

SSPC: The Society for Protective Coatings

PAINTING SYSTEM NO. 12.01

One Coat Zinc-Rich Painting System

1. Scope

1.1 This specification covers a one-coat zinc-rich painting system to be used on carbon steel in mild to moderately severe environments and corrosive marine atmospheric environments (see Note 10.1).

1.2 Zinc-rich coatings, both topcoated and untopcoated, have been used successfully in a wide variety of environmental zones. For a detailed breakdown of applicability of various types of zinc-rich coatings in different environmental zones, refer to SSPC-Guide 12.00. Consult the coating manufacturer for specific exposure recommendations.

1.3 This specification does not pertain to weldable pre-fabrication zinc-rich primers, which are typically applied at thicknesses less than 25 micrometers (1 mil). Further information regarding these and other zinc-rich primers can be found in SSPC-PS Guide 12.00.

2. Description

2.1 This painting system consists of abrasive blast cleaning and one coat of zinc-rich coating.

2.2 This specification describes the application and field performance requirements for a one-coat zinc-rich system and should be used with SSPC-Paint 20 or SSPC-Paint 29 and with other SSPC specifications covering surface preparation, application, thickness, and inspection. SSPC-Paint 20 and SSPC-Paint 29 define the minimum compositional and performance requirements for zinc-rich coatings. If topcoating will be required, refer to SSPC-PS Guide 8.00 and to Note 10.2 of this specification.

3. Referenced Standards

3.1 The latest issue, revision, or amendment of the referenced standards in effect on the date of invitation to bid shall govern, unless otherwise specified. Standards marked with an asterisk (*) are referenced only in the Notes, which are not requirements of this specification.

3.2 If there is a conflict between the requirements of any of the cited referenced standards and this specification, the

requirements of this specification shall prevail.

3.3 SSPC STANDARDS AND JOINT STANDARDS:

* Guide 14	Guide for Repair of Imperfections in Galvanized or Inorganic Zinc-Coated Steel Using Organic Zinc-Rich Coatings
PA 1	Shop, Field, and Maintenance Painting of Steel
PA 2	Measurement of Dry Coating Thickness with Magnetic Gages
Paint 20	Zinc-Rich Primers (Type I—Inorganic, and Type II—Organic)
Paint 29	Zinc Dust Sacrificial Primer, Performance-Based
PS Guide 12.00	Guide for Selecting Zinc-Rich Painting Systems
PS Guide 8.00	Guide to Topcoating Zinc-Rich Primers
* SP 8	Pickling
SP 5/NACE No. 1	White Metal Blast Cleaning
SP 6/NACE No. 3	Commercial Blast Cleaning
SP 10/NACE No. 2	Near-White Blast Cleaning
* SP 12/NACE No. 5	Surface Preparation and Cleaning of Steel and Other Hard Materials by High- and Ultrahigh-Pressure Waterjetting Prior to Recoating

3.4 ASTM INTERNATIONAL STANDARDS:¹

* D 3925	Standard Practice for Sampling Liquid Paints and Related Pigmented Coatings
D 4417	Standard Test Methods for Field Measurement of Surface Profile of Blast Cleaned Steel

4. Surface Preparation

4.1 DEGREE OF CLEANING: The minimum surface preparation shall be SSPC-SP 6 for new steel and SSPC-SP 10 for previously painted or pitted steel. If specified in the procurement documents or by the coating manufacturer, higher

¹ ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

degrees of blast cleaning (SSPC-SP 5 or SSPC-SP 10) shall be substituted (see Notes 10.3 and 10.4).

4.2 PROFILE HEIGHT: The profile height shall be within the range of 40 to 90 micrometers (1.5 to 3.5 mils) or as recommended by the manufacturer of the primer. Profile shall be measured in accordance with ASTM D 4417.

5. Coatings

5.1 COATING: The coating shall be in accordance with SSPC-Paint 20 or SSPC-Paint 29.

6. Coating Application

6.1 COATING APPLICATION: The coating shall be applied in accordance with SSPC-PA 1 (see Notes 10.5 and 10.6).

6.2 TOUCH-UP COATING: Touch-up coating shall be done in accordance with SSPC-PA 1 and in particular with the section thereof entitled "Field Painting." Unless otherwise specified, touch-up coating shall be done in the field with a compatible zinc-rich coating (see Note 10.7).

6.3 NUMBER OF COATS: This coating system shall consist of one coat.

6.4 DRY FILM THICKNESS (DFT): The dry film thickness shall be a minimum of 64 micrometers (2.5 mils) or as specified by the manufacturer of the primer. DFT shall be measured in accordance with SSPC-PA 2. Refer to manufacturer's data sheet for maximum allowable dry film thickness (see Note 10.8).

6.4.1 Low Dry Film Thickness: Low dry film thickness shall be repaired based upon the written recommendations of the zinc-rich coating manufacturer.

6.4.2 Excessive Dry Film Thickness: Excess thickness above the maximum acceptable levels shall be repaired according to the recommendations of the coating manufacturer. This may require the removal of excessive thickness only, or complete removal and reapplication of the coating (see Note 10.9).

6.5 REPAIR: In the event of mudcracking or loss of adhesion, the defective zinc-rich coating shall be suitably removed and the affected area shall be recoated.

7. Field Performance

7.1 Upon request of the purchaser, the coating supplier shall furnish case histories of satisfactory service in an environment similar to that intended. The names and addresses of previous users who can give information regarding coating service

performance must be included. The specifier shall determine the applicability of this data for his specific use.

7.2 Additionally, or in lieu of suitable in-service field exposure or application histories as described above, the coating supplier and the user may establish a criterion of performance agreeable to all parties.

8. Inspection

8.1 All work and materials supplied under this specification are subject to timely inspection by the purchaser or his authorized representative. The contractor shall correct such work or replace such material as is found defective under this specification. In case of dispute, unless otherwise specified, the arbitration or settlement procedure established in the procurement documents shall be followed. If no arbitration or settlement procedure is established, then a procedure mutually agreeable to purchaser, material supplier, and contractor shall be used.

8.2 Samples of paints under this painting system may be requested by the purchaser and shall be supplied upon request along with the manufacturer's name and identification for the materials. Samples may be requested at the time the purchase order is placed or may be taken from unopened containers at the job site (see Note 10.10).

8.3 Unless otherwise specified, the sampling shall be in accordance with ASTM D 3925.

9. Disclaimer

9.1 While every precaution is taken to ensure that all information furnished in SSPC standards and specifications is as accurate, complete, and useful as possible, SSPC cannot assume responsibility nor incur any obligation resulting from the use of any materials, coatings, or methods specified herein, or of the specification or standard itself.

9.2 This specification does not attempt to address problems concerning safety associated with its use. The user of this specification, as well as the user of all products or practices described herein, is responsible for instituting appropriate health and safety practices and for ensuring compliance with all governmental regulations.

10. Notes

Notes are not requirements of this specification.

10.1 MANUFACTURER'S LITERATURE: This specification is intended to be supplemented by the coating manufacturer's instructions and literature. If the manufacturer's literature or recommendations are to become part of the requirements