

AEROSPACE MATERIAL SPECIFICATION

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An American National Standard

COATING, SOIL BARRIER Semi-Permanent

1. SCOPE:

- 1.1 Form: This specification covers a barrier coating in the form of a ready-to-be applied liquid with a consistency suitable for brush, spray, or dip application to exterior surfaces of aircraft.
- 1.2 Application: Primarily as a temporary protective coating for painted and unpainted exterior surfaces of aircraft to ease soil removal from difficult-to-clean areas and to increase paint durability.
- 1.3 Safety - Hazardous Materials: While the materials, methods, applications, and processes described or referenced in this specification may involve the use of hazardous materials, this specification does not address the hazards which may be involved in such use. It is the sole responsibility of the user to ensure familiarity with the safe and proper use of any hazardous materials and to take necessary precautionary measures to ensure the health and safety of all personnel involved.

- 2. APPLICABLE DOCUMENTS: The following publications form a part of this specification to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order.

- 2.1 SAE Publications: Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

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2.1.1 Aerospace Material Specifications:

- AMS 2470 - Anodic Treatment of Aluminum Alloys, Chromic Acid Process
- AMS 2475 - Protective Treatments, Magnesium Alloys
- AMS 2825 - Material Safety Data Sheets
- AMS 4037 - Aluminum Alloy Sheet and Plate, 4.4Cu 1.5Mg - 0.60Mn (2024; -T3 Flat Sheet, -T351 Plate), Solution Heat Treated
- AMS 4041 - Aluminum Alloy Sheet and Plate, Alclad, 4.4Cu - 1.5Mg - 0.60Mn (Alclad 2024 and 1-1/2% Alclad 2024, -T3 Flat Sheet; 1-1/2% Alclad 2024-T351 Plate)
- AMS 4049 - Aluminum Alloy Sheet and Plate, Alclad, 5.6Zn - 2.5Mg - 1.6Cu - 0.23Cr (Alclad 7075; -T6 Sheet, -T651 Plate), Solution and Precipitation Heat Treated
- AMS 4376 - Magnesium Alloy Plate, 3.0Al - 1.0Zn (AZ31B-H26), Cold Rolled and Partially Annealed
- AMS 4911 - Titanium Alloy Sheet, Strip, and Plate, 6Al - 4V, Annealed
- MAM 4911 - Titanium Alloy Sheet, Strip, and Plate, 6Al - 4V, Annealed
- AMS 5045 - Sheet and Strip, 0.25 Carbon, maximum, Hard Temper

2.2 ASTM Publications: Available from ASTM, 1916 Race Street, Philadelphia, PA 19103-1187.

- ASTM B 117 - Salt Spray (Fog) Testing
- ASTM D 56 - Flash Point by Tag Closed Tester
- ASTM D 445 - Kinematic Viscosity of Transparent and Opaque Liquids (and the Calculation of Dynamic Viscosity)
- ASTM D 1193 - Reagent Water
- ASTM D 1640 - Drying, Curing, or Film Formation of Organic Coatings at Room Temperature
- ASTM D 1655 - Aviation Turbine Fuels
- ASTM D 3359 - Measuring Adhesion by Tape Test
- ASTM D 4141 - Conducting Accelerated Outdoor Exposure Tests of Coatings
- ASTM F 483 - Total Immersion Corrosion Test for Aircraft Maintenance Chemicals
- ASTM F 484 - Stress Cracking of Acrylic Plastics in Contact with Liquid or Semi-Liquid Compounds
- ASTM F 485 - Effects of Cleaners on Unpainted Aircraft Surfaces
- ASTM F 519 - Mechanical Hydrogen Embrittlement Testing of Plating Processes and Aircraft Maintenance Chemicals
- ASTM F 1110 - Sandwich Corrosion Test
- ASTM F 1111 - Corrosion of Low-Embrittling Cadmium Plate by Aircraft Maintenance Chemicals

2.3 U.S. Government Publications: Available from Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

2.3.1 Federal Specifications:

- PPP-P-1892 - Paint, Varnish, Lacquer; and Related Materials, Packaging, Packing, and Marking of

2.3.2 Federal Standards:

FED-STD-141 - Paint, Varnish, Lacquer, and Related Materials, Methods of Inspection, Sampling and Testing

2.3.3 Military Specifications:

MIL-P-23377 - Primer, Coating, Epoxy Polyamide, Chemical and Solvent Resistant

MIL-P-25690 - Plastic, Sheets and Parts, Modified Acrylic Base, Monolithic, Crack Propagation Resistant

MIL-C-83286 - Coating Urethane, Aliphatic Isocyanate, for Aerospace Applications

3. TECHNICAL REQUIREMENTS:

3.1 Material: Shall be a water-base coating material containing no polyvinyl chloride (PVC) or silicones and meeting the requirements of 3.2.

3.2 Properties: Coating material shall conform to the following requirements:

3.2.1 As Supplied:

3.2.1.1 Viscosity: Shall be 1 to 10 centipoises (0.001 - 0.010 Pa.s) at $25^{\circ}\text{C} \pm 1$ ($77^{\circ}\text{F} \pm 2$), determined in accordance with ASTM D 445.

3.2.1.2 Storage Life: Coating material shall show no abnormal change with age in sealed containers; it shall meet all other technical requirements of this specification at any time up to one year from date of shipment when stored, under normal warehouse conditions, at 5° to 30°C (41° to 86°F).

3.2.1.3 Corrosion of Metal Surfaces:

3.2.1.3.1 Sandwich Corrosion: Test panels shall show a rating no worse than 2, determined in accordance with ASTM F 1110. Any dried coating shall be removed from test panels with the remover solution described in 4.5.2.

3.2.1.3.2 Total Immersion Corrosion: No test panel shall show evidence of corrosion nor a weight change greater than the following, determined in accordance with ASTM F 483. The coating shall not be allowed to dry on the panels prior to rinsing.

Panel	Weight Change mg/cm ² per 24 hours
AMS 4037 Aluminum Alloy, anodized as in AMS 2470	0.3
AMS 4041 Aluminum Alloy	0.3
AMS 4049 Aluminum Alloy	0.3
AMS 4376 Magnesium Alloy, dichromate treated as in AMS 2475	0.2
AMS 4911 or MAM 4911 Titanium Alloy	0.1
AMS 5045 Carbon Steel	0.8