

INCH - POUND

MIL-F-18264D
AMENDMENT 2
31 MAY 1994
SUPERSEDING
AMENDMENT 1
23 APRIL 1971

MILITARY SPECIFICATION

FINISHES: ORGANIC, WEAPONS SYSTEMS, APPLICATION AND CONTROL OF

This amendment forms a part of MIL-F-18264D,
dated 22 JULY 1968, and is approved for use by all
Departments and Agencies of the Department of Defense.

PAGE 1

* 2.1, Under "Specifications - Federal," ADD:

"O-A-51 - Acetone, Technical
P-D-680 - Dry Cleaning and Degreasing Solvent
QQ-P-35 - Passivation Treatments for Corrosion Resistant Steel
TT-P-28 - Paint, Aluminum, Heat Resisting (1200°F)
TT-T-266 - Thinner: Dope and Lacquer (Cellulose-Nitrate)
TT-E-489 - Enamel, Alkyd, Low VOC Content
TT-E-527 - Enamel, Alkyd, Lusterless, Low VOC Content
TT-E-529 - Enamel, Alkyd, Semigloss, Low VOC Content
TT-N-95 - Naphtha, Aliphatic
TT-P-1757 - Primer Coating, Zinc Chromate, Low-Moisture-Sensitivity"

* Bottom of page, ADD the following "Beneficial comment block" and Form DD1426
(see last page of this amendment) to the back of the document:

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, Naval Air Warfare Center Aircraft Division, Code SR3, Highway 547, Lakehurst, NJ 08733-5100, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

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PAGE 2

- * 2.1 Under "Specifications - Federal," DELETE:
"TT-E-776, TT-B-846, and TT-R-771"

PAGE 3

- * 2.1, Under "Specifications - Military," DELETE:
"MIL-C-5410, MIL-D-5549, MIL-D-5550, MIL-D-5551, MIL-E-5556,
MIL-C-7439, MIL-S-7502, MIL-E-7729, MIL-D-7850, MIL-P-8585,
MIL-P-14276, MIL-C-18263, MIL-L-19537, MIL-T-19544, MIL-C-22543,
MIL-C-22751, MIL-M-25047, MIL-C-27315, MIL-P-52192, MIL-E-52227, and
MIL-C-81773"
- * 2.1, Under "Specifications - Military," ADD:
"DOD-P-15328 - Primer (Wash), Pretreatment (Formula No. 117) For Metals)
(Metric)
MIL-C-43616 - Cleaning Compound, Aircraft Surface
MIL-P-53022 - Primer, Epoxy Coating, Corrosion Inhibiting, Lead and
Chromate Free
MIL-P-53030 - Primer Coating, Epoxy, Water Reducible, Lead and Chromate
Free
MIL-L-52043 - Lacquer, Semi Gloss, Cellulose Nitrate
MIL-C-81706 - Chemical Conversion Materials for Coating Aluminum and
Aluminum Alloys
MIL-C-81772 - Thinner, Aircraft Coating
MIL-C-83286 - Coating, Urethane, Aliphatic Isocyanate, For Aerospace
Applications
MIL-C-83231 - Coatings, Polyurethane, Rain Erosion Resistant, for
Exterior Aircraft and Missile Plastic Parts
MIL-C-83445 - Coating System, Polyurethane, Non Yellowing, White, Rain-
Erosion Resistant, Thermally Reflective
MIL-C-85285 - Coating: Polyurethane, High-Solids
MIL-P-85582 - Primer Coatings: Epoxy, Waterborne"

PAGE 6

- * 2.1, Under "Standards" ADD "Military" and "MIL-STD-2161 - Paint Schemes
and Exterior Markings for U.S. Navy and Marine Corps Aircraft"

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* 4.1.1, a.: DELETE and SUBSTITUTE:

"4.1.1, a. Wash primer or pretreatment coating, MIL-C-8514, may be used on corrosion resistant steel surfaces which cannot be freshly passivated in accordance with QQ-P-35 prior to application of primer coating. It should not be used on metal that becomes heated over 300°F. Directions for application under various condition of humidity shall be in accordance with MIL-C-8507."

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* 4.1.1, b.: DELETE and SUBSTITUTE:

"4.1.1, b. Epoxy primer, MIL-P-23377 or MIL-P-85582, is used as an undercoat for epoxy and polyurethane topcoats. MIL-P-85582 is not for use in wet installation of fasteners, slip fits, or press fits. MIL-P-85582 may cause flash rusting on bare steel. For both specifications, use only material purchased under the latest revision."

* 4.1.1, d.: DELETE and SUBSTITUTE:

"4.1.1, d. Zinc chromate primer coating, TT-P-1757, used as a one component, alkyd based, corrosion inhibiting primer coating on surface-treated aluminum and on substrates coated with wash primer conforming to MIL-C-8514 or DOD-P-15328. It is used as an alternate to MIL-P-23377 in the wet installation of fasteners, slip fits, and press fits."

4.1.1, e.: DELETE and SUBSTITUTE:

"4.1.1, e. Epoxy topcoat, MIL-C-22750, is used on weapons systems as a highly resistant finish to chemicals and solvents."

* 4.1.1, k.: DELETE and SUBSTITUTE:

"4.1.1, k. Miscellaneous. MIL-P-53022, MIL-P-53030, MIL-L-52043, and TT-E-529 are frequently used coatings for the U.S Army Missile and Tank and Automotive Command."

* 4.1.1: ADD the following NEW paragraph "l":

"4.1.1, l. Polyurethane coatings, MIL-C-85285 and MIL-C-83286, are highly weather resistant coatings used as the standard topcoat over the primer coating MIL-P-23377 or MIL-P-85582."

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* 4.2.3, line 3, DELETE "MIL-P-8585" and SUBSTITUTE "TT-P-1757."

PAGE 10

* TABLE I: DELETE entry for "MIL-P-8585" in its entirety.

PAGE 11

TABLE I: DELETE "MIL-E-7729, Types I and II," and SUBSTITUTE "TT-E-489;"
DELETE "MIL-E-5556" and SUBSTITUTE "TT-E-527."

PAGE 12

* TABLE I: DELETE entries for "Polyurethane topcoat, MIL-C-81773," "Epoxy primer, MIL-P-23377," "Epoxy topcoat, MIL-C-22750," and "Dopes, MIL-D-5549, MIL-D-5550, MIL-D-5551, and MIL-D-7850," in their entirety.

PAGE 13

* 5.1.2, line 9: DELETE "O-T-620," and SUBSTITUTE "P-D-680, O-A-51, or TT-N-95."

PAGE 14

* 5.1.3.1, lines 1 through 5: DELETE first sentence and SUBSTITUTE:

"Using MIL-C-38334, remove surface oxides and trace contaminants on aluminum and magnesium surfaces after cleaning operations (see 5.1.3) while surfaces are still wet."

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5.1.5, line 3, sentence 2: DELETE and SUBSTITUTE:

"Aluminum surfaces shall be treated to produce coatings conforming to MIL-C-5541, Class 1A or 3."

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- * 5.2.1, lines 1 through 2: DELETE first sentence and SUBSTITUTE:
"Unless otherwise specified in the contract or purchase order, the epoxy primer coating and polyurethane topcoat is the standard coating system."

PAGE 17

- * TABLE II, DELETE all references to "MIL-P-8585."
* TABLE II, DELETE entries for polyurethane coating "MIL-C-81773" and "MIL-C-83286" and SUBSTITUTE:

System	Wash primer	Primer	Topcoat
Epoxy/Polyurethane	---	MIL-P-23377 or MIL-P-85582	MIL-C-85285 or MIL-C-83286

- TABLE II, bottom row, column 4: DELETE "MIL-E-7729 or MIL-E-5556," and SUBSTITUTE "TT-E-489 or TT-E-527."

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- * TABLE III, for MIL-P-23377, DELETE "Apply a crosscoat in accordance with MIL-C-22751," and SUBSTITUTE "Apply to a dry film thickness of 0.6 to 0.9 mils in two coats."
* TABLE III, DELETE all references to MIL-C-81773, MIL-C-83286, and MIL-C-22751, and SUBSTITUTE:

Operation	Comment	Specification
Epoxy Primer/ Polyurethane Topcoat	Apply topcoat to a total dry film thickness of 1.7 to 2.3 mils	MIL-C-85285 or MIL-C-83286

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- * 5.3.1.1c.: DELETE "MIL-C-18263" and SUBSTITUTE "MIL-STD-2161."
- * 5.3.2.1, line 5 and 12: DELETE "MIL-R-7439 or MIL-C-27315" and SUBSTITUTE "MIL-C-83231 or MIL-C-83445."

PAGE 21

- 5.3.2.3, line 2: DELETE "MIL-E-7729, Type III," and SUBSTITUTE "TT-E-489."

PAGE 22

- * 5.4, beginning at the end of the top line of page:

DELETE "...0.0006 to 0.0009 inch for one cross coat of epoxy primer, 0.0010 to 0.0015 inch total dry film thickness of polyurethane topcoat conforming to MIL-C-81773, 0.0017 to 0.0023 inch total dry film thickness of polyurethane topcoat conforming to MIL-C-83286, and 0.0011 to 0.0015 inch for one mist coat plus one wet coat of epoxy topcoat."

and

SUBSTITUTE "...total dry film thickness of 0.0006 to 0.0009 inch (0.6 to 0.9 mils) for epoxy primer coating MIL-P-23377 or MIL-P-85582 applied in one or two coats, total dry film thickness of 0.0017 to 0.0023 inch (1.7 to 2.3 mils) for polyurethane topcoat MIL-C-85285 or MIL-C-83286 or epoxy topcoat MIL-C-22750."

- * 5.6.2.1: DELETE paragraph in its entirety.

PAGE 23

- * 5.6.3: DELETE paragraph in its entirety.
- * ADD new paragraph 5.6.2.4:

"5.6.2.4 Polyurethane system. Polyurethane topcoat, MIL-C-85285 or MIL-C-83286, is to be spray applied over epoxy primer coating, MIL-P-23377 or MIL-P-85582, which has been allowed to dry for 1 to 2 hours. The dry film thickness of the primer coating shall be 0.6 to 0.9 mils. The topcoat is to be applied in accordance with table III."

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- * 5.8.2.1: DELETE paragraph in its entirety.
- *5.8.3, line 3: DELETE "MIL-C-18263" and SUBSTITUTE "MIL-STD-2161."

PAGE 28

- * 5.12, lines 1 through 5: DELETE first two sentences and SUBSTITUTE:

"For Department of the Navy aircraft, insignia and markings shall be applied in accordance with MIL-STD-2161."

- 7.1, second sentence: DELETE second sentence and SUBSTITUTE:

"The anodized surface, in addition, shall be manually treated with materials conforming to MIL-C-81706 to produce coating conforming to MIL-C-5541, manually applied."

PAGE 29

- 7.1, top of page:DELETE "MIL-E-7729 or MIL-E-5556" and SUBSTITUTE "TT-E-489 or TT-E-527."

- 8.1, end of paragraph: ADD the following:

"When examined visually, the coating shall be free from runs, sags, scratches, voids, excessive orange peel, inclusions and other film irregularities. In addition, when examined by means of a minimum 6X magnification lens, there shall be no evidence of microcracks, except that after flight test , slight microcracks around highly stressed fasteners shall not be cause for rejection."

PAGE 33

- * 12.2, middle of page: DELETE third and fourth sentences, and SUBSTITUTE:

"Originally applied, aged, epoxy primer coating, MIL-P-23377 or MIL-P-85582, may be used as a base for subsequent topcoats by applying a thin coat (0.2 to 0.5 mil dry film thickness) followed by application of an epoxy primer epoxy or polyurethane topcoat. The aged primer coating should be lightly scuff sanded with aluminum oxide paper."

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13.6d., second sentence: DELETE and SUBSTITUTE:

"Limited in use for bonding the standard finishing systems to corrosion resistant steel surfaces and high strength steel with cadmium plate, if the latter does not receive a supplemental chemical treatment. Wash primer conforming to MIL-C-8514 is essential as a tie coat between the metal and coating systems using MIL-P-7962."

PAGE 40

14.1, 13/, a.: DELETE all references to "MIL-C-22543" and SUBSTITUTE "MIL-C-43616."

14.1, 13/, b.: After "0.25," ADD "percent."

Page 55

* 14.1, 31/: DELETE in its entirety and SUBSTITUTE:

"31/ The wet adhesion of epoxy primer coating (MIL-P-23377 or MIL-P-85582) has been found to be inadequate, compared to conventional anodic coatings produced from chromic acid; for this reason, additional treatment with materials conforming to MIL-C-81706 to produce coatings conforming to MIL-C-5541 is required."

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TABLE V: DELETE all reference to TT-R-771.

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The margins of this amendment are marked with an asterisk (*) to indicate where changes (additions, modifications, corrections, deletions) from the previous amendment were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content, irrespective of the marginal notations and relationship to the last previous amendment.

Custodians:

Army - ME
Air Force - 11
Navy - AS

Preparing activity:

Navy - AS
(Project No. 8010-0500)

Review activities:

Army - AT, MR, AR, MI, AV
Air Force - 11, 84
Navy - CG

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I RECOMMEND A CHANGE:

1. DOCUMENT NUMBER

MIL-F-18264D

2. DOCUMENT DATE (YYMMDD)

680722

3. DOCUMENT TITLE

FINISHES: ORGANIC, WEAPONS SYSTEMS, APPLICATION AND CONTROL OF

4. NATURE OF CHANGE *(Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)*

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME *(Last, First, Middle Initial)*

b. ORGANIZATION

c. ADDRESS *(Include Zip Code)*

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