

SSPC: The Society for Protective Coatings

PAINT SPECIFICATION NO. 5

Zinc Dust, Zinc Oxide and Phenolic Varnish Paint

1. Scope

1.1 This specification covers a quick drying zinc dust, zinc oxide, and phenolic varnish paint for steel or galvanized surfaces. It has very good rust inhibitive characteristics, but only fair wetting ability for rusting, greasy, or oily surfaces. It has a drying time of about 12 hours, good durability even when weathered before finish coating and may be used for intermediate and finish coats.

1.2 This paint is supplied in two-package kits: one package contains the liquid vehicle (Component A); the other package contains the zinc dust-zinc oxide pigment (Component B).

1.3 This paint is suitable for exposure in Environmental Zones 1A (interior, normally dry) and 1B (exterior, normally dry), and is particularly suited for exposure in Environmental Zone 2A (frequently wet by fresh water). It is intended for brush or spray application over steel surfaces prepared in accordance with SSPC-SP 6, "Commercial Blast Cleaning;" SSPC-SP 10, "Near-White Blast Cleaning;" SSPC-SP 5, "White Metal Blast Cleaning;" and SSPC-SP 8, "Pickling;" or over clean galvanized steel.

1.4 This paint is suitable as a shop primer, field primer, maintenance primer, or intermediate coat and is to be applied in accordance with SSPC-PA 1, "Shop, Field, and Maintenance Painting of Steel." This paint will dry in about 12 hours and should be recoated within 24 hours for optimum intercoat adhesion.

2. Description

2.1 The good weathering ability of this primer is the result of its phenolic varnish vehicle. Details of the composition are given in Table 1.

2.2 This paint contains approximately 60% by volume of nonvolatile film-forming solids (pigment and binder). The theoretical spreading rate for a 2.0 mils (51 micrometers) dry film thickness is 480 square feet/U.S. gallon (11.8 square meters/liter). Actual spreading rates can be significantly lower.

3. Reference Standards

3.1 The standards referenced in this specification are listed in Sections 3.4 through 3.7 and form a part of this

specification.

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

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

3.4 SSPC STANDARDS AND JOINT STANDARDS:

PA 1	Shop, Field, and Maintenance Painting of Steel
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) STANDARDS:

D 12	Specification for Raw Tung Oil
D 79	Specification for Zinc Oxide Pigments
D 154	Guide for Testing Varnishes
D 185	Test Methods for Coarse Particles in Pigments, Pastes, and Paints
D 235	Specification for Mineral Spirits (Petroleum Spirits) (Hydrocarbon Dry Cleaning Solvent)
D 331	Specification for 2-Ethoxyethanol
D 520	Specification for Zinc Dust Pigment
D 562	Test Method for Consistency of Paints Using the Stormer Viscometer
D 600	Specification for Liquid Paint Driers
D 801	Methods for Sampling and Testing Dipentene
D 1208	Test Methods for Common Properties of Certain Pigments
D 1210	Test Methods for Fineness of Dispersion of Pigment-Vehicle Systems
D 1296	Test Method for Odor of Volatile Solvents and Diluents
D 1475	Test Method for Density of Paint, Varnish, Lacquer, and Related Products
D 1542	Test Method for Qualitative Detection of Rosin in Varnishes
D 1544	Test Method for Color of Transparent Liq-

	uids (Gardner Color Scale)
D 1545	Test Method for Viscosity of Transparent Liquids by Bubble Time Method
D 1642	Test Methods for Elasticity or Toughness of Varnishes
D 2369	Test Method for Volatile Content of Coatings
D 2371	Test Method for Pigment Content of Solvent-Reducible Paints
D 3278	Test Methods for Flash Point of Liquids by Setaflash Closed-Cup Apparatus
D 3734	Specification for High-Flash Aromatic Naphthas
D 4400	Test Method for Sag Resistance of Paints Using Multinotch Applicator

Method 4321	Brushing Properties
Method 4331	Spraying Properties
Method 4541	Working Properties and Appearance of Dried Film

3.7 AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) STANDARD:

Z129.1	Hazardous Industrial Chemicals – Precautionary Labeling
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4. Composition

4.1 Ingredients and proportions shall be as specified in Table 1.

4.2 Each component of this paint based on the specified ingredients shall be uniform, stable in storage, and free from grit and coarse particles. No rosin or rosin derivatives may be used. Beneficial additives such as antiskinning agents, suspending agents, or wetting aids may be added.

4.3 The phenolic varnish portion of this paint shall conform to the composition requirements of Table 2.

4.4 The mixed paint shall conform to the composition (analysis) requirements of Table 3.

5. Properties

5.1 The phenolic varnish portion of this paint shall meet the requirements of Table 4 and Sections 5.2 through 5.8.

5.2 ODOR: Shall be normal for the materials permitted (ASTM D 1296).

3.6 FEDERAL STANDARDS:

A-A-59106	Ethylene Glycol Monoethyl Ether, Technical
A-A-59107	Toluene, Technical
A-A-714	Linseed Oil, Alkali Refined
TT-N-97	Naphtha, Aromatic

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

Method 2012	Preparation of Tin Panels
Method 3011	Condition in Container
Method 3021	Skinning (Partially Filled Container)
Method 4021	Pigment Content (Ordinary Centrifuge)
Method 4053	Nonvolatile Vehicle Content
Method 4061	Drying Time
Method 4203	Reducibility and Dilution Stability

**TABLE 1
COMPOSITION OF THE MIXED PAINT**

INGREDIENTS	REQUIRED		TYPICAL COMPOSITION		INGREDIENT STANDARDS	
	Min. Wt. %	Max. Wt. %	Wt.%	Vol.%	ASTM	Federal
PIGMENT: (75 ± 1 wt. %)						
Zinc Dust	79	—	60.0	21.4	D 520	—
Zinc Oxide	—	21	15.0	6.8	D 79	—
VEHICLE: (25 ± 1 wt. %)						
Phenolic Varnish	82.9	—	20.7	58.0	—	—
Mineral Spirit Thinner	—	16.5	4.1	13.4	D 235	—
Driers	—	0.6	0.2	0.4	D 600, Class B	—
TOTALS			100.0	100.0		

