

**MIL-C-17504B****28 SEPTEMBER 1960****SUPERSEDING****MIL-C-17504A (DOCKS)****8 FEBRUARY 1957****MILITARY SPECIFICATION****COATING COMPOUND, ACRYLIC, CLEAR**

*This specification has been approved by the Department of Defense and is mandatory for use by the Departments of the Army, the Navy, and the Air Force.*

**1. SCOPE**

1.1 This specification covers one type and grade of an unpigmented, clear, acrylic plastic solution for use as a coating over pigmented finishes and other surfaces where applicable.

**2. APPLICABLE DOCUMENTS**

2.1 The following specifications and standards, of the issue in effect on date of invitation for bids, form a part of this specification to the extent specified herein.

**SPECIFICATIONS****FEDERAL**

- L-P-406 — Plastics, Organic: General Specifications, Test Methods.
- TT-E-489 — Enamel; Gloss, Synthetic (for Exterior and Interior Surfaces).
- VV-G-101 — Gasoline; Motor. U. S. Government.
- PPP-C-96 — Cans, Metal, 28 Gage and Lighter.
- PPP-D-729 — Drums: Metal, 55-Gallon (for Shipment of Noncorrosive Materials).

- PPP-D-760 — Drums and Pails, Metal (5 and 16.64 Gallons).

**STANDARDS****FEDERAL****Fed. Test Method**

- Std. No. 141 — Paint, Varnish, Lacquer, and Related Materials; Methods of Inspection, Sampling, and Testing.

**MILITARY**

- MIL-STD-129 — Marking for Shipment and Storage.

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on date of invitation for bids shall apply.

**OFFICIAL CLASSIFICATION COMMITTEE****Uniform Freight Classification Rules.**

(Application for copies should be addressed to the Official Classification Committee, 1 Park Avenue at 33rd Street, New York 16, N.Y.)

**AMERICAN TRUCKING ASSOCIATION****National Motor Freight Classification Rules.****FSC 8010**

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(Application for copies should be addressed to the American Trucking Association, 1424 — 16th Street, N.W., Washington 6, D.C.)

**3. REQUIREMENTS**

**3.1 Description.** The coating compound shall be composed of a clear transparent resin dispersed in a satisfactory solvent and shall be suitable for spraying at ordinary temperature.

**3.2 Material.** The resin shall consist of at least 93% of methyl and ethyl ester polymers and copolymers of acrylic and methacrylic esters modified by not more than 7% (solids) chlorinated or other resin properly dispersed in a hydrocarbon solvent. The solution shall be properly plasticized and stabilized and be free from any injurious additives or adulterants.

**3.3 Solids, viscosity, ash, and color.** The coating compound shall conform to table I when tested as specified in 4.3.2.

TABLE I. Quantitative requirements

	mm.	Max.
Solids, percent by weight.	22	26
Viscosity @ 77°F., seconds.	22	....
Ash, percent by weight.	....	0.10
Color	Not darker than a solution of 0.572 gm. $K_2Cr_2O_7$ per 100 ml. concentrated $H_2SO_4$ .	

**3.4 Adhesion to enamel.** When tested as specified in 4.3.2, the coating shall exhibit satisfactory adhesion to and show no wrinkling or lifting of the enamel, or other detrimental effects.

**3.5 Self-lifting.** Prior to testing for flexibility (see 3.3) the panel shall be examined for evidence of self-lifting as specified in 4.3.2.

**3.6 Salt spray resistance.** When tested in accordance with 4.3.2, the coating shall show no blistering, discoloration, or loss of adhesion after five days exposure.

**3.7 Drying time.** When tested as specified in 4.3.3 each coat of a two-coat application of the coating compound shall exhibit the following drying characteristics:

<b>1st Coat</b>	
Dust-free .....	8 minutes maximum
Tack-free .....	10 minutes maximum
Full-hardness .....	8 hours maximum
<b>2nd Coat</b>	
Dust-free .....	13 minutes maximum
Tack-free .....	30 minutes maximum
Full-hardness .....	18 hours maximum

**3.8 Flexibility.** When tested as specified in 4.3.4, a film of the coating shall withstand bending without cracking.

**3.9 Water resistance.** When tested in accordance with 4.3.5, the coating shall show no detrimental effect from the water.

**3.10 Gasoline resistance.** When tested in accordance with 4.3.6, the coating shall show no whitening, dulling, softening of the film, or loss of adhesion after 15 minutes exposure.

**3.11 Mar resistance.** When tested in accordance with 4.3.7 the coating shall show at least 75% of original gloss.

**4. QUALITY ASSURANCE PROVISIONS**

**4.1** The supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified, the supplier may utilize his own or any other inspection facilities and services acceptable to the Government. Inspection records of the examination and tests shall be kept complete and available to the Government as specified in the contract or order. The Government reserves the right to perform any of the inspections set forth in the specification where such inspection is deemed necessary to assure supplies conform to prescribed requirements.

**4.2 Inspection and sampling.** Unless otherwise specified inspection and sampling shall be in accordance with method 1031 of Standard FED. TEST METHOD STD. NO. 141.

### 4.3 Test procedures.

**4.3.1 Preparation of combination panels.** When combination panels are specified, they should be prepared in the following manner. To panels prepared as for the flexibility test under Specification TT-E-489 using Class A enamel air-dried in a horizontal position for 168 hours instead of as specified, spray apply two coats of the coating compound. Apply the first coat to a minimum dry film thickness of 0.5 mil and after the first coat has air-dried for 8 hours, apply the second coat to a minimum dry film thickness of 1.0 mil. Air-dry the second coat to full hardness prior to conducting tests.

**4.3.2** The following tests shall be conducted in accordance with the methods as outlined in Standard FED. TEST METHOD STD. NO. 141.

Method No.	Tests
Solids .....	4041
Viscosity .....	4272
Ash .....	5262
Color .....	4241
Adhesion .....	6304*
Self-lifting .....	6252**
Salt spray resistance .....	6061*

\* Adhesion and salt spray resistance shall be determined on combination panels prepared as specified in 4.3.1.

\*\* Self-lifting shall be determined on the panels prepared for flexibility test (see 4.3.4).

**4.3.3 Drying time.** Drying time shall be determined in accordance with method 4061 of Standard FED. TEST METHOD STD. NO. 141 on each coat of a spray applied two-coat application of the coating compound. Apply the first coat to a minimum dry film thickness of 0.5 mil and after the first coat has air-dried for 12 hours apply the second coat to a minimum dry film thickness of 1.0 mil.

**4.3.4 Flexibility.** Flexibility shall be determined in accordance with method 6221 of Standard FED. TEST METHOD STD. NO. 141. Spray apply a two-coat application of the coating as specified in 4.3.3. After the second coat has air-dried to full hardness, bend the panel over a  $\frac{1}{8}$ -inch mandrel.

**4.3.5 Water resistance.** Water resistance shall be determined on combination panels prepared as specified in 4.3.1 in accordance with method 6011 of Standard FED. TEST METHOD STD. NO. 141. Immerse the panel in distilled water at room temperature (21° to 32° C) (70° to 90° F.) and allow to remain for 16 hours. Remove from the water, allow to dry, and examine the coating.

**4.3.6 Gasoline resistance.** Gasoline resistance shall be determined on combination panels prepared as specified in 4.3.1 in accordance with method 6011 of Standard FED. TEST METHOD STD. NO. 141. Immerse the panel in gasoline conforming to Specification VV-G-101, cover with a watch glass, and allow to remain at room temperature (21° to 32° C.) (70° to 90° F.) for 15 minutes. Remove from the gasoline, allow to dry, and examine the coating.

**4.3.7 Mar resistance.** Mar resistance shall be determined on combination panels prepared as specified in 4.3.1 in accordance with method 1093 of Specification L-P-406, subjecting the coating to 1,600 grams of abrasive.

**4.4 Inspection of preparation for delivery.** The packaging, packing, and marking of the coating compound shall be inspected to determine conformance with the requirements of Section 5 of this specification.

## 5. PREPARATION FOR DELIVERY

**5.1 Packaging.** Packaging shall be level A or C as specified (see 6.1).

**5.1.1 Level A.** The coating compound shall be furnished in 1-gallon metal cans, 5-gallon metal drums, or 55-gallon metal drums, as specified (see 6.1).

**5.1.1.1** One gallon metal cans shall conform to type V, class 2 or class 4, of Specification PPP-C-96. Inner seals shall be furnished when screw cap closures are supplied.

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5.1.1.2 Five gallon metal drums shall conform to type I of Specification PPP-D-760. Inner seals shall be furnished on all drums.

5.1.1.3 Fifty-five gallon metal drums shall conform to type II of Specification PPP-D-729.

5.1.2 *Level C.* The coating compound shall be packaged in accordance with the supplier's standard practice.

5.2 *Packing.* Packing shall be level A, B, or C as specified (see 6.1).

5.2.1 *Level A.*

5.2.1.1 The 1-gallon cans shall be packed in accordance with the overseas shipment requirements of the appendix to Specification PPP-C-96.

5.2.1.2 The 5-gallon drums and the 55-gallon drums require no overpacking.

5.2.2 *Level B.*

5.2.2.1 The 1-gallon cans shall be packed in accordance with the domestic shipment requirements of the appendix to Specification PPP-C-96.

5.2.2.2 The 5-gallon drums, and the 55-gallon drums require no overpacking.

5.2.3 *Level C.* The coating compound shall be packed in a manner which will insure arrival at destination in satisfactory condition and which will be acceptable to the carrier at lowest rates or ratings. Containers and packing shall comply with Uniform Freight Classification Rules or with National

Motor Freight Classification Rules or with other carrier rules and regulations as applicable to the mode of transportation.

5.3 *Marking.* Interior packages and shipping containers shall be marked in accordance with Standard MIL-STD-129 and in addition pertinent instructions for mixing, thinning and application of the coating compound shall be legibly and durably marked on each can and drum.

## 6. NOTES

6.1 *Ordering data.* Procurement documents should specify the following:

- (a) Title, number, and date of this specification.
- (b) Quantity and size of container required (see 5.1.1).
- (c) Level of packaging, and level of packing required (see 5.1 and 5.2).

*Notice.* When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

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## 5. PROBLEM AREAS

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7a. NAME OF SUBMITTER (Last, First, MI) - Optional

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