

**COMMERCIAL ITEM DESCRIPTION**

**COATING SYSTEM: ALUMINUM EPOXY MASTIC FOR  
MINIMALLY PREPARED ATMOSPHERIC STEEL**

The General Services Administration has authorized the use of this commercial item description by all federal agencies.

1. **SCOPE.** This commercial item description covers the requirements for a high build aluminum pigmented epoxy coating system. The product shall be suitable for application at temperatures of 5 °C (40 °F) and above to minimally prepared rusted and/or painted ferrous metal substrates.

2. **CLASSIFICATION.** This commercial item description describes one type of aluminum epoxy mastic.

3. **SALIENT CHARACTERISTICS.** The coating shall comply with the following requirements.

3.1 **General requirements.** The coating system shall be aluminum epoxy mastic.

3.1.1 **Prohibited materials.** The manufacturer shall ensure that no mercury, cadmium, hexavalent chromium compounds, or chlorinated solvents are used in the formulation. If any of these substances is present as an impurity, its concentration shall be less than 1.0 percent by weight, except carcinogens whose concentration shall be less than 0.1 percent by weight. The lead content of the nonvolatile portion of the coating shall not exceed 0.06 percent.

3.1.2 **Condition in container.** The coating shall be free from skins, livering, seeds, and hard settled pigment and shall be readily dispersible to a uniform condition by five minutes of hand stirring. A closed, three-quarter filled container shall not skin within 48 hours when stored at room temperature.

3.1.3 **Application Properties.** The coating shall not run or streak when applied by brush, airless spray, or roller at the manufacturer's recommended thickness. The dried paint film shall have no visible cracks or fractures, after drying for one week, when examined under 30X magnification.

3.2 **Special requirements.** Unless otherwise stated in the test method, all routine and referee testing shall be done at the conditions specified in ASTM D 3924.

3.2.1 **Quantitative requirements.** The mastic shall meet the quantitative requirements listed in table I.

3.2.2 **Accelerated Corrosion Resistance.**

**Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data which may improve this document should be sent to: General Services Administration, Paints and Chemicals Center, Supply and Environmental Management Division (10FTE), 400 15th St. SW, Auburn, WA. 98001-6599.**

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**TABLE I**  
**REQUIREMENTS**

PROPERTY	REQUIREMENT	ASTM TEST METHOD
Prohibited materials		
Lead content, wt. percent of nonvolatile, max	0.06	See note <u>5/</u>
Other prohibited materials, wt. Percent, max	0.1	See note <u>5/</u>
Dry hard time, hours, max.	16	D 523 <u>2/</u>
Pot-Life, viscosity increase by 10 KU, hours, max.	3	D 562 <u>3/</u>
Intercoat adhesion	No intercoat delamination	See note <u>4/</u>
Volatile Organic Compound (VOC) content (less water and exempt solvents), g/L, max.	350	D 3960 <u>1/</u>

1/ The VOC shall be determined on the paint as applied in accordance with the manufacturer's instructions for use.

2/ The time to dry hard shall be determined for the epoxy coating applied at the recommended film thickness.

3/ The initial viscosity of a one quart sample of thoroughly mixed coating shall be measured, and again after three hours.

4/ Two successive coats of the test material shall be spray applied to the designated dry film thickness. The applied paint shall be cured and aged at 21-24 degrees C. (70-75 degrees F) and 50±10% relative humidity for 72 hours between coats and for 7 days after the application of the second coat. A sharp knife shall be used to produce two parallel scribes through the coating approximately one inch long and one-quarter inch apart. A third scribe shall be made perpendicular to and through the parallel scribes. The knife shall be used to determine the intercoat adhesion by attempting to delaminate the second coat from the first along the perpendicular scribe.

5/ For referee purposes only. Lead content shall be measured using X-Ray fluorescence, cadmium content by ASTM D 3335, chromium content by ASTM D 3718, and mercury content by ASTM D 3624. Organic solvents shall be identified using FED-STD-141 methods 7356 and 7375.

**3.2.2.1 Requirements.** None of the six test panels prepared shall blister adjacent to the scribe earlier than the inspection at 2688 hours. No more than 1 and 4 test panels shall blister adjacent to the scribe at 2688 and 3360 hours respectively. For all six test panels, the average numerical blister rating for the area adjacent to the scribe shall not be less than 6.5. The blister rating shall be the average of the sum of the average numerical ratings for frequency and size. Frequency ratings shall be converted as follows, 10 = none, 8 = few, 6 = medium, 4 = medium dense, 2 = dense, 0 = total. Any blistering not immediately adjacent to the scribe shall be cause for rejection. The average rust rating for the six panels and the minimum rust rating for any one test panel shall not be less than 9.0. The rust undercut rating for any panel shall not be less than 6.0 and the average rust undercut rating for all six panels shall be greater than 6.0. The sum of the average rust, blister, and undercut scores shall not be less than 23.0.

**3.2.2.2 Test method.** The corrosion resistance of the aluminum epoxy mastic system shall be evaluated using the following test procedure.

**3.2.2.3 Preparation of Test Specimens.** Pre-rusted test specimens measuring 76 X 150 X 3.2 mm (3.0 x 6.0 x 0.125 inches) shall be prepared in accordance with SSPC Coatings Test Panel Preparation Specification No. 1, Uncontaminated Rusted Steel.

**3.2.2.4 Application of Paint System.** The first coat of aluminum epoxy mastic shall be spray applied to the recommended dry film thickness and allowed to cure for 18 to 24 hours at  $22 \pm 1$  degrees C. ( $72 \pm 2$  degrees F.) and  $50 \pm 5$  percent relative humidity. The second coat of epoxy shall be spray applied and allowed to dry for a minimum of seven days prior to testing. Prior to exposure, test panels shall be scribed in accordance with ASTM D1654 such that the coating is uniformly removed down to the substrate along the entire length of the scribe.

**3.2.3 Cyclic Test Exposure.** Six test coupons of the aluminum epoxy coating system shall be exposed in accordance with ASTM D 5894 for a total of 4032h.

**3.2.4 Inspection and Evaluation of Test Coupons.** The coatings shall be evaluated for rusting, blistering, and rust undercutting at the scribe in accordance with ASTM D 610, SSPC-Vis. 2, ASTM D 714, and ASTM D1654. A transparent grid overlay shall be used to enhance the results of the visual examination. Panels shall be evaluated after 332, 672, 1344, 2016, 2688, 3360, and 4032 hours of exposure, except that undercutting at the scribe shall only be determined after 4032 hours.

**3.3 MSDS.** The manufacturer shall comply with requirements set forth by the Hazardous Communication Standard 29 CFR 1910.1200 (d) through (g). All Material Safety Data Sheets (MSDSs) submitted shall comply with provisions of FED-STD-313.

#### **4. REGULATORY REQUIREMENTS.**

**4.1 Federal Acquisition Regulations (FAR).** The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the FAR.

#### **5. QUALITY ASSURANCE PROVISIONS.**

**5.1 Contractor quality assurance.** The contractor shall maintain substantiating evidence that the product offered meets the salient characteristics of this Commercial Item Description and that the product conforms to the producer's own drawing, specifications, standards, and quality assurance practices, and is the same product offered for sale in the commercial marketplace.

The contractor shall provide the required information in a tabulated format and with enough clarity so that the formulation of the tested product can be traced compared to the offered product(s). The contractor shall also provide a summary of performance data, consisting of test reports, substantiating that the product to be supplied under this CID meets the ASTM documents cited under 3.3 and 3.4 and is the same product offered for sale in the commercial marketplace.

The government reserves the right to require proof of such conformance prior to first delivery and thereafter as may be otherwise provided for under the provisions of the contract.

#### **6. PACKAGING.**

Preservation, Packing, and marking shall be as specified in the contract or order.

**7. NOTES.**

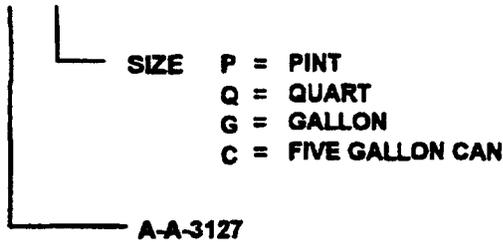
**7.1 Intended Use.** This coating system is primarily for use on hand or power tool cleaned exterior steel substrates in normal or industrial atmospheres. It may also be used for interior areas, which are dry or subject to high humidity and condensation. In some cases this system may be used to overcoat existing coating systems as a means of extending their service life. An assessment of the current coating condition and the application of a test patch of the proposed overcoat material must be conducted prior to the scheduling of the painting contract. Higher grades of surface preparation, such as commercial blast cleaning, may be selected at the discretion of the specifier. Commercial blast cleaning may be appropriate for complete removal of a heavily deteriorated coating system. Grades of surface preparation higher than SP-6 will not significantly improve the performance of the coating system and do not warrant the added expense.

**7.2 Ordering Data.** Purchasers should include the following information in the contract or purchase order.

- (a) Title, number, and date of this commercial item description
- (b) Quantity and size of the container required
- (c) Address to whom MSDSs should be sent
- (d) Packaging, packing, and marking required

**7.3 Part Identification Number (PIN).** The following part identification numbering procedure is for government purposes and does not constitute a requirement for the contractor.

**AA3127-P**



**7.4 Referenced documents.**

**Federal Standards:**

- FED-STD-141** - Paint, Varnish, Lacquer and Related Materials: Methods of Inspection, Sampling and Testing.
- FED-STD-313** - Material Safety Data, Transportation Data and Disposal Data for Hazardous Materials Furnished to Government Activities.

**ASTM Standards:**

- D 523 - Specular Gloss.
- D 562 - Consistency of Paints Using the Stormer Viscometer.
- D 1654 - Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments.
- D 3335 - Low Concentrations of Lead, Cadmium, and Cobalt in Paint by Atomic Absorption Spectroscopy.
- D 3624 - Low Concentrations of Mercury in Paint by Atomic Absorption Spectroscopy.
- D 3717 - Low Concentrations of Antimony in Paint by Atomic Absorption Spectroscopy.
- D 3718 - Low Concentrations of Chromium in Paint by Atomic Absorption Spectroscopy
- D 3924 - Standard Environment for Conditioning and Testing Paint, Varnish, Lacquers, and Related Materials.
- D 3960 - Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings.
- D 5894 - Cyclic Salt Fog/UV Exposure of Painted Metal, (Alternating Exposures in a Fog/Dry Cabinet and a UV/ Condensation Cabinet).

**SSPC Standards:**

Coatings Test Panel Preparation Specification No. 1

**7.5 Source of Documents.**

7.5.1 Contact the contracting officer for a copy of paragraph 23.403 of the FAR, and the appropriate paragraphs in 29 and 40 CFR.

7.5.2 Copies of ASTM specifications and standards may be obtained from the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

7.5.3 Copies of SSPC specifications and standards may be obtained from the Steel Structures Painting Council, 4400 Fifth Avenue, Pittsburgh, PA 15213.

7.5.4 Copies of Federal specifications and standards may be obtained from the Federal Supply Service Bureau, Specification Section, Suite 8100, 470 East L'Enfant Plaza, SW, Washington, DC 20407.

**MILITARY INTERESTS:**

**Custodian**

- Army - CE
- Air Force - 99

**Review Activities**

- Army - CE
- Air Force - 84

**User Activities**

- Army - CE

**CIVIL AGENCY  
COORDINATING ACTIVITY:**

**Preparing Activity:**

GSA-FSS