

NOT MEASUREMENT SENSITIVE
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MIL-PRF-22750G  
12 September 2011  
SUPERSEDING  
MIL-PRF-22750F  
31 May 1994

## PERFORMANCE SPECIFICATION

### COATING, EPOXY, HIGH-SOLIDS

This specification is approved for use by all Departments and Agencies of the Department of Defense.

#### 1. SCOPE

1.1 Scope. This specification covers the requirements for a two component, high solids epoxy coating. This coating is free of all inorganic hazardous air pollutants (HAPS), including compounds of lead and chromium. The coating is supplied as a kit.

1.2 Classification. The coatings are of the following types, classes and grades, as specified (see 6.2)

1.2.1 Types. The coating will be furnished in the following types as specified. Whenever one of the following coating types is not cited in a relevant contractual document or drawing, select type I or II for Navy use and type II or III for Army use.

- Type I - Standard formulation with a maximum volatile organic compound (VOC) content of 340 grams/liter (g/l) (2.8 pounds/gallon (lbs/gal)) as packaged.
- Type II - Volatile organic hazardous air pollutants-free (VOHAP-free) formulation to meet maximum VOC content of 340 g/l (2.8 lbs/gal) as packaged.
- Type III - Direct to metal, VOHAP-free formulation to meet maximum VOC content of 340 g/l (2.8 lbs/gal) as packaged. As a direct to metal, this coating will have enhanced corrosion performance including 1,000 hours salt spray and 40 cycles on the cyclic corrosion test. This type is only available in semi-gloss and lusterless colors.
- Type IV - Self contained portable kits to include, but not limited to, brush, roller and cartridge application. The kits contain the type II or III epoxy coating.

<p>Comments, suggestions, or questions on this document should be addressed to: Director, U.S. Army Research Laboratory, Weapons and Materials Research Directorate, Materials Manufacturing Technology Branch, Specifications and Standards Office, ATTN: RDRL-WMM-D, Aberdeen Proving Ground, MD 21005-5069 or emailed to <a href="mailto:richard.j.squillacioti.civ@mail.mil">richard.j.squillacioti.civ@mail.mil</a>. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at <a href="https://assist.daps.dla.mil/">https://assist.daps.dla.mil/</a>.</p>
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1.2.2 Classes. The classes of the coating are as follows:

- Class H - High solids, solvent base formulation.
- Class W - Water base formulation.

1.2.3 Grades. The grades of the coating are as follows:

- Grade A - For Navy and Army equipment requiring weather resistance. Grade A approved products can also be used as a grade B material.
- Grade B - For the interior of tactical equipment not requiring weather resistance.

1.3 Colors. The color of the coating is available in a wide variety of colors in the gloss ranges of high gloss, semi-gloss and lusterless. This specification does not limit the suppliable colors, nor does it list all available colors. The coating colors are designated by FED-STD-595. The FED-STD-595 color number forms part of the part number designation (see 1.4).

1.4 Part or Identifying Number (PIN). Use the following example to create the PINs to be used for coatings acquired to this specification.

<u>M22750</u>	-	<u>X</u>	-	<u>X</u>	-	<u>X</u>	-	<u>XXXX</u>	-	<u>XXXXXX</u>
Specification Identifier		Coating type designator		Class designator		Grade designator		Container size designator		Color designator FED-STD-595 color chip number
		Type I = 1		(H or W)		(A or B)		1 pint = 001P		
		Type II = 2						1 quart = 001Q		
		Type III = 3						1 gallon = 001G		
		Type IV = 4						1 aerosol = 001A		
								1 cartridge = 001C		
								1 touch-up kit = 001T		

## 2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3, 4, or 5 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of documents cited in sections 3, 4, or 5 of this specification, whether or not they are listed.

### 2.2 Government documents.

2.2.1 Specifications, standards, and handbooks. The following specifications, standards and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

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## FEDERAL SPECIFICATIONS

- TT-C-490 - Chemical Conversion Coatings And Pretreatments for Ferrous Surfaces (Base for Organic Coatings).
- TT-R-2918 - Remover, Paint, No Hazardous Air Pollutants (HAPS).

## FEDERAL STANDARDS

- FED-STD-313 - Material Safety Data, Transportation Data, and Disposal Data for Hazardous Materials Furnished to Government Activities.
- FED-STD-595/13538 - Yellow, Gloss.
- FED-STD-595/17925 - Miscellaneous, Gloss.
- FED-STD-595/24533 - Green, Semi-gloss.
- FED-STD-595/34095 - Green, Flat or Lusterless.
- FED-STD-595/36375 - Gray, Flat or Lusterless.

## DEPARTMENT OF DEFENSE SPECIFICATIONS

- MIL-DTL-5541 - Chemical Conversion Coatings on Aluminum and Aluminum Alloys.
- MIL-A-8625 - Anodic Coatings for Aluminum and Aluminum Alloys.
- MIL-DTL-12468 - Decontaminating Agent, STB.
- MIL-PRF-23377 - Primer Coatings: Epoxy, High-Solids.
- MIL-PRF -23699 - Lubricating Oil, Aircraft Turbine Engine, Synthetic Base, NATO Code Number O-156.
- MIL-DTL-53022 - Primer, Epoxy Coating, Corrosion Inhibiting Lead and Chromate Free.
- MIL-DTL-53030 - Primer Coating, Epoxy, Water Based, Lead and Chromate Free.
- MIL-R-81294 - Remover, Paint, Epoxy, Polysulfide, And Polyurethane Systems.
- MIL-T-81772 - Thinner, Aircraft Coating.
- MIL-PRF-83282 - Hydraulic Fluid, Fire Resistant, Synthetic Hydrocarbon Base, Metric, NATO Code Number H-537.
- MIL-PRF-85582 - Primer Coatings: Epoxy, Waterborne.
- MIL-PRF-87257 - Hydraulic Fluid, Fire Resistant; Low Temperature, Synthetic Hydrocarbon Base, Aircraft and Missile.

(Copies of these documents are available online at <https://assist.daps.dla.mil/quicksearch> or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.2.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (EPA)

- EPA Method 311 - HAPS in Paints & Coatings.

(Copies of this document are available online at <http://www.epa.gov/ttn/emc/> or from the

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Environmental Protection Agency, Ariel Rios Building, 1200 Pennsylvania Avenue, N.W., Washington, DC 20460.)

**2.3 Non-Government publications.** The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

## ASTM INTERNATIONAL

- |                       |   |   |
|-----------------------|---|---|
| ASTM A109/<br>A109M   | - | Standard Specification for Steel, Strip, Carbon (0.25 Maximum Percent), Cold-Rolled. (DoD adopted)  |
| ASTM A1008/<br>A1008M | - | Standard Specification for Steel, Sheet, Cold Rolled, Carbon, Structural, High Strength Low Alloy, High Strength Low Alloy with Improved Formability, Solution Hardened, and Bake Hardenable. (DoD adopted) |
| ASTM B117             | - | Standard Practice for Operating Salt Spray (Fog) Apparatus. (DoD adopted)   |
| ASTM D185             | - | Standard Test Methods for Coarse Particles in Pigments. (DoD adopted)   |
| ASTM D522             | - | Standard Test Methods for Mandrel Bend Test of Attached Organic Coatings. (DoD adopted)   |
| ASTM D523             | - | Standard Test Method for Specular Gloss. (DoD adopted)  |
| ASTM D610             | - | Standard Practice for Evaluating Degree of Rusting on Painted Steel Surfaces. (DoD adopted)   |
| ASTM D1200            | - | Standard Test Method for Viscosity by Ford Viscosity Cup. (DoD adopted)   |
| ASTM D1210            | - | Standard Test Method for Fineness of Dispersion of Pigment Vehicle Systems by Hegman Type Gage. (DoD adopted)   |
| ASTM D1654            | - | Standard Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments. (DoD adopted)   |
| ASTM D1729            | - | Standard Practice for Visual Appraisal of Colors and Color Differences of Diffusely Illuminated Opaque Materials. (DoD Adopted)   |
| ASTM D1849            | - | Standard Test Method for Package Stability of Paint. (DoD adopted)  |
| ASTM D2371            | - | Standard Test Method for Pigment Content of Solvent Reducible Paints. (DoD adopted)   |
| ASTM D2805            | - | Standard Test Method for Hiding Power of Paints by Reflectometry. (DoD adopted)   |
| ASTM D3271            | - | Standard Practice for Direct Injection of Solvent Reducible Paints Into a Gas Chromatograph for Solvent Analysis. (DoD adopted)   |
| ASTM D3335            | - | Standard Test Method for Low Concentrations of Lead, Cadmium, and Cobalt in Paint by Atomic Absorption Spectroscopy. (DoD adopted)  |
| ASTM D3359            | - | Standard Test Methods for Measuring Adhesion by Tape Test.  |
| ASTM D3363            | - | Standard Test Method for Film Hardness by Pencil Test. (DoD adopted)  |

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ASTM D3924	- Standard Specification for Standard Environment for Conditioning and Testing Paint, Varnish, Lacquer, and Related Materials. (DoD adopted)
ASTM D3960	- Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings. (DoD adopted)
ASTM D5895	- Standard Test Methods for Evaluating Drying or Curing During Film Formation of Organic Coatings Using Mechanical Recorders.
ASTM E308	- Standard Practice for Computing the Colors of Objects by Using the CIE System. (DoD adopted)
ASTM E1331	- Standard Test Method for Reflectance Factor and Color by Spectrophotometry Using Hemispherical Geometry.
ASTM G155	- Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non Metallic Materials. (DoD adopted)

Copies of these documents are available from [www.astm.org](http://www.astm.org) or ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959.)

### GENERAL MOTORS ENGINEERING STANDARDS

GMW 14872 - Cyclic Corrosion Laboratory Test.

(Copies of this document are available from [www.ihs.com](http://www.ihs.com) or General Motors International, General Motors Technical Center, Warren, MI 48092.)

2.4 Order of precedence. Unless otherwise noted herein or in the contract, in the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

## 3. REQUIREMENTS

3.1 Qualification. The coating furnished under this specification shall be a product which is qualified for listing on the applicable Qualified Products Database (QPD) before contract award (see 4.2 and 6.4). Any change in the formulation of a qualified product shall necessitate its requalification. The material supplied under contract shall be identical, within manufacturing tolerances, to the product receiving qualification.

3.2 Material. Materials used in the coating shall be specified herein. Materials not specified shall be selected by the contractor and shall be subject to all provisions of this specification.

3.3 Composition. The coating shall consist of two components, as follows:

Component A - epoxy resin and solvents

Component B - polyamide and/or amine resin(s) and solvents

Component B shall act as the curing agent for component A. The components shall be packaged

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separately and furnished as a kit. Pigments may be included with either component. When the components are mixed and reduced as specified by the manufacture, a product meeting the applicable requirements of this specification shall result. For class W coating, water may replace all or part of the solvent in component A and/or B.

3.3.1 Pigments. When tested in accordance with 4.6, no component of the coating shall contain lead, cadmium and hexavalent chromium. Compounds of antimony, arsenic, beryllium, cadmium, chromium, cobalt, cyanide, lead, manganese, mercury, nickel and selenium shall also be absent. Pigments contained in these coatings shall be HAPS-free.

3.3.2 Volatile content. The volatile content of the mixed coating shall conform to the following requirements of the volume when tested as specified in 4.7.2.

3.3.2.1 For Type I. The VOC content shall not exceed 340 g/l (2.8 lbs/gal) as packaged (see 4.6 and table II)

3.3.2.2 For Types II and III. The VOC content shall not exceed 340 g/l (2.8 lbs/gal) as packaged (see 4.6 and table II). The coatings shall be volatile organic hazardous air pollutants-free (VOHAP-free) when tested in accordance with 4.7.3.

3.3.2.3 Thinner compatibility. The admixed coating shall be compatible with thinner conforming to MIL-T-81772, type II. The resistivity of the solvents shall be suitable for electrostatic spray application.

### 3.4 Quantitative requirements.

3.4.1 Mixed coating. The mixed coating shall conform to the quantitative requirements of table I when tested as in section 4.

### 3.5 Qualitative requirements.

#### 3.5.1 Condition in container.

3.5.1.1 Component A. When tested as specified in 4.7.9.1, component A shall be free from grit, seeds, skins, abnormal thickening or livering in a freshly opened container and shall show no more pigment settling or caking than can be easily and completely reincorporated to a smooth homogeneous state.

3.5.1.2 Component B. When tested as specified in 4.7.9.2, component B shall be clear and free from sediment and suspended matter when examined by transmitted light. It shall show no livering, curdling, gelling or skinning in a freshly opened full container.

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TABLE I. Mixed coating requirements.

Characteristic	Minimum	Maximum
Fineness of Grind		
Gloss colors	7	-
Semi-gloss colors	6	-
Camouflage colors	5	-
Specular gloss, 60 degree		
Gloss colors	90	-
Semi-gloss colors	15	30
Camouflage colors	-	5
Hiding power (contrast ratio)		
Color number 13538	90	-
All other colors	95	-
Infrared reflectance (color number 34095 only), wavelength (nanometers), percent		
450-500	-	8
500-600	-	10
600-2700	-	8
Drying time		
Set to touch, hours	-	4
Dry hard, hours	-	8
Viscosity, after thinning to a maximum VOC of 340 g/l (2.8 lbs/gal), if necessary, #4 Ford cup	-	50
Coarse particles, percent by weight	-	0.50
Lead metal, % by wt. of total solids	-	0.06
VOHAP compounds, types II and III	Absent	
Inorganic HAP compounds	Absent	
Pigment elements lead, cadmium, hexavalent chromium and compounds of antimony, arsenic, beryllium, cadmium, chromium, cobalt, cyanide, lead, manganese, mercury, nickel, and selenium	Absent	

3.5.2 Storage stability.

3.5.2.1 Component A. A full quart can of component A shall show no skinning, livering, curdling, hard dry caking or tough gummy sediment when tested as specified in 4.7.10.1. It shall remix readily to a smooth homogeneous state and meet all other requirements of the specification.

3.5.2.2 Component B. When tested as specified in 4.7.10.2, a full 8 ounce can of component B shall be clear and free from sediment and suspended matter when examined by transmitted light and shall be identical in appearance to the original sample. It shall show no livering, curdling, gelling, or skinning in a freshly opened container and shall meet all other requirements of the specification.



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3.5.3 Accelerated storage stability. After being tested as specified in 4.7.11, the coating shall meet all of the requirements of this specification. Each component shall be free of the defects listed in 3.5.2.1 and 3.5.2.2, and when prepared as specified in 4.7.13, the admixed coating shall be a smooth homogeneous mixture free from grit, seeds, lumps, and skins.

3.5.4 Freeze-thaw stability (class W only). After being tested in 4.7.12, the coating shall meet all of the requirements of the specification. Each component shall be free of defects listed in 3.5.2.1 and 3.5.2.2 and when prepared as specified in 4.7.13, the admixed coating shall be a smooth homogeneous mixture free from grit, seeds, lumps and skins.

3.5.5 Mixing properties and pot life. When tested as specified in 4.7.13, smooth homogeneous mixture shall result. The mixed coating shall be free from grit, seeds, skins, or lumps. After 4 hours in the closed container, the viscosity of the admixed and thinned coating, if required, shall not exceed 70 seconds, as specified in 4.7.13. After 8 hours aging, as specified in 4.7.13, the coating shall show no signs of gelation.

3.5.6 Spraying properties. When tested as specified in 4.7.14, the coating shall spray satisfactorily in all respects and shall show no running, sagging, or streaking. The dried film shall show no dusting, mottling, or color separation and shall present a smooth finish free from seeds.

3.5.7 Color. The admixed coating, when tested as specified in 4.7.15, using CIELAB color coordinates, shall have a color difference Delta ( $\Delta$ )E value of less than 1 when compared to the specified color chip in FED-STD-595.

3.5.8 Adhesion. The assessment of the adhesion of the coating film shall be determined by its ability to not peel from the substrate when tested as specified in 4.7.16. The resultant test rating shall be classified as scale 4A or better.

3.5.9 Flexibility. A film of coating, tested as specified in 4.7.17, shall withstand bending without cracking, flaking or loss of adhesion.

3.5.10 Water resistance. When tested as specified in 4.7.18, a film of the coating shall show no blistering or wrinkling and no more than a slight whitening or softening immediately upon removal from the water. Film softening shall not exceed a 2 pencil hardness difference (see ASTM D3363) from an unexposed film with identical cure history prior to water exposure. After 2 hours air drying, the portion of the panel that was immersed, shall be almost indistinguishable with regard to adhesion, hardness, color and gloss from an unexposed film with identical cure history prior to water exposure.

3.5.11 Hydrocarbon fluid resistance. When tested as in 4.7.19, a film of the coating shall show no blistering or wrinkling when examined immediately after removal from the hydrocarbon test fluid. When examined 2 hours after removal, there shall be no excessive softening, whitening or dulling. Film softening shall not exceed a 2 pencil hardness difference (see ASTM D3363) from an unexposed film with identical cure history prior to the hydrocarbon exposure. After 24 hours dry,



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the portion of the panel which was immersed shall be almost indistinguishable with regard to hardness, adhesion and general appearance from a panel prepared at the same time, but not immersed and shall have no more than a 1.0 gloss unit increase over the original 60 degree gloss value.

3.5.12 Fluid resistance. A film of the coating tested as specified in 4.7.20 shall show no blistering, wrinkling or loss of adhesion immediately after removal. Slight initial softening is acceptable. After a four (4) hour recovery period, the hardness of the coating shall be fully recovered. Discoloration of the coating is acceptable and shall not be a cause for rejection.

3.5.13 Heat resistance (color change). A film of the coating shall have a color difference Delta ( $\Delta$ )E value less than or equal to 2.0 when compared to an unexposed sample of the same batch and tested as specified in 4.7.21 using CIELAB color coordinates.

3.5.14 Solvent resistance (cure). The coating shall withstand 25 double rubs with a cotton terrycloth rag soaked with methyl ethyl ketone (MEK) solvent, when tested as specified in 4.7.22. Rubbing through to bare metal indicates failure of the coating due to improper cure.

3.5.15 Tape resistance. The coating shall not exhibit permanent marring caused by masking tape applied to the coated test panels, when tested as specified in 4.7.23.

3.5.16 Corrosion resistance (type III only).

3.5.16.1 Salt spray resistance. A film of coating, tested as specified in 4.7.24.1 and examined immediately after removal from the salt spray test, shall show no more than a trace of rusting (ASTM D610, table I, rust grade 9) or corrosion, and no more than five scattered blisters, none larger than one (1) mm in diameter for unscribed regions. Scribed areas shall have ratings as specified in ASTM D1654 method A of not less than six (6) for steel or eight (8) for aluminum panels. Upon removal of the coating, there shall be no more than a trace of rusting, pitting, or corrosion on the panels.

3.5.16.2 Cyclic corrosion test. A film of coating, tested as specified in 4.7.24.2 and evaluated using ASTM D1654 method A, shall have a rating of not less than seven (7). There shall be no more than five (5) scattered blisters in the unscribed areas.

3.5.17 Super tropical bleach (STB) resistance. When tested as in 4.7.25, a film of the coating shall show no blistering, wrinkling or film softening when examined immediately after washing with water. Film softening shall not exceed a number 2 pencil hardness difference (see ASTM D3363) from an unexposed film. After drying, there shall be a maximum Delta ( $\Delta$ )E color change of 2.5 L\*, a\*, b\* units when comparing a portion of the untested panel to that of the tested area. The STB composition shall be in accordance with MIL-DTL-12468.

3.5.18 Accelerated weathering. When tested as specified in 4.7.26, the coating shall show no cracking or loss of adhesion. The coating color difference Delta ( $\Delta$ )E shall have a value of less than

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3.0 when compared to an unexposed sample of the same batch using the CIELAB color coordinates.

3.5.19 Strippability. The coating shall be tested in accordance with methods A and B of 4.7.27, and a minimum of 90 percent of the coating shall be stripped by one of the methods.

3.5.20 Toxic ingredients. Other than parachlorobenzotrifluoride (PCBTF), the coating shall contain no benzene (benzol), chlorinated solvents or ethylene based glycol ethers and their acetates (see 4.7.28).

3.6 User instruction markings. All primary containers shall be legibly marked or labeled “component A (epoxy resin component)” or “component B (catalyst component)” as applicable, with the manufacturer’s mixing instructions, the VOC content (in grams/liter or pounds/gallon), HAPS content and the following:

PRECAUTION: The Surgeon General requires airline respirators to be used unless air sampling shows exposure to be below standards. Then, either chemical cartridge respirators or airline respirators are required. Avoid contact with skin and eyes. Use with adequate ventilation. For other safety recommendations refer to the Material Safety Data Sheet (MSDS). Keep containers closed.

INSTRUCTION FOR USE: Mix component A well and then add the appropriate volume of component B to component A according to the manufacturer’s instructions and mix well. If thinning is required for spray application, type I coating shall be thinned with MIL-T-81772, type II. For type II and III coating, if thinning is allowed and necessary, follow the manufacturer’s instructions. The solvents used shall be HAPS-free material and stay within the regulatory VOC limits. The admixed coating may require a 30 minute induction time before use. Follow the manufacturer’s recommendations and instructions. During spray application, avoid inhalation and eye or skin contact.

3.7 MSDS. A MSDS shall be prepared for the coating in accordance with FED-STD-313 and forwarded to the qualifying activity (see 6.4.3). The MSDS shall be included with each shipment of the material covered by this specification and submitted to pertinent Government agencies as stated in FED-STD-313.

3.8 Toxicity clearance. All new chemicals and materials being added to the Army supply system shall have a toxicity clearance. A toxicity clearance involves a toxicological evaluation of materials prior to introduction into the Army supply system. The Army program manager shall be responsible for identifying technically feasible materials and requesting a toxicity clearance for use of that material within their program (see 6.7).

#### 4. VERIFICATION

4.1 Classification of inspections. The inspection requirements specified herein are classified as follows:

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- a. Qualification inspection (see 4.2).
- b. Conformance inspection (see 4.3).

4.2 Qualification inspection. Qualification shall be conducted by the qualifying activity (see 6.4). The qualification test sample shall consist of five (5) quart kits of each material. The samples shall be legibly identified (see 6.4.4). Qualification inspection shall consist of tests for all requirements specified in section 3 and table II. Qualification inspection shall examine for user instruction markings (see 3.6). The results of each test shall be compared with the applicable requirements in section 3. Failure to conform to any requirement shall be counted as a defect and paint represented by the sample test shall not be approved for inclusion in the QPD under this specification.

4.3 Conformance inspection. The manufacturer shall forward from each production lot (see 4.3.1) a batch validation letter detailing the batch number, manufacturer's code, specification and type number, QPL number and batch volume to U.S. Army Research Laboratory (ARL), ATTN: RDRL-WMM-C, Organic Coatings Team, Building 4600, Deer Creek Loop, Aberdeen Proving Ground (APG), MD 21005-5066. The manufacturer shall perform conformance inspection testing on each production lot and have these test results on file when requested by the contracting officer. Conformance inspection for individual lots shall test for VOC, condition in container, total solids, fineness of grind, mixing properties, spraying properties, drying time, and 60 degree specular gloss. There shall be no failures (see 6.6).

4.3.1 Lot and batch formation. Unless otherwise specified in the contract or purchase description (see 6.2), a lot shall consist of all coatings of the same type, composition and color, from a single uniform batch, produced and offered for delivery at one time (see 6.4.2). Unless otherwise specified in the contract or purchase description (see 6.2), a batch shall consist of all coating material (in U.S. gallons) manufactured during one continuous operation and forming part of one contract or order for delivery (see 6.4.2). The addition of any substance to a batch shall constitute a new lot.

4.4 Inspection conditions. Unless otherwise specified, all inspections shall be performed in accordance with ASTM D3924. Also, unless otherwise stated in the test method or paragraph, room temperature shall be  $73 \pm 4$  °F ( $23 \pm 2$  °C) and a 40 - 70 percent relative humidity.

4.5 MSDS. The MSDS shall address components A and B and be in compliance with FED-STD-313 (see 3.7). Noncompliance shall be cause for rejection.

4.6 Test methods.

4.6.1 Test conditions. Except as otherwise specified herein, the routine testing and referee testing shall be conducted in accordance with ASTM D3924. A dry film thickness of  $2.0 \pm 0.2$  mils ( $50 \pm 5.0$  microns) shall be used whenever film thickness is requested in any test, unless otherwise required by the test. Failure of any test result to fall within the specified ranges in section 3 shall constitute failure of the applicable test. For all tests requiring the use of the mixed coating, components A and B shall be mixed in the proportions as specified by the manufacturer.

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4.6.2 Test panels. Steel test panels shall be cold-rolled SAE 1010 steel conforming to ASTM A109/A109M or ASTM A1008/A1008M, treated with a zinc phosphate coating in accordance with TT-C-490, type I. The panels shall have a Rockwell B hardness of 55 to 75 and a surface roughness of 30 to 45 micro inches (arithmetic average) as rolled. Aluminum test panels shall be aluminum alloy 2024-T3 treated with MIL-DTL-5541, type II.

4.6.2.1 Epoxy primer. Test panels shall be solvent cleaned prior to applying epoxy primer. Apply epoxy primer conforming to the latest revision of MIL-DTL-53022 or MIL-DTL-53030 to a dry film thickness of  $1.5 \pm 0.2$  mils ( $37.5 \pm 5$  microns). For aviation system application evaluation, MIL-PRF-23377 or MIL-PRF-85582 epoxy primers shall be used and applied to a dry film thickness of 0.6 - 0.9 mils (15 - 22.5 microns). Allow the primer coatings to air dry according to the requirement of the primer in use for these tests prior to the application of the topcoat.

4.6.2.2 Application of coating. The coating under test shall be admixed and allowed to stand for 30 minutes prior to use. The coating shall then be spray applied to the test panels to a dry film thickness of  $2.0 \pm 0.2$  mils ( $50 \pm 5.0$  microns). The test panels shall be air dried for a minimum of 7 days prior to testing. For type III, the coating shall be spray applied directly on steel and aluminum panels pretreated as in 4.6.2 to a dry film thickness of  $2 \pm 0.2$  mils ( $50 \pm 5$  microns). The test panels shall be air dried for a minimum of 7 days prior to testing. Primers, as specified in 4.6.2.1, shall not be used with the type III coating.

4.6.3 Test procedures. Tests (see table II) shall be in accordance with ASTM, GMW, or as specified herein. The right is reserved to make any additional tests deemed necessary to determine that the coating meets the requirements of this specification.

TABLE II. Test methods.

Item	ASTM Method	Test Paragraph	Requirement Paragraph or Table
Pigment analysis	D2371	4.7.1	3.3.1
Lead content	D3335	4.7.1.1	3.3.1 and Table I
Hexavalent chromium	-	4.7.1.2	3.3.1 and Table I
VOC	D3960	4.7.2	3.3.2 and Table I
VOHAP content <sup>1/</sup>	D3271	4.7.3	3.3.2 and Table I
Specular gloss	D523	4.7.4	Table I
Fineness of grind	D1210	-	Table I
Hiding power	D2805	4.7.5	Table I
Infrared reflectance	E308 and E1331	4.7.6	Table I
Drying time	D5895	4.7.7	Table I
Viscosity	D1200	4.7.8	Table I
Coarse particles	D185	-	Table I
Condition in container	-	4.7.9	3.5.1
Storage stability	D1849	4.7.10	3.5.2

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TABLE II. Test methods - Continued.

Item	ASTM Method	Test Paragraph	Requirement Paragraph or Table
Accelerated storage stability	-	4.7.11	3.5.3
Freeze-thaw stability	-	4.7.12	3.5.4
Mixing properties and pot life	-	4.7.13	3.5.5
Spraying properties	-	4.7.14	3.5.6
Color	D1729	4.7.15	3.5.7
Adhesion	D3359	4.7.16	3.5.8
Flexibility	D522	4.7.17	3.5.9
Water resistance	-	4.7.18	3.5.10
Hydrocarbon fluid resistance	-	4.7.19	3.5.11
Fluid resistance	-	4.7.20	3.5.12
Heat resistance	-	4.7.21	3.5.13
Solvent resistance (cure)	-	4.7.22	3.5.14
Tape resistance	-	4.7.23	3.5.15
Salt spray resistance	B117	4.7.24.1	3.5.16.1
Cyclic corrosion resistance <sup>2/</sup>	-	4.7.24.2	3.5.16.2
STB resistance	-	4.7.25	3.5.17
Accelerated weathering	G155	4.7.26	3.5.18
Strippability	-	4.7.27	3.5.19
Toxic ingredients	-	4.7.28	3.5.20

<sup>1/</sup> EPA Method 311.

<sup>2/</sup> General Motors Standard: GMW 14872.

#### 4.7 Analysis of the coating.

4.7.1 Pigment analysis. Extract the pigment as in ASTM D2371, except use ethanol for the extraction. Make appropriate qualitative and quantitative tests on the extracted pigment to determine if only permissible pigments were used. Nonconformance to table I shall constitute failure of this test.

4.7.1.1 Lead content. Determine the presence or absence of lead by weighing 50 mg of pigment into a small glass test tube. Add 5 ml of dilute HNO<sub>3</sub> and shake vigorously for 1-2 minutes. Decant a one ml aliquot into a plastic micro-centrifuge tube and centrifuge for five (5) minutes at 17,000 rpm - balancing the centrifuge with a tube containing one ml. of the dilute HNO<sub>3</sub> solution. This

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tube shall also act as the test “blank”. Immerse a lead test strip into the supernatant from each tube. Shake off the excess liquid and after approximately one minute compare the color change in the reaction zone of the strips to the color scale (concentration levels) provided by the manufacturer. If any color change is apparent from the “blank” strip rerun the test using fresh, lead-free reagents. For the “Sample” strip, the appearance of a bright red color is indicative of lead at a concentration level above the specification limit, while no color change or a faint pink color change is indicative of lead concentrations below the specification limit. Confirmation of the exact lead concentration in the coating’s solids shall be determined using any authoritative quantitative method, such as ASTM D3335.

4.7.1.2 Hexavalent chromium. Determine the presence or absence of hexavalent chromium by either of the following chemical reagent screening techniques.

(a) Weigh approximately 250 mg of pigment into a small glass test tube. Add 5 ml of 25 percent aqueous KOH and shake vigorously for 1 - 2 minutes. Decant a one ml aliquot into a plastic micro-centrifuge tube and centrifuge for five (5) minutes at 17000 rpm, balancing the centrifuge with a tube containing one ml of the KOH solution. The resulting supernatant liquid shall be nearly colorless. Use the tube containing the KOH solution as a reference. A distinct yellow color indicates the presence of hexavalent chromium and therefore shall constitute failure of the test requirement.

(b) Weigh approximately 50 mg of pigment into a small glass test tube. Add 5ml of 10 percent aqueous  $H_2SO_4$  and shake vigorously for 1 - 2 minutes. Decant a one ml aliquot into a plastic micro-centrifuge tube and centrifuge for five (5) minutes at 17,000 rpm, balancing the centrifuge with a second tube containing one ml of the  $H_2SO_4$  solution. The solution in the second tube shall act as the test “blank”. Immerse a chromate ion ( $CrO_4^{2-}$ ) test strip into the supernatant from each tube. Shake off the excess liquid and after approximately one minute compare the color change in the reaction zone of the strips to the color scale (concentration levels) provided by the manufacturer. The appearance of a purple/violet color from the “sample” strip is indicative of hexavalent chrome and therefore shall constitute failure of the test requirement. If a color change is apparent from the “blank” strip rerun the test using fresh, chromium-free reagents. The appearance of a pronounced color change is indicative of hexavalent chrome and therefore shall constitute failure of the test requirement.

4.7.1.3 Antimony, arsenic, beryllium, cadmium, chromium, cobalt, cyanide, manganese, mercury, nickel and selenium. Manufacturers need to review applicable environmental and safety regulations and comply with material shipment requirements (see 6.2). The MSDS needs to include a notarized statement that verifies that the composition of the material (coating formulation) is free of the antimony, arsenic, beryllium, cadmium, chromium, cobalt, cyanide, manganese, mercury, nickel, selenium and their compounds.

4.7.2 Volatile content. The volatile content of the admixture (see 3.3.2) determined by EPA method 311 and the VOC analysis (see 3.3.2.1 and 3.3.2.2) determined in accordance with ASTM

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D3960 shall comply with 3.3.2.1 or 3.3.2.2. Nonconformance to the VOC limit in 3.3.2.1 or 3.3.2.2 shall constitute failure of this test.

4.7.3 Solvent VOHAP determination. Hazardous solvent content of each individual coating shall be determined in accordance with ASTM D3271 or EPA method 311, as applicable. Check for compliance with 3.3.2.2.

4.7.4 Specular gloss (60 degree). Prepare a film of the coating on steel as specified in 4.7.14 and allow to dry 168 hours. Determine the 60 degree specular gloss in accordance with ASTM D523. Nonconformance to table I shall constitute failure of this test.

4.7.5 Hiding power (contrast ratio). Apply the mixed coating to a dry film thickness of  $2 \pm 0.2$  mils ( $50 \pm 5$  microns) on a black and white hiding chart and determine the reflectance using the daylight reflectance factor of ASTM D2805 over the black and white portion of the card and record the values as  $R_B/R_W$  and check for compliance with table I.

4.7.6 Infrared reflectance. Determine the infrared reflectance on the black portion of the charts used for hiding power (see 4.7.5). In all evaluations, use a spectrophotometer which is capable of measuring the total (diffuse and specular) reflectance in accordance with ASTM E308 and ASTM E1331. Nonconformance with table I shall constitute failure of this test.

4.7.7 Drying time. Spray the mixed coating on a test panel, as specified in 4.7.14, to a dry film thickness of  $2 \pm 0.2$  mils ( $50 \pm 5$  microns) and determine the drying under ambient conditions in accordance with ASTM D5895. Check for compliance with table I.

4.7.8 Viscosity. Determine viscosity in accordance with ASTM D1200. Check for compliance with table I.

4.7.9 Condition in container.

4.7.9.1 Component A. Upon opening a full previously unopened container, the condition of the contents shall be examined for compliance with 3.5.1.1. Reseal, then agitate the container for three (3) minutes on a paint shaker and examine for compliance with 3.5.1.1. On reexamination of the contents, the disclosure of any gel bodies or undispersed pigment indicates unsatisfactory settling properties.

4.7.9.2 Component B. Upon opening a full previously unopened container, the condition of the contents shall be examined for compliance with 3.5.1.2.

4.7.10 Storage stability.

4.7.10.1 Component A. Allow a full quart can of component A to stand undisturbed for 1 year in accordance with ASTM D1849 and then examine the contents. Evaluate the pigment settling as



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specified in 4.7.9.1, except agitate the can for 5 minutes on a paint shaker prior to reexamination. Determine viscosity and other applicable tests for compliance with 3.5.2.1.

4.7.10.2 Component B. Allow a full 8 ounce can of component B to stand undisturbed for 1 year under standard laboratory conditions. At the end of this period, examine the contents for compliance to 3.5.2.2.

4.7.11 Accelerated storage stability. Allow tightly sealed glass jars filled with each component to stand undisturbed for 7 days at 140 °F (60 °C). Allow to cool to room temperature and examine the contents. Mix the components as specified in 4.7.13. Nonconformance to 3.5.3 shall constitute failure of this test.

4.7.12 Freeze-thaw stability (class W only). Subject tightly sealed containers of each component to a 4 day cycle of 16 hours at 10 °F (-12 °C) and 8 hours at room temperature. After completion, examine the contents separately, and then mix as specified in 4.7.13. Nonconformance to 3.5.4 shall constitute failure of this test.

4.7.13 Mixing properties and pot life. Thoroughly mix the two components together, as specified by the manufacturer, and examine for compliance with 3.5.5. Place 5 ounces of the material in an eight ounce glass jar and do not agitate or disturb for 4 hours. Viscosity shall be measured in accordance with ASTM D1200. Reseal the glass jar and let sit for an additional 4 hours undisturbed. At the end of this period, examine for compliance with 3.5.5.

4.7.14 Spraying properties. If thinning is necessary for spray application, follow “Instructions for Use” as specified in 3.6. Use the admixed coating within 4 hours. Material shall be sprayed on a solvent cleaned test panel (see 4.6.2 and 4.6.2.1) to a dry film thickness between  $2 \pm 0.2$  mils ( $50 \pm 5$  microns). The coating properties of the dry sprayed surface shall be observed for compliance with 3.5.6.

4.7.15 Color. Determine the color in accordance with ASTM D1729 by applying the coating as specified in 4.7.14. Evaluate for compliance with 3.5.7.

4.7.16 Adhesion. Prepare a test panel pretreated (see 4.6.2) and primed (see 4.6.2.1). Air dry the test panel according to the requirements of the primer in test. Mix the topcoat as specified in 4.7.13. Spray on the topcoat paint to a dry film thickness of  $2 \pm 0.2$  mils ( $50 \pm 5$  microns) and air dry for 168 hours. The test panels shall be immersed for no less than 24 hours at room temperature. Remove the test panels from the water and wipe dry with a soft cloth. Within 3 minutes after removal from the water, make two parallel scribes with a stylus through the coating to the substrate. The scribes shall be  $\frac{3}{4}$  of an inch apart and 2 inches long. The panels shall then be scribed to the substrate from opposing ends of the parallel scribes to form an “X”. Immediately apply a 1 inch wide strip of masking tape with the adhesive side down across the scribes. Press the tape against the surface of the coating by passing a roller across the tape eight times. Remove the tape with one quick motion and examine for coating damage. Perform adhesion testing as specified in ASTM D3359, method A and examine for compliance with 3.5.8.

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4.7.17 Flexibility. Determine flexibility in accordance with ASTM D522, method B. Spray the coating on both a steel panel, tinplated 0.010 inches (0.254 mm) thick and an aluminum alloy 2024 (0 temper) panel anodized in accordance with MIL-A-8625, type I to a dry film thickness of  $2 \pm 0.2$  mils ( $50 \pm 5$  microns). The dimensions of the 2024 aluminum test panel shall be 0.020 by 3 by 6 inches (0.50 by 76.2 by 152.4 mm). Air dry for 168 hours. Bend the coated panels over a 1 inch mandrel. Examine the coating for cracks over the area of the bend for compliance with 3.5.9.

4.7.18 Water resistance. Prepare a test panel pretreated (see 4.6.2) and primed (see 4.6.2.1). Air dry the test panel according to the requirements of the primer in test. Mix the topcoat paint as specified in 4.7.13. Spray on the topcoat paint to a dry film thickness of  $2 \pm 0.2$  mils ( $50 \pm 5$  microns) and air dry for 168 hours. Coat all exposed, uncoated metal surfaces with wax or other suitable coating. Immerse the panels for 168 hours in deionized water at  $77 \pm 2$  °F ( $25 \pm 1$  °C). Panels shall be immersed at a minimum depth of 50%. At the end of the test period, remove and examine for compliance with 3.5.10.

4.7.19 Hydrocarbon fluid resistance. Prepare a film of the coating as specified in 4.7.18. Air dry the test panel for 168 hours after spraying on the topcoat paint. Immerse the panels for 168 hours in a hydrocarbon fluid conforming to JP8 at  $77 \pm 2$  °F ( $25 \pm 1$  °C). Panels shall be immersed at a minimum depth of 50 %. At the end of the test period, remove and examine for compliance with 3.5.11.

4.7.20 Fluid resistance. Prepare two (2) test panels as specified in 4.7.18. Allow test panels to air dry for 168 hours. Immerse in lubricating oil conforming to MIL-PRF-23699 at  $250 \pm 5$  °F ( $121 \pm 2.8$  °C) for 24 hours. Also test sets of panels using hydraulic fluid conforming to MIL-PRF-87257 and MIL-PRF-83282 at 150 °F (66 °C). Nonconformance to 3.5.12 shall constitute failure of this test.

4.7.21 Heat resistance (color change). Prepare two test panels as specified in 4.7.18. One test panel shall act as the control and the other as the test specimen. Expose the test panel to  $250 \pm 5$  °F ( $121 \pm 3$  °C) for 60 minutes. After exposure, allow the test panel to cool to room temperature. After cooling, the coating shall be tested as specified in 4.7.15 to determine the color difference value and examine for compliance with 3.5.13.

4.7.22 Solvent resistance (cure). Prepare a test panel as specified in 4.7.18. A cotton, terrycloth rag shall be soaked in methyl ethyl ketone (MEK) solvent and rubbed back and forth 25 times (50 passes) over the coating with firm finger pressure. The coating shall be examined for compliance with 3.5.14.

4.7.23 Tape resistance. Prepare a test panel, as specified in 4.7.18, except that the topcoat shall be air dried for 8 hours. A strip of masking tape (3M Company #250 or equivalent), no less than 1.0 inch (25 mm) wide, shall be applied to the panel, adhesive side down and pressed down with one pass of a roller weighing no less than 4.5 pounds (2.04 kg). The tape shall remain in contact with the test panel for no less than one hour and then shall be carefully removed. Examine the coating for compliance with 3.5.15.

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4.7.24 Corrosion testing (type III only). For type III coating, prepare ten (10) pretreated steel and five (5) aluminum 3 x 6 inch panels as specified in 4.7.18, except that the specified primers shall not be used. The coating shall be applied as specified for the topcoat. The panels shall be allowed to dry for 168 hours. For this coating, five (5) each of the steel prepared panels shall be exposed to the salt spray resistance and cyclic corrosion resistance. Coat the edges and uncoated metal surfaces with suitable coating.

4.7.24.1 Salt spray resistance. Take five (5) of the steel panels and the five (5) aluminum panels from 4.7.24 and make an "X" scribe through the primer. Expose these for 1,000 hours in accordance with ASTM B117. Upon removal, wash the panels gently in warm running water until free from any visible salt deposits and examine immediately for compliance with 3.5.16.1. Nonconformance to 3.5.16.1 shall constitute failure of this test.

4.7.24.2 Cyclic corrosion resistance. Take remaining five (5) steel panels from 4.7.24 and make an "X" scribe through the primer. Expose the panels to accelerated cyclic corrosion for 40 cycles in accordance with GMW 14872. Upon removal, rinse panels until visible salt deposits are removed. Examine immediately for compliance with 3.5.16.2. Strip the coating with suitable paint remover and inspect for rust, pitting or corrosion not evident with paint present. Nonconformance to 3.5.16.2 shall constitute failure of this test.

4.7.25 Super tropical bleach (STB) resistance. Prepare a steel panel as specified in 4.7.18. Scribe a one (1) inch diameter wax ring using a china marker on the painted surface of the panel. Place approximately one (1) ml of STB agent on the panel surface. Do not cover. Allow to stand 30 minutes then thoroughly wash with water. An STB slurry mix of 40 parts STB and 60 parts water by weight shall be used. Examine for compliance with 3.5.17.

4.7.26 Accelerated weathering. Spray the coating on four test panels as specified in 4.7.18. Three panels are to be tested and one retained as a control. Determine the color as specified in 4.7.15. Expose three panels for 500 hours to accelerated weathering in accordance with ASTM G155, cycle 1. Measure and determine the color of the exposed film. Check for compliance with 3.5.18.

4.7.27 Strippability. Method A: Prepare two test panels as specified in 4.7.18 and weather for no less than 500 hours as specified in 4.7.26. Using a stylus, the panels shall be scribed to the substrate with an "X" 1 inch in length in the middle of the panel on the coated surface side. Seal the edges of the prepared test panels with beeswax by dipping in melted wax to a depth not to exceed 6 mm (0.25 in.) from all edges. The test panels shall then be placed on a rack at 60° to the horizontal, coated side up. Enough coating remover conforming to the control formulation of TT-R-2918, type I, shall be poured along the upper edge of the test panels to completely cover the coating surface. After no less than 4 hours of exposure, the panel shall then be scraped with a rubber scraper to remove loosened coating; apply additional remover conforming to the control formulation of TT-R-2918, type I, to cover any remaining coating and allow it to dwell for an additional 4 hours. Immediately after this second 4 hour exposure, the test panels shall be scraped with a rubber scraper to remove the bulk of the loosened coatings and remover residue. The test panels shall then be rinsed with cool tap water and brushed with a soft, nylon bristle brush. Paint removal shall be determined for each test panel by estimating

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the percentage of the substrate revealed by the stripping process. The result shall be the average of the two panels tested. The result shall conform to 3.5.19.

Method B: Two test panels, prepared as specified in 4.7.18 and weathered for no less than 500 hours as directed in 4.6.9 shall be placed on a rack at a 60° angle with the horizontal. Enough paint remover, conforming to the paint stripping efficiency requirements of MIL-R-81294 type I or II, shall be poured along the upper edge of each test panel to completely cover the coating surface. After no less than 60 minutes of exposure, the loosened coating shall be brushed off, and the test panels shall be rinsed while brushing under a stream of cool water. The result shall be the average of the two panels tested. The result shall conform to 3.5.19.

4.7.28 Toxic ingredients. Other than PCBTF, the manufacturer shall certify that the primer contains no benzene (benzol), chlorinated solvents or ethylene based glycol ethers and their acetates. Nonconformance to 3.5.20 constitutes failure of this requirement.

## 5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When packaging of materiel is to be performed by DoD or in-house contractor personnel, these personnel need to contact the responsible packaging activity to ascertain packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activities within the Military Service or Defense Agency, or within the military service's system command. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

## 6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. This epoxy coating is intended for use as an interior topcoat on aircraft and ground support equipment, as well as a repair coating on Navy weapon systems. No additives other than the appropriate thinner to obtain the proper spray viscosity are to be added. This coating contains a maximum VOC of 340 g/l (2.8 lbs/gal) and is lead and chromate free. The type I formulations may contain VOHAPS and the type II, III and IV formulations are VOHAP-free. The type III formulations are designed as direct to metal with an enhanced corrosion performance of 1,000 hour salt spray and 40 cycle corrosion resistance. The grade B coating is for interior use only.

6.2 Acquisition requirements. The acquisition document should specify the following:

- a. Title, number and date of this specification.
- b. Type, class, grade and color of coating required (see 1.2).
- c. Part or identifying number (PIN) (see 1.4).
- d. Whether a MSDS is required with each shipment (see 3.7 and 4.7.1.3).

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- e. If a toxicity clearance is required (see 3.8).
- f. Lot and batch formation (see 4.3.1).
- g. Packaging requirements (see 5.1).

6.3 Basis of purchase. The epoxy coatings covered by this specification should be purchased by volume, the unit being a kit comprised of 1 quart of 57.75 cubic inches or 1 gallon of 231 cubic inches. The kit components need not be the same size.

6.4 Qualification. With respect to products requiring qualification, awards will be made only for products which are, at the time of award of contract, qualified for inclusion in the QPD, whether or not such products have actually been so listed by that date. The attention of contractors is called to this requirement and manufacturers are urged to arrange to have the products that they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts or purchase orders for the products covered by this specification. Samples for QPD testing (see 4.2) should be submitted to ARL, ATTN: RDRL-WMM-C, Organic Coatings Team, Building 4600, Deer Creek Loop, APG, MD 21005-5066.

6.4.1 Extension of qualification for color. For type I, once qualified for color numbers 17925 and 36375, qualification will extend to other gloss, semi-gloss and lusterless colors, with the exception of color number 34095. Color number 34095 must be qualified separately. For type II, qualification for color number 24533 along with color chips and statements of composition for 17925 and 36375 will extend to other gloss, semi-gloss and lusterless colors. Color 34095 requires separate qualification. For type III, qualification for color number 24533 along with color chips and statement of composition for 36375 will extend to other semi-gloss and lusterless colors.

6.4.2 Conformity to qualified sample. All lots of coatings supplied under this specification must be manufactured using the same formulation, raw materials and supplier(s) of raw materials, methods of manufacture, equipment, and geographic location as the qualification sample, unless changes have been approved by the qualifying activity.

6.4.3 MSDS. Contracting officers will identify those activities requiring copies of a completed MSDS prepared in accordance with FED-STD-313. The pertinent Government mailing addresses for submission of data are listed in FED-STD-313.

6.4.4 Sample identification for qualification inspection. Samples for QPD testing are to be identified in a cover letter with the following information:

- Manufacturer's name and product number.
- Submitted by (name and date).
- Specify the number of samples.
- Specify the reason for submitting the samples.
- Specification MIL-PRF-22750G; Type \_\_\_\_, Color \_\_\_\_, Class \_\_\_\_, Grade \_\_\_\_,
- "Coating, Epoxy, High-Solids".
- Provide a copy of the MSDS.

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Provide a copy of the notarized statement of composition.

Provide a copy of the technical data sheet.

Provide a copy of the test report.

6.5 Retention of qualification. To retain qualification of products approved for listing in the QPD, the manufacturer will be requested to verify by certification to the qualifying activity that its product(s) comply with the requirements of this specification. Unless otherwise specified by the qualifying activity, the time of periodic verification by certification will be in two-year intervals from the date of original qualification and will be initiated by the qualifying activity.

6.6 Conformance rejection and retest. Failure in any conformance inspection will result in the rejection of the batch from which it was obtained and constitutes justification for removal from the qualified products list. Rejected material cannot be resubmitted for acceptance without written approval from the qualification activity (see 4.3). The application for resubmission will contain all details concerning previous rejections and measures taken to correct these deficiencies.

6.7 Toxicity clearance request. Department of the Army Regulation (AR) 40-5, Preventive Medicine, (AR) 70-1, Acquisition Policy, and Department of the Army Pamphlet 70-3, Acquisition Procedures, require a toxicity clearance. Army toxicity questions and/or a toxicity clearance request should be addressed to: Commander, Public Health Command (Provisional) (MCHB-TS-T), 5158 Blackhawk Road, APG, MD 21010-5403.

6.8 Detail specification. MIL-DTL-53072, Chemical Agent Resistant Coating (CARC) System Application Procedures and Qualification Control Inspection, is available for application procedures and quality control inspection of this coating.

6.9 Subject term (key word) listing.

Aircraft  
Army  
Color  
Equipment  
Kit  
Navy  
Pigment  
Topcoat

6.10 Change from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

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CONCLUDING MATERIAL

Custodians:

Army - MR

Navy - AS

Air Force - 99

Preparing activity:

Army - MR

Project 8010-2011-007

Review activities:

Army - MD1, MI

Navy - CG, MC, OS, SH

Air Force - 11, 84

Civil agency:

GSA/FAS

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <https://assist.daps.dla.mil/>.