

SSPC: The Society for Protective Coatings

PAINT SPECIFICATION NO. 27

Basic Zinc Chromate-Vinyl Butyral Wash Primer¹

1. Scope

1.1 This specification covers a two-component basic zinc chromate-vinyl butyral wash primer for structural steel surfaces prior to painting.

1.2 It is intended that this coating be used primarily on clean steel free of rust and scale or on clean galvanized metal cleaned according to SSPC-SP 1, "Solvent Cleaning"; but it may be used, when specified, on steel with very slight amounts of rust. It is to be applied by brush or spray in accordance with SSPC-PA 1, "Shop, Field, and Maintenance Painting of Steel."

2. Description

2.1 Basic zinc chromate-vinyl butyral wash primer is a pretreatment for metals which reacts with the metal and at the same time forms a protective vinyl film which contains an inhibitive pigment to help prevent rusting. This coating is supplied as two components which are mixed together just prior to use. The base contains an alcohol solution of polyvinyl butyral resin pigmented with basic zinc chromate. The diluent contains an alcohol solution of phosphoric acid which reacts with the vinyl resin, the pigment, and the steel. Details of the composition are given in Federal Specification DoD-P-15328.

2.2 This primer contains approximately 10% by volume of nonvolatile film-forming solids (pigment and binder). The theoretical spreading rate for a 0.5 mil (13 micrometers) dry film thickness is 320 square feet/U.S. gallon (7.9 square meters/liter). Actual spreading rates can be significantly lower.

3. Referenced 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:

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
SP 1	Solvent Cleaning

3.5 ASTM INTERNATIONAL STANDARD:

D 3925	Practice for Sampling Liquid Paints and Related Pigmented Coatings
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3.6 FEDERAL STANDARD:

DoD-P-15328	Primer (Wash), Pretreatment (Formula No. 117 for Metals)
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3.7 AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) STANDARD.

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

4.1 Ingredients, proportions, and analysis shall be as specified in Federal Specification DoD-P-15328.

5. Properties

5.1 The paint shall meet the requirements of Federal Specification DoD-P-15328.

6. Labeling

6.1 Labeling shall conform to ANSI Z129.1.

6.2 Technical data shall be provided for at least all data elements categorized as "essential" in SSPC-Guide 13.

6.3 MARKING OF CONTAINERS: Each container of each component shall be legibly marked with the following information:

¹ This paint contains chromate pigments. Users are urged to follow all health, safety, and environmental requirements in applying, handling, and disposing of these materials.

Name: Basic Zinc Chromate-Vinyl Butyral Wash Primer
Specification: SSPC-Paint 27
Component:
Lot Number:
Stock Number:
Date of Manufacture:
Quantity of Paint in Container:
Information and Warnings as may be required by
Federal and State Laws:
Manufacturer's Name and Address:

6.3 DIRECTIONS FOR USE: The following directions use shall be supplied with each container of paint:

Directions for Use of Basic Zinc Chromate-Vinyl Butyral Wash Primer

This paint is intended to be used primarily on clean steel free of rust and scale or on clean galvanized metal; but it may be used, when specified, on steel with very slight amounts of rust bloom.

Four volumes of base shall be mixed with one volume of diluent as follows: first, break up the pigment settled in the base with a wooden paddle, mechanical stirrer, or mixer, and mix to distribute the pigment evenly throughout the base. After the base is thoroughly mixed, slowly pour one volume of the diluent into four volumes of the base with constant agitation. Do not pour off the liquid which has separated from the pigment and then add the diluent to the settled pigment to aid mixing. Material which is not mixed properly may gel and be unfit for use. The base shall be mixed with the diluent in quantities which will be applied within six to eight hours after mixing. Primer that cannot be used within a maximum of eight hours after mixing with diluent shall be discarded and not used. Screen paint before applying.

Apply the wash primer by spraying or brushing. Spraying is generally the preferred method, but brushing may be desirable over rough or poorly prepared steel. Roller coating may be used only if specified. Paint brushes should be clean and dry, or wetted with alcoholic solvents. When sprayed, the primer must be deposited on the surface wet; if dusting is encountered, move the gun closer to the surface; if already within six inches (15 cm) of the surface, decrease atomizing air pressure or increase the liquid pressure, or add thinner.

Where thinning is desired isopropanol (99% grade) or butanol (normal butyl alcohol) or denatured ethanol should be used. At least 25% thinning is usually necessary to get a uniform application. Use denatured ethyl or isopropyl alcohol to clean equipment.

Apply to a dried film thickness of 0.3 to 0.5 mils (8 to 13 micrometers) dry or approximately 3 to 5 mils (75 to 125 micrometers) wet. Note that at this thickness, which should not be exceeded, the base metal will show through the coating as evidenced by uneven coloring. This is the normal appearance; do not attempt to hide the base metal completely.

When spot treating, cover only spots free of old paint. Slight overlap of existing paints is generally not harmful provided adherence of the wash primer to the old paint is satisfactory and the old paint is not lifted.

The next coat of paint may be applied as soon as the wash primer is dry, usually from one half hour to four hours later, except when otherwise authorized by the inspector.

This wash primer should be applied over clean, dry steel; however, a slightly damp surface may be painted over, provided adequate normal butyl alcohol is used in the thinner. If the surface is excessively wet, the vinyl butyral resin will be thrown out of solution and form a gel, or the dried film will turn white, become brittle, and lack adhesion to the steel.

This wash primer is not intended for use as a shop coat for steel, and it should be recoated with the prime coat of paint before exposure, preferably within 24 hours.

7. Inspection

7.1 All materials (coatings) supplied under this specification are subject to timely inspection by the purchaser or his authorized representative. The purchaser shall have the right to reject any materials supplied which are found to be 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 or settlement procedure is established, then a procedure mutually agreeable to the purchaser and material supplier shall be used.

7.2 Samples of paints 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 ensuring compliance with all governmental regulations.