SSPC: The Society for Protective Coatings

PAINTING SYSTEM GUIDE NO. 15.00

Guide for Selecting Chlorinated Rubber Painting Systems

This Guide offers to the specifier a selection of chlorinated rubber painting systems that will provide good protection for steel structures exposed in a variety of environments. Select the desired surface preparation, primer, intermediate(s), and topcoat from those listed herein and insert them into the standard SSPC Painting System format. In order to aid in the selection, short comments are given. For additional information consult the "Commentary on Painting Systems" and the referenced standards.

1. Scope

1.1 These specifications cover chlorinated rubber painting systems for blast cleaned or pickled steel. These coatings are not recommended for areas exposed to strong organic solvents, oxidizing acids, or the areas where the surface temperature exceeds 74°C (165°F). Straight chain unsaturated acids, and fats and oils of animal or vegetable origin will cause softening and swelling of these coatings.

1.2 These systems are suitable for use on parts or structures exposed in Environmental Zones 1A (interior, normally dry), 1B (exterior, normally dry), 2A (frequently wet by fresh water), 2B (frequently wet by salt water), 2C (fresh water immersion), 2D (salt water immersion), 3A (chemical, acid), 3B (chemical, neutral), and 3C (chemical, alkaline).

1.3 Chlorinated rubber paints are single-package systems that dry by solvent evaporation and have low permeability to water vapor and oxygen. After drying, they are nonflammable and resistant to mildew growth.

1.4 The color of the finish must be specified.

2. Description

2.1 This guide outlines the components of a complete chlorinated rubber painting system. A standard system consists of surface preparation by commercial blast cleaning or pickling, one coat of chlorinated rubber primer, one intermediate coat, and one finish coat.

3. Reference Standards

3.1 The standards referenced in this guide are listed in Section 3.4 through 3.7 and form a part of the specification.

3.2 The latest issue, revision, or amendment of the reference standards in effect on the date of invitation to bid shall govern unless otherwise specified.

3.3 If there is a conflict between the requirements of any of the cited reference standards and the specification, the requirements of the specification shall prevail.

3.4 SSPC STANDARDS AND JOINT STANDARDS:

PA 1	Shop, Field, and Maintenance Painting of Steel
PA 2	Measurement of Dry Coating Thickness With Magnetic Gages
PA Guide 4	Guide to Maintenance Repainting with Oil Base or Alkyd Painting Systems
Paint 17	Chlorinated Rubber Inhibitive Primer
Paint 18	Chlorinated Rubber Intermediate Coat Paint
Paint 19	Chlorinated Rubber Topcoat Paint
SP 2	Hand Tool Cleaning
SP 3	Power Tool Cleaning
SP 5/NACE No. 1	White Metal Blast Cleaning
SP 6/NACE No. 3	Commercial Blast Cleaning
SP 8	Pickling
SP 10/NACE No. 2	Near-White Blast Cleaning

3.5 AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) STANDARD:

D 3925	Practice for Sampling Liquid Paints and Related Pigmented Coatings

3.6 FEDERAL STANDARD:

TT-P-1046	(canceled) Primer Coating: Zinc Dust, Chlorinated Rubber, (for Steel and Galvanized Surfaces)

4. Surface Preparation

4.1 SSPC-SP 6, "Commercial Blast Cleaning," or SSPC-SP 8, "Pickling." If specified in the procurement documents, better degrees of blast cleaning shall be substituted (SSPC-

SP 5 or 10).

COMMENT: Overall coating system performance is a function of surface preparation. Blast cleaning or pickling of the steel is the minimum recommended surface preparation for new work.

For highly corrosive conditions and immersion service, a minimum of SSPC-SP 10, "Near-White Blast Cleaning" or SSPC-SP 8, "Pickling" is recommended. Mill scale is particularly detrimental on immersed or wet steel.

For less severe environments, SSPC-SP 6, "Commercial Blast Cleaning," may be used. SSPCSP 2, "Hand Tool Cleaning," or SSPC-SP 3, "Power Tool Cleaning," may be substituted only where blast cleaning is impossible, i.e., area access is limited, or environmental requirements are involved.

5. Paints

5.1 CHLORINATED RUBBER PRIMERS: After cleaning, the steel shall be primed with one coat of paint conforming with the following specification.

COMMENT: Due to the limited protection afforded by shop primers, prolonged field exposure before fabrication should be avoided. Where prolonged exposure is anticipated, consideration should be given to two coats, each 38 micrometers (1.5 mils) dry film thickness, of shop primer. One coat may not provide adequate protection for more than 90 days.

Whenever chlorinated rubber paint systems are to be used over galvanized steel or nonferrous metals, a wash primer is recommended to insure good adhesion.

5.1.1 SSPC-Paint 17, "Chlorinated Rubber Inhibitive Primer":

COMMENT: When this preferred primer is used, excellent total system performance results. The primer affords ease of application, subsequent coat adhesion (whether shop or field applied), flexibility and durability of the total paint system; it also affords a high degree of impermeability, resistance to abrasion, and protection against corrosive environments.

5.1.2 Proprietary Primer:

COMMENT: A proprietary primer of proved performance capability may be substituted for the above if desired by the specifier. Specify the manufacturer, trade name, and product number of the desired proprietary paint.

Several generic types of proprietary primers may be used. They include modified chlorinated rubber, chemically- cured epoxy, zinc-rich paints, or those coatings specifically recommended by the manufacturer. Where subsequent coats from different manufacturers are involved, compatibility tests must be made.

5.2 INTERMEDIATE COAT(S) FOR CHLORINATED RUBBER PAINTING SYSTEMS:

5.2.1 SSPC-Paint 18, "Chlorinated Rubber Intermediate Coat Paint":

COMMENT: When this preferred intermediate coat is used, minimum film thickness coating system requirements are readily obtained.

5.3 CHLORINATED RUBBER FINISH COATS:

5.3.1 SSPC-Paint 19, "Chlorinated Rubber Topcoat Paint":

COMMENT: When this preferred topcoat is used, maximum resistance is obtained in most chemical and corrosive environments.

5.3.2 Proprietary Finish Paint:

COMMENT: A proprietary finish paint of proved performance capability may be substituted for any of the above if desired by the specifier. Specify the manufacturer, trade name, product number, and color of the desired proprietary paint.

Several types of proprietary topcoats may be used. They include alkyd, acrylic, or hydrocarbon modifications to improve gloss and color retention. However, overall chemical corrosion resistance may be impaired.

6. Paint Application

6.1 PAINT APPLICATION: Follow requirements of SSPC-PA 1, "Shop, Field, and Maintenance Painting of Steel."

COMMENT: Chlorinated rubber paints can be applied over a surface temperature range of 2 to 49°C (35 to 120°F), where the surface temperature is at least 3°C (5°F) above the dew point at the time of application. Under special conditions and when no ice is present on the surface, these coatings can be applied at temperatures as low as -15°C (5°F).

Sufficient time should be allowed for air drying between coats to insure solvent removal. Solvent entrapment can occur with single-coat applications if the dry film thickness is more than 125 micrometers (5 mils).

6.2 FIELD TOUCH-UP PAINTING: In accordance with specification SSPC-PA 1, "Shop, Field, and Maintenance Painting of Steel," and in particular with the section thereof entitled "Field Painting."

6.3 MAINTENANCE PAINTING: For maintenance painting procedures, see SSPC-PA Guide 4, "Guide to Maintenance Repainting with Oil Base or Alkyd Painting Systems."

COMMENT: This guide covers the steps necessary for repainting previously painted steel surfaces.

6.4 NUMBER OF COATS: Two or three.

COMMENT: A primer coat followed by both an interme-

diate coat and a topcoat is ordinarily required. For less severe environments, a primer coat meeting SSPC-Paint 17, "Chlorinated Rubber Inhibitive Primer," followed by a coat meeting SSPC-Paint 18, "Chlorinated Rubber Intermediate Coat Paint," or SSPC-Paint 19, "Chlorinated Rubber Topcoat Paint," may be used, provided that the total dry film thickness applied is at least 100 micrometers (4.0 mils).

6.5 DRY FILM THICKNESS OF PAINT SYSTEM: Not less than the following as measured in accordance with SSPC- PA 2, "Measurement of Dry Coating Thickness with Magnetic Gages": primer 38 micrometers (1.5 mils); intermediate, if specified, 75 micrometers (3.0 mils); topcoat 38 micrometers (1.5 mils); for a three-coat system 150 micrometers (6.0 mils); for a two-coat, if specified, system 100 micrometers (4.0 mils).

7. Inspection

7.1 All work and materials supplied under this specification is 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. (See Note 9.1.) In case of dispute, unless otherwise specified, the arbitration or settlement procedure established in the procurement documents shall be followed. If no arbitration procedure is established, the procedure specified by the American Arbitration Association shall be used.

7.2 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.

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

8. Disclaimer

8.1 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.

8.2 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 insuring compliance with all governmental regulations.

9. Notes

Notes are not a requirement of this specification.

9.1 The procurement documents should establish the responsibility for samples, testing, and any required affidavit certifying full compliance with the specification.