

SSPC: The Society for Protective Coatings

PAINT SPECIFICATION NO. 18

Chlorinated Rubber Intermediate Coat Paint

1. Scope

1.1 This specification covers a fast drying chlorinated rubber intermediate paint, available in white or tints, intended for use as either an intermediate coat or topcoat over a chlorinated rubber primer or other suitable primers. It has good durability when exposed to exterior environments but may show some tendency to chalk. This coating may be used on exterior non-submerged surfaces, as well as most submerged surfaces. This coating is not recommended for areas exposed to strong organic solvents, oxidizing acids, or areas where the surface temperature exceeds 165°F (74°C). Straight chain unsaturated acids and fats and oils of animal or vegetable origin will cause softening and swelling of the coating.

1.2 This coating, when applied over properly primed steel surfaces and followed by at least one (optional) finish coat of SSPC-Paint 19, "Chlorinated Rubber Topcoat Paint," is suitable for exposures 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 This paint is intended for application by brush, roller, or spray and is to be applied in accordance with SSPC-PA 1, "Shop, Field, and Maintenance Painting of Steel."

1.4 The preferred types of primers for use under this coating and on steel surfaces include chlorinated rubber (SSPC-Paint 17), modified chlorinated rubber, chemically cured epoxy, zinc-rich, and others specifically recommended by the manufacturer. Recoat of each primer should conform to the manufacturer's directions. Where a zinc-rich primer is used and the system is considered for water-immersion services, a seal-coat between the primer and this intermediate coat may be required to eliminate blistering.

1.5 If this coating is applied over alkyd- or oil-base enamels, there is the possibility of lifting, particularly on interior surfaces. A spot check is necessary to determine suitability. If lifting occurs, then a seal-coat, as recommended by the manufacturer, may be required. For immersion service, this coating should not be applied over alkyd- or oil-base enamels.

2. Description

2.1 This coating is a mixture of white pigments, tinting pigments, chlorinated rubber, chlorinated resins, plasticizers, and solvents. Details of the composition are given in Table 1.

2.2 This paint contains approximately 35% by volume of nonvolatile film-forming solids (pigment and binder). The theoretical spreading rate for a 3.0 mil (76 micrometers) dry film thickness is 190 square feet/U.S. gallon (4.6 square meters/liter). Actual spreading rates can be significantly lower.

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.

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:

SSPC Guide 13	Guide for the Identification and Use of Industrial Coating Material in Computerized Product Databases
PA 1	Shop, Field, and Maintenance Painting of Steel
Paint 17	Chlorinated Rubber Primer
Paint 19	Chlorinated Rubber Topcoat Paint

3.5 ASTM INTERNATIONAL STANDARDS:

D 13	Specification for Spirits of Turpentine
D 185	Test Methods for Coarse Particles in Pigments, Pastes, and Paints
D 445	Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (and the Calculation of Dynamic Viscosity)
D 476	Classification For Dry Pigmentary Titanium Dioxide
D 562	Test Method for Consistency of Paints Measuring Krebs Unit (KU) Viscosity Using a Stormer-type Viscometer
D 605	Specification for Magnesium Silicate Pigment (Talc)
D 607	Specification for Wet Ground Mica Pigments
D 1208	Test Methods for Common Properties of Certain Pigments
D 1210	Test Methods for Fineness of Dispersion of Pigment-Vehicle Systems by Hegman-type Gage

TABLE 1
COMPOSITION

INGREDIENTS	REQUIRED		TYPICAL COMPOSITION		INGREDIENT STANDARDS	
	Min. Wt. %	Max. Wt. %	Wt.%	Vol.%	ASTM	Federal
PIGMENT: (23 ± 7 wt. %)						
Titanium Dioxide	10.0	—	4.0	1.3	D 476, Type IV	—
Tinting Pigments ¹	—	3.0	0.4	0.3	—	—
Extender Pigments:						
Magnesium Silicate	50.0	65.0	15.6	7.3	D 605	—
Mica	8.0	25.0	6.4	2.9	D 607	—
VEHICLE: (77 ± 7 wt. %)						
Chlorinated Rubber ²	23.0	30.0	20.1	15.5	—	—
Chlorinated Hard Resins	—	—	5.0	4.0	—	MIL-C-429, Type II
Chlorinated Plasticizers	8.0	22.0	10.0	11.0	—	MIL-C-429, Type I
Plasticizer ³	—	—	—	—	—	—
Solvents ⁴	—	65.0	37.0	37.0	56.2	—
Vehicle Stabilizers ⁵	0.7	—	0.6	0.7	—	—
Vapor Phase Stabilizers ⁶	0.3	—	0.2	0.3	—	—
Suspending Aids ⁷	0.5	2.0	0.7	1.5	—	—
TOTALS			100.0	100.0		

- ¹ Lampblack or lightfast and compatible, chemically resistant colored pigments shall be used to provide a tint or color when desired. NOTE—When this paint is to be used in a paint system to the interior of potable water vessels, the ingredients used shall not be deemed objectionable for such use by the U.S. Environmental Protection Agency or any agency that would have jurisdiction over such matters
- ² The chlorinated rubber shall contain approximately 66% by weight chlorine. The viscosity (based on a solution of 20% by weight concentration in toluene at 20°C) shall fall in the range of 9 to 14 centipoise, when measured according to ASTM D 445. Up to 50% by weight of the amount of chlorinated rubber could be of the viscosity range of 17 to 25 centipoises, but spray application is more difficult.
- ³ Alternative plasticizers can be used, provided they are compatible, high quality, and chemically resistant.
- ⁴ The solvent shall consist of aromatic or a blend of aromatic and aliphatic hydrocarbons, with the aliphatic portion limited to 25% by weight, and shall have a minimum kauri butanol value of 75. Up to 10% by weight of turpentine (ASTM D 13) or other high-boiling aromatic type solvents may be added to improve application properties.
- ⁵ The vehicle stabilizer shall be a mixture of four parts zinc oxide and one part pentaerythritol. Other suitable chloride acceptors, such as an epoxidized vegetable oil, may be used.
- ⁶ A vapor-phase stabilizer, such as propylene oxide, can also be used. It must be a high-grade commercial material suitable for the intended purpose.
- ⁷ The suspending aid shall be hydrogenated castor oil or montmorillonite mineral.

- D 1296** Test Method for Odor of Volatile Solvents and Diluents
- D 1475** Test Method for Density of Liquid Coatings, Inks, and Related Products
- D 1542** Test Method for Qualitative Detection of Rosin in Varnishes
- D 3278** Test Methods for Flash Point of Liquids by Small-Scale Closed-Cup Apparatus
- D 3925** Practice for Sampling Liquid Paints and Related Pigmented Coatings

3.6 FEDERAL STANDARDS:

MIL-C-429 Chlorinated Paraffin, Technical

FED-STD-141 Paint, Varnish, Lacquer and Related Materials: Methods of Inspection, Sampling and Testing

Method 2011 Preparation of Steel Panels

Method 3011 Condition in Container

Method 4021.1 **(canceled)** Pigment Content (Ordinary Centrifuge)