M standards, visit the AS M website, www.astm.org, or contact AS M Customer Service at service@astm.org or Annual Book of AS M Standards volume information, refer to the standard's Document Summary page on the AS M website

This standard developed by the SSPC C 13 C Committee was first issued in July 2010 and was last revised in 2015

* ASTM D1535	Standard Practice for Specifying Color by the Munsell System
* ASTM D1640	Test Methods for Drying, Curing, or Film Formation of Organic Coatings at Room Temperature
* ASTM D1652	Standard Test Method for Epoxy Content of Epoxy Resins
ASTM D1654	Standard Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments
ASTM D1849	Standard Test Method for Package Stability of Paint
* ASTM D2621	Standard Test Method for Infrared Identification of Vehicle Solids From Solvent-Reducible Paints
* ASTM D2369	Standard Test Method for Volatile Content of Coatings
* ASTM D2371	Standard Test Method for Pigment Content of Solvent-Reducible Paints
ASTM D2794	Standard Test Method for Resistance of Organic Coatings to Effect of Rapid Deformation (Impact)
ASTM D3363	Standard Test Method for Film Hardness by Pencil Test
ASTM D4417	Standard Test Methods for Field Measurement of Surface Profile of Blast Cleaned Steel
ASTM D4541	Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers
ASTM D4585	Standard Practice for Testing Water Resistance of Coatings Using Controlled Condensation
ASTM D5402	Standard Practice for Assessing the Solvent Resistance of Organic Coatings Using Solvent Rubs
ASTM D5894	Standard Practice for Cyclic Salt Fog/UV Exposure of Painted Metal, (Alternating Exposures in a Fog/Dry Cabinet and a UV/Condensation Cabinet)

3.5 FEDERAL SPECIFICATIONS AND STANDARDS:⁽³⁾

Method 3011 Condition in Container

⁽³⁾ Federal Test Method 141D is available online from http://www.assistdocs.com/search/search_basic.cfm (Search for 141D)

3.6 UNITED NATIONS STANDARD⁽⁴⁾

GHS Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

4. Composition Requirements

4.1 The base component of the coating shall contain an epoxy resin and may include color pigments, mineral fillers, thixotropes, leveling agents and volatile solvents. The epoxy resin shall be a di-epoxide condensation product of epichlorohydrin with terminal epoxide groups.⁽⁵⁾

4.2 The curing agent component of the coating shall contain a liquid type polyamide resin and may include color pigments, mineral fillers, thixotropes, leveling agents and volatile solvents (see Note 11.1). The polyamide resin shall be a condensation product of dimerized and/or monofunctional fatty acids and polyamines.

4.3 ANALYTICAL TEST DATA: If required by the purchaser, the coating manufacturer shall provide certificates of analysis for coating batches qualified by independent testing to meet this standard for use in verifying batch-to-batch consistency of material (see Note 11.2).

5. Standard Testing Conditions

5.1 TEST PANELS: Unless otherwise specified, test panels shall comply with requirements of SSPC-PA 15, except that either Method B or Method C of ASTM D4417 may be used to obtain profile readings. The method used and the profile reading shall be reported.

Panels used for the flexibility test described in Section 7.4 shall meet requirements of ASTM D522.

5.2 APPLICATION: The coating shall be spray applied as a single coat in accordance with requirements of the manufacturer's product data sheet.

5.3 DRY FILM THICKNESS: The dry film thickness (DFT) of the coating applied to test panels shall meet the manufacturer's recommended range. Unless otherwise specified, the maximum single-coat DFT shall be 300 μm (~12 mils). The DFT shall be measured in accordance with SSPC-PA 2, Level 3 Appendix 5.

5.4 CURE: Unless otherwise specified by tests in this standard, the coating shall be dried and cured at a temperature between 20 and 25 °C (68 and 77 °F) for a

⁽⁴⁾ United Nations Economic Commission for Europe, Transport Division, Palais des Nations, CH - 1211 Geneva 10, Switzerland. Copies of this standard may be obtained from the United Nations Publications Customer Service, National Book Network, 15200, 15200 NBN Way, Ridge Summit PA 17124 < <https://unp.un.org> >

⁽⁵⁾ The epoxy component should be an epoxy resin with a functionality of 1 or higher