
Standard Specification for Inorganic Zinc-Rich Primer

AASHTO Designation: M 300-22

Technically Revised: 2022

Technical Subcommittee: 4c, Markings and Coatings



**American Association of State Highway and Transportation Officials
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1. SCOPE

- 1.1. This specification covers self-curing, inorganic zinc-rich primers for use on steel surfaces.
- 1.2. *Intended Use of the Primers:*
- 1.2.1. Types I and II are intended for use on bridges, similar structural steel, and other ferrous metal surfaces subject to corrosive atmospheric environments such as marine, industrial, and high humidity.
- 1.3. The values stated in SI units are to be regarded as the standard.
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2. REFERENCED DOCUMENTS

- 2.1. Reference to standard specifications, testing procedures, and other standard procedures contained in this document shall be the latest edition of the published document at the date of this specification.
- 2.1.1. *AASHTO Standards:*
- *Standard Specifications for Highway Bridges*
 - M 339M/M 339, Thermometers Used in the Testing of Construction Materials
- 2.1.2. *ASTM Standards:*
- A36/A36M, Standard Specification for Carbon Structural Steel
 - B117, Standard Practice for Operating Salt Spray (Fog) Apparatus
 - D185, Standard Test Methods for Coarse Particles in Pigments
 - D512, Standard Test Methods for Chloride Ion In Water
 - D520, Standard Specification for Zinc Dust Pigment
 - D521, Standard Test Methods for Chemical Analysis of Zinc Dust (Metallic Zinc Powder)
 - D562, Standard Test Method for Consistency of Paints Measuring Krebs Unit (KU) Viscosity Using a Stormer-Type Viscometer
 - D610, Standard Practice for Evaluating Degree of Rusting on Painted Steel Surfaces
 - D1475, Standard Test Method For Density of Liquid Coatings, Inks, and Related Products
 - D1640, Standard Test Methods for Drying, Curing, or Film Formation of Organic Coatings
 - D1654, Standard Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments
 - D1735, Standard Practice for Testing Water Resistance of Coatings Using Water Fog Apparatus

- < D2247, Standard Practice for Testing Water Resistance of Coatings in 100% Relative Humidity
- < D2369, Standard Test Method for Volatile Content of Coatings
- < D2371, Standard Test Method for Pigment Content of Solvent-Reducible Paints
- < D3363, Standard Test Method for Film Hardness by Pencil Test
- < D4417, Standard Test Methods for Field Measurement of Surface Profile of Blast Cleaned Steel
- < D4541, Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers
- < D4752, Standard Practice for Measuring MEK Resistance of Ethyl Silicate (Inorganic) Zinc-Rich Primers by Solvent Rub
- < D4940, Standard Test Method for Conductimetric Analysis of Water Soluble Ionic Contamination of Blast Cleaning Abrasives
- < D5894, Standard Practice for Cyclic Salt Fog/UV Exposure of Painted Metal, (Alternating Exposures in a Fog/Dry Cabinet and a UV/Condensation Cabinet)
- < D6580, Standard Test Method for the Determination of Metallic Zinc Content in Both Zinc Dust Pigment and in Cured Films of Zinc-Rich Coatings
- < E1, Standard Specification for ASTM Liquid-in-Glass Thermometers
- < E230/E230M, Standard Specification for Temperature-Electromotive Force (emf) Tables for Standardized Thermocouples
- < E2877, Standard Guide for Digital Contact Thermometers

2.1.3. *Federal Standards:*

- < Fed. Std. No. 141, Paint, Varnish, Lacquer, and Related Materials: Methods of Inspection, Sampling and Testing
- < Fed. Std. No. 29, CFR 1910.1200 OSHA Hazard Communication Standard
- < Fed. Std. No. 40, CFR, Part 59, Subpart D, Section 59.400 Through 59.413 National Volatile Organic Compound Emission Standards for Architectural Coatings

2.1.4. *ANSI Standard:*

- < American National Standards Institute (ANSI) B94.50, Style E (withdrawn by ASME 2009)

2.1.5. *The Society for Protective Coatings (SSPC) Standards:*¹

- < AB 3, Abrasive Specification Number 3, Newly Manufactured or Re-Manufactured Steel Abrasive
- < SP 5, White Metal Blast Cleaning

2.1.6. *Other Document:*

- < Commercial Item Description (CID) A-A-1689B; Tape, Pressure-Sensitive Adhesive, Plastic Film²

2.1.7. *International Electrotechnical Commission Standard:*

- < IEC 60584-1: 2013 Thermocouples - Part 1: EMF Specifications and Tolerances

3. CLASSIFICATION

- 3.1. *Types*—Inorganic zinc-rich primers covered by this specification shall be furnished in the following types, as specified in the invitation for bids, contract, or order.