

NATIONAL AEROSPACE STANDARD

AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC., 610 SHOREHAM BUILDING, WASHINGTON 5, D. C.

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1. SCOPE

This specification covers the requirements for a durable, exterior and interior water reducible topcoat.

1.1 Classification: - The coatings shall be furnished in the following grades, classes and types:

Grade I - Air drying
Grade II - Baking

Class A - General Fluid Resistance - These coatings do not have to be resistant to synthetic oils under Class B, but are intended to be resistant to hydrocarbon fluids.

Class B - Synthetic Fluid Resistance - The coatings of this class are intended to be resistant to synthetic oils in addition to the requirements of Class A materials.

Type 1 - Gloss
Type 2 - Semi-gloss
Type 3 - Lusterless

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CUSTODIAN: AEROSPACE RESEARCH AND TESTING COMMITTEE

PROCUREMENT
SPECIFICATION

NONE

TITLE

TOPCOAT, WATER REDUCIBLE

CLASSIFICATION

Specification

NAS 1616

Sheet 1 of 12

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2. APPLICABLE DOCUMENTS

2.1 The following specifications and standards of issue on the date of the purchase order, form a part of this specification to the extent specified herein:

1. Federal Test Method Standard 141 - Paint, Varnish, Lacquer, and Related Materials; Methods of Inspection, Sampling, and Testing.
2. QQ-A-362 - Aluminum Alloy, Plate and Sheet, Alclad 2024
3. QQ-M-44 - Magnesium Alloy: Plate and Sheet (AZ31)
4. MIL-H-3136 - Standard Test Fluids Hydrocarbon and Iso-octane
5. MIL-M-3171 - Magnesium Alloy; Process for Corrosion, Protection of
6. MIL-O-5606 - Oil; Hydraulic, Aircraft, Petroleum Base.
7. MIL-L-7808 - Lubricating Oil, Gas Turbine, Aircraft
8. MIL-P-8585 - Primer Coating, zinc chromate, low moisture sensitivity
9. MIL-A-8625 - Anodic coating, for aluminum and aluminum alloy.

3. REQUIREMENTS

3.1 Materials - The ingredient materials used in the manufacture of finish coatings to meet the requirements of this specification shall be of high quality entirely suitable for the purpose. The component ingredients shall be intimately assembled and processed to provide a high quality finished product suitable for application as packaged, or when reduced to proper consistency with distilled or deionized water.

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THIS DRAWING SUPERSEDES ALL ANTECEDENT STANDARD DRAWINGS FOR THE SAME PRODUCT, AND SHALL BECOME EFFECTIVE FOR VENDOR MANUFACTURERS NOT LATER THAN 6 MONTHS AFTER THE LATEST DATE OF APPROVAL SHOWN.

- 3.1.1** Toxicity - No restrictions have been placed as to manufacture, formulation, and raw materials used with the exception that no hydrocarbons or substances of known toxicity under normal conditions of usage are permitted with the exception that not more than 5% hydrocarbon solvent is permitted.
- 3.1.2** Odor - The odor shall be normal for the volatile content permitted in formulation. There shall be no obnoxious odor.
- 3.2** Physical Requirements -
- 3.2.1** Condition in Container - The product, in a freshly opened full container, shall show no grit, skinning, curdling, or excessive pigment flotation and no more settling or caking than may be easily redispersed with a paddle to a homogeneous condition, in accordance with paragraph 4.4.3.
- 3.2.2** Freeze - Thaw Stability - The primer shall be satisfactory after being exposed to three cycles as specified in Paragraph 4.4.4 and shall meet all the acceptance tests specified herein.
- 3.2.3** Storage Stability - The material, stored in a full closed one-quart container for 1 year at 70 to 90°F shall meet all the acceptance tests specified herein.
- 3.2.4** Dilution Stability - The topcoat material, when reduced with water to application consistency, shall be subjected to the tests specified in Paragraph 4.4.5.
- 3.2.5** Fineness of Grind - The fineness of grind shall not be less than seven (7) when tested in accordance with FTMS141, Method 4411.
- 3.2.6** Application - The viscosity of the coating shall be suitable for application by spray, dip, flow coat, etc. when reduced with water in accordance with manufacturer's recommendation.
- 3.3** Film Properties
- 3.3.1** Working Properties - The topcoat when tested in accordance with Paragraph 4.4.9 shall exhibit good working properties, and shall dry to a uniform, smooth surface free of runs, sags, bubbling, wrinkling or other defects.

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- 3.3.2 Drying Time -**
- 3.3.2.1 Grade I, Classes A and B -** The topcoat in accordance with Paragraph 4.3.1.2 applied shall air dry dust free within a maximum of 30 minutes, tack free in a maximum of 2 hours, and dry hard in a maximum of 4 hours following application.
- 3.3.2.2 Grade II, Classes A and B -** The topcoat applied in accordance with Paragraph 4.3.1.2 shall develop full properties when baked for 15 minutes at 300°F ± 10°F.
- 3.3.3 Surface Appearance -** The topcoat films, after drying, shall be free from blushing, streaks, blisters, coarse particles, silking or other irregularities of surface when visually examined.
- 3.3.4 Print Resistance -** Grade I topcoat films shall show no evidence of surface irregularities when subjected to the tests specified in Paragraph 4.4.9.
- 3.3.5 Self Lifting Properties -** Grade I and II coating; when tested as specified in Paragraph 4.4.10 shall show no evidence of lifting, blisters, pinholes, or other film irregularities.
- 3.3.6 60 Degree Specular Gloss -** Type I colors shall have a minimum value of 90 units, Type II colors shall have specular gloss of 25-40 units and Type III colors a maximum of 10 units when tested in accordance with FTMS141 Method 6101.
- 3.3.7 Primer Absorption -** The topcoat film when applied in accordance with Paragraph 4.3.1.2 shall not show a loss in gloss of greater than 10 units when compared with the same topcoat film applied to bare metal. Gloss determination shall be in accordance with FTMS141 Method 6101.
- 3.3.8 Sanding Characteristics -** The topcoat shall possess satisfactory dry-sanding characteristics when scuff sanded with a #400 wet or dry sand paper. The material shall not clog the paper, nor shall there be any gouging or deep scratches in the top coat.
- 3.3.9 Coating Anchorage for Primer -** Grades I or II when prepared as specified in Paragraph 4.3.1.2 shall show satisfactory adhesion to the primer when tested as specified in Paragraph 4.4.11.

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PROCUREMENT SPECIFICATION NONE	TITLE TOPCOAT, WATER REDUCIBLE	CLASSIFICATION Specification
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