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AEROSPACE MATERIAL SPECIFICATION

SAE AMS 3694A

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Superseding AMS 3694

AERODYNAMIC SMOOTHING COMPOUND, FLEXIBLE -55° to +130°C (-65° to +270°F)

This specification has been declared "NONCURRENT" by the Aerospace Materials Division, SAE, as of October 2, 1990. It is recommended, therefore, that this specification not be specified for new designs.

This cover sheet should be attached to the initial issue of the subject specification.

"NONCURRENT" refers to those materials which have previously been widely used and which may be required on some existing designs In the future. The Aerospace Materials Division does not recommend these as standard materials for future use in new designs. Each of these "NONCURRENT" specifications is available from SAE upon request.

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1. SCOPE:

1.1 Form This specification covers a two-component air-curing resin-baue material in the form of a paste or putty, suitable for application by spatula or putty knife.

1.2 Application: Primarily to fill aircraft skin depression to a maximum depth of 0.250 in. (6.25 mm) and be capable of being painted with subsequent specified coatings. These materials are meant for filling small holes, crevices, and gaps or for smoothing areas requiring thin layers of flexible material to produce the required smoothness on aerodynamic surfaces. Suitable for maintaining adhesion to surfaces subject to service temperatures from -55° to +130°C (-65° to +270°F).

2. APPLICABLE Documents: The following publications form a part of this specification to the extent specified herein. The latest issue of Aerospace Material Specifications (AMS) shall apply. The applicable issue of other documents shall be as specified in AMS 2350.

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

2.1.1 Aerospace Material Specifications:

AMS 2350 - Standards and Test Methods
AMS 2471 - Anodic Treatment of Aluminum Alloys, Sulfuric Acid Process, Undyed Coating
AMS 2478 - Anodic Treatment of Magnesium Alloys, Acid Type, Full Coat
AMS 2825 - Material Safety Data Sheets
AMS 3020 - Oil, Reference, for "L" Stock Rubber Testing
AMS 3021 - Reference Fluid for Testing Di-Ester (Polyol) Resistant Material
AMS 3821 - Cloth, Type "E" Glass, "B" Stage Epoxy-Resin-Impregnated 181 Style Fabric, Self-Extinguishing
AMS 3024 - Cloth, Type "E" Glass, Finished for Resin Laminates
AMS 4045 - Aluminum Alloy Sheet and Plate, 5.6Zn - 2.5Mg - 1.6Cu - 0.26Cr (7075; -T6 Sheet, -T651 Plate)
AMS 4377 - Magnesium Alloy Sheet and Plate, 3.OA1 - 1.0Zn (AZ31B-H24)
AMS 4911 - Titanium Alloy Sheet, Strip, and Plate, 6A1 - 4V, Annealed
AMS 5520 - Steel Sheet, Strip, and Plate, Corrosion Resistant 17Cr - 7.1Ni - 1.1Al

2.2 ASTM Publications: Available from American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

ASTM D412 - Rubber Properties in Tension
ASTM D471 - Rubber Property - Effect of Liquids
ASTM D1210 - Fineness of Dispersions of Pigment-Vehicle Systems
ASTM D1824 - Apparent Viscosity of Plastisols and Organosols at Low Shear Rates by Brookfield Viscometer
ASTM D2240 - Rubber Property - Durometer Hardness
ASTM D3182 - Rubber - Materials, Equipment, and Procedures for Mixing Standard Compounds and Preparing Standard Vulcanized Sheets
ASTM D3359 - Measuring Adhesion by Tape Test
ASTM STP 500 - Gardner/Sward Paint Testing Manual

2.3 U.S. Government Publications: Available from Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120.

2.3.1 Federal Specifications:

QQ-A-250/12 - Aluminum Alloy 7075, Plate and Sheet
QQ-M-44 - Magnesium Alloy Plate and Sheet (AZ31B)
TT-I-735 - Isopropyl Alcohol
TT-M-261 - Methyl Ethyl Ketone, Technical
TT-P-1757 - Primer Coating, Zinc Chromate Low Moisture Sensitivity
TT-R-248 - Remover, Paint and Lacquer, Solvent Type
TT-T-266 - Thinner, Dope and Lacquer (Cellulose Nitrate)
CCC-C-440 - Cheese Cloth
PPP-P-1892 - Paint, Varnish, Lacquer, and Related Materials, Packaging, Packing, and Marking of

2.3.2 Federal Standards:

Federal Test Method Standard No. 141 - Paint, Varnish, Lacquer, and Related Materials, Methods of Inspection, Sampling , and Testing

2.3.3 Military Specifications:

MIL-Y-1140 - Yarn, Cord, Sleeving, Cloth, and Tape - Glass
MIL-H-5606 - Hydraulic Fluid, Petroleum Base; Aircraft, Missile, and Ordnance
MIL-L-7808 - Lubricating Oil, Aircraft Turbine Engine, Synthetic Base
MIL-P-7962 - Primer Coating, Cellulose-Nitrate Modified Alkyd Type, Corrosion-Inhibiting, Fast-Drying (For Spray Application over Pre-Treatment Coating)
MIL-A-8625 - Anodic Coatings, for Aluminum and Aluminum Alloys
MIL-T-9046 - Titanium and Titanium Alloy, Sheet, Strip and Plate
MIL-R-9300 - Resin, Epoxy, Low-Pressure Laminating
MIL-P-23377 - Primer Coating, Epoxy Polyamide, Chemical and Solvent Resistant
MIL-S-25043 - Steel Plate, Sheet, and Strip, 17-7PH, Corrosion Resistant, Precipitation Hardening
MIL-M-45202 - Magnesium Alloy, Anodic Treatment of
MIL-R-81294 - Remover, Paint, Epoxy and Polyurethane Systems
MIL-H-83282 - Hydraulic Fluid, Fire Resistant, Synthetic Hydrocarbon Base, Aircraft

3. TECHNICAL REQUIREMENTS:

3.1 Material: The compound shall be formulated to comply with the air pollution requirements of the area in which it is to be used.

3.1.1 Base Resin: Shall be a chemically cured elastomeric polysulfide, polyurethane, or epoxy compound suitably modified and filled to produce a product which meets the requirements specified herein when mixed and cured in accordance with manufacturer's instructions. The base resin may be pigmented with aluminum powder.

3.1.2 Curing Solution: Shall be an adducted isocyanate amine or other compound capable of reacting with the base resin to form a chemically cured elastomeric compound as specified in 3.1.1 and shall be supplied in a separate container.

3.1.3 Appearance: The compound shall be free of skins, lumps, grit, and foreign contaminants and shall be easily mixed to a smooth, homogenous condition as-received, after mixing with curing solution, during pot life, and after one year of storage unmixed. The compound shall be free of skins, lumps, and grit after application.

3.1.4 Odor and Toxicity: Neither the odor of the base material, the curing solution, nor the mixed fairing compound shall cause discomfort to the operator during mixing, applying, or curing of the compound. When used for the intended purpose, the compound shall have no adverse effect on the health of personnel during mixing, use, or curing (See 4.6.1).

3.1.5 Storage Life: The compound shall meet the requirements of this specification when tested at any time up to 12 months after date of shipment from the manufacturer provided it has been stored at a maximum temperature of 32°C (90°F) in the original, full, closed container.

3.1.6 Base Compound Identification: The infrared spectrophotometer curve of the base compound shall be determined on the preproduction sample and shall be typical of the resin compound from which manufactured.

3.2 Nonvolatile Content of Unmixed Compound Components: The nonvolatile content of the base compound and curing solution shall be determined separately. That of the base compound shall not vary from the preproduction value established as in 4.4.1 by more than ±2%, determined in accordance with 4.5.2. The nonvolatile content of the curing solution shall be determined in the same manner unless it contains a volatile reactive compound, such as a low molecular weight amine, in which case the curing solution content shall be determined by a test procedure agreed upon by purchaser and vendor.

3.3 Properties of Mixed but Uncured Compound: The base compound shall be mixed with the supplied curing solution in accordance with manufacturer's recommendation. The mixed but uncured compound shall conform to the following requirements; tests shall be performed in accordance with specified test methods, insofar as practicable:

3.3.1 Fineness of Grind: The compound shall have a minimum grind value of 4 on the FSPT Scale, determined in accordance with ASTM D1210, Gardner/Sward method.

3.3.2 Color: The color of the mixed compound shall be typical of the pigments and materials used, and shall be essentially equivalent to the color of the approved preproduction material.

3.3.3 Viscosity: The mixed compound shall be a uniform paste or putty having viscosity of 6,000 - 18,000 poises (600 - 1,800 Pa's), determined in accordance with 4.5.3.

3.3.4 Weight Per Unit Volume: Shall be not more than 15 lb per gal (1.8 kg/L) and shall not vary from the preproduction value by more than ±0.5 lb per gal (±0.06 kg/L), determined in accordance with ASTM STP 500, using a Gardner/Sward Monk Cup.

3.3.5 Pot Life: There shall be no skinning or gelling after the mixed compound has been allowed to stand for not less than 20 min. at not higher than 32°C (90°F), determined in accordance with 4.5.4.

3.3.6 Cure Time:

3.3.6.1 The mixed and applied compound shall cure within the following maximum time periods, determined in accordance with 4.5.5; low humidity will extend cure time:

3.3.6.1.1 Cure Time to Sand or Tack-Free: 24 - 48 hr at 25°C ± 1 (77°F ± 2).

3.3.6.1.2 Cure Time to Resist Fluids: 72 - 168 hr at 25°C ± 1 (77°F ± 2).

3.3.6.1.3 Complete Cure: 168 hr at 25°C ± 1 (77°F ± 2).

3.4 Properties of Cured Compound: The cured compound shall conform to the following requirements; tests shall be performed in accordance with specified test methods on panels prepared as specified in 4.5.1:

3.4.1 Hardness: The applied compound, cured as specified in 3.3.6.1.3, shall have a Durometer A hardness of 25 - 50, determined in accordance with 4.5.6.

3.4.2 Adhesion: The applied and cured compound shall have a peel bond strength of not less than 25 lb per in. (4375 N/m) of width, determined in accordance with 4.5.7. The adhesion shall not depend on primers or adhesion promoters.

3.4.3 Impact Resistance: The applied and cured compound shall not crack, split, spall, or lose adhesion when subjected to direct impact of 80 in.-lb (9.0 N·m), determined in accordance with 4.5.8.

3.4.4 Tensile Strength: Mixed and cured compound shall have average tensile strength not lower than 150 psi (1.05 MPa).

3.4.5 Elongation: Mixed and cured compound shall have average elongation not lower than 150%.

3.4.6 Heat Resistance: The applied and cured compound shall exhibit no blistering, cracking, powdering, or loss of adhesion when exposed to 130°C ± 5 (270°F ± 9), determined in accordance with 4.5.11.

3.4.7 Low-Temperature Resistance: The applied and cured compound shall show no loss of adhesion and no cracking after exposure at -55°C ± 1 (-65°F ± 2), determined in accordance with 4.5.12.

3.4.8 Fluid Resistance: The applied and cured compound shall withstand immersions in one fluid from each of the following at all temperatures from 25° to 85°C (77° to 185°F), except water, without softening or loss of adhesion, determined in accordance with 4.5.11. The water immersion shall be at 25°C ± 1 (77°F ± 2). Loss of adhesion which is obviously caused by contamination of the test panel surface, such as the presence of oil, grease, or other contaminant, shall not be cause for rejection.

4.2 Classification of Tests:

4.2.1 Acceptance Tests: Tests to determine conformance to the following requirements are classified as acceptance tests and shall be performed on each lot:

Requirement	Paragraph Reference
Appearance	3.1.3
Odor and Toxicity	3.1.4
Nonvolatile Content	3.2
Uncured Compound Properties	3.3
Hardness	3.4.1 Using Class A and D Panels
Adhesion	3.4.2 Using Class A and D Adhesion Panels
Impact Resistance	3.4.3 Using Class A and D Panels
Heat Resistance	3.4.6 Using Class A and B Panels
Fluid Resistance (Water)	3.4.8 Using Class A, D, and E Adhesion Panels
Fluid Resistance (Except Water)	3.4.8 Using Class A and D Adhesion Panels
Paint Stripper Resistance	3.4.9 Using Class A and C Adhesion Panels
Quality	3.5

4.2.2 Preproduction Tests: Tests to determine conformance to all technical requirements of this specification are classified as preproduction tests and shall be performed prior to or on the initial shipment of compound to a purchaser, when a change in material or processing, or both, requires reapproval as in 4.4.2, and when purchaser deems confirmatory testing to be required.

4.2.2.1 For direct U.S. Military procurement, substantiating test data and, when requested, preproduction test material shall be submitted to the cognizant agency as directed by the procuring activity, the contracting officer, or the request for procurement.

4.3 Sampling: Shall be as follows:

4.3.1 For Acceptance Tests: Sufficient compound, but not less than two 1-pt (0.5-L) kits, shall be taken at random from each lot to permit performing all required tests. The number of determinations for each requirement shall be as specified in the applicable test procedure or, if not specified therein, not less than three.

4.3.1-1 A lot of compound shall be all fairing-resin-base-compound produced in a single production run from the same batches of raw materials under the same fixed conditions and submitted for vendor's inspection at one time. A lot shall not exceed 1000 gal (3800 L) and may be packaged in smaller quantities under the basic lot approval provided the lot identification. is maintained.

4.3.1.2 A lot of curing solution shall be all curing solution manufactured in a single production run. One curing solution lot may be used with multiple compound lots and does not require separate testing unless failure of a compound lot is traceable to faulty curing solution.

4.3.1.3 When a statistical sampling plan and acceptance quality level (AQL) for the product have been agreed upon by purchaser and vendor, sampling shall be in accordance with such plan in lieu of sampling as in 4.3.1 and the report of 4.6.1 shall state that such plan was used.

4.3.2 For Preproduction Tests: As agreed upon by purchaser and vendor.

4.4 Approval:

4.4.1 Sample compound shall be approved by purchaser before material for production use is supplied, unless such approval be waived by purchaser. Results of tests on production compound shall be essentially equivalent to those on the approved sample.

4.4.1.1 Provisional approval may be granted pending completion of storage life tests provided the compound has passed all other preproduction tests.

4.4.2 Vendor shall use ingredients, manufacturing procedures, and methods of inspection on production compound which are essentially the same as those used on the approved sample compound. If necessary to make any change in ingredients, in type of equipment for processing, or in manufacturing procedures, vendor shall submit for reapproval a statement of the proposed changes in material or processing, or both, and, when requested, sample compound. Production compound made to the revised procedures shall not be shipped prior to receipt of reapproval.

4.5 Test Methods: All tests shall be conducted under standard test conditions of 25°C ± 1 (77°F ± 2) and relative humidity of 30 - 80%, unless otherwise specified. Tests shall be conducted on four specimens of each class of panel designated for each test, the classes of panels being as defined in 4.5.1.l. Unless otherwise specified, test panels shall be nominally 0.032 in. (0.85 mm) thick and 4 in. (100 mm) square. All test panels shall be prepared as in 4.5.1.2 through 4.5.1.6, except that adhesion test specimens shall have the compound applied as in 4.5.1.5.

4.5.1 Preparation of Test Specimens:

4.5.1.1 Test Panel Materials:

Class A - Bare 7075-T6 aluminum alloy sheet (AMS 4045 or QQ-A-250/12), anodized in accordance with AMS 2471 or MIL-A-8625, Type II.

Class B - AZ31B-H24 magnesium alloy sheet (AMS 4377 or QQ-M-44), anodized in accordance with AMS 2478 or MIL-M-45202, Type II, and primed with primer as specified by purchaser.

Class C - 17-7PH corrosion resistant steel sheet (AMS 5528 or MIL-S-25043), precipitation hardened to Condition TH 1050.

Class D - Ti-6A1-4V titanium alloy sheet (AMS 4911 or MIL-T-9046, Type III, Comp. C), solution heat treated and aged.

Class E - Epoxy-fiberglass laminate of AMS 3821 or of AMS 3824 or MIL-Y-1140, Style 7781 Fabric and MIL-R-9300 resin.

4.5.1.2 Test Panel Cleaning: Immediately prior to application of the fairing compound, each test panel shall be cleaned as specified below. Cleaned panels shall be handled only with clean, white cotton gloves. Panels may be stacked clean-side-to-clean-side or individually wrapped in clean, chemically-neutral paper or equivalent clean film, and shall be used within 8 hr after cleaning. Panels not used within 8 hr shall be recleaned before use.

4.5.1.2.1 Apply clean TT-T-266 lacquer thinner directly to the panel to wet the entire surface. While the surface is wet, scrub thoroughly with clean CCC-C-440 cheesecloth saturated with clean lacquer thinner. Wipe dry with clean cheesecloth before the solvent evaporates. Panels which appear to be of questionable quality for any reason shall be discarded. Depending on surface contaminants and purchaser requirements, inhibited alkaline cleaners or other solvents may be specified to remove forming lubricants or other soils.

4.5.1.2.2 Sand an area approximately 2 x 4 in. (50 x 100 mm) with silicon carbide or aluminum oxide abrasive sheet having No. 180 (80 µ m) grit or No. 170 (90 µ m) grit. Remove the sanding residue by wiping with clean cheesecloth dampened with lacquer thinner and reclean as in 4.5.1.2.1.

4.5.1.2.3 Clean the metal screen used in adhesion specimens as specified in 4.5.1.2.1.

4.5.1.3 Mixing of Compound: Prepare the compound for use by mixing the base material and curing solution in the proportions specified by manufacturer.

4.5.1.4 Application of Compound to Test Specimens Except for Adhesion Tests: Apply the compound directly to the entire sanded area of each test specimen in a continuous film 0.060 in. ± 0.005 (1.50 mm ± 0.10) thick.

4.5.1.5 Application of Compound to Adhesion Test Specimens:

4.5.1.5.1 Apply the compound directly to the entire sanded area of each test specimen in a continuous film approximately 0.065 in. (1.60 mm) thick.

4.5.1.5.2 Prepare a strip of metal screen having a tensile strength of at least 100 lb per in. (17.5 kN/m) approximately 3 x 12 in. (75 x 300 mm) of width by cleaning thoroughly and impregnating with compound so that approximately 4 in. (100 mm) on one end is completely covered with compound on both sides by working the compound into and through the screen.

4.5.1.5.3 Place the impregnated end of the screen on the panel leaving a loose unimpregnated end approximately 8 in. (200 mm) long. Smooth the screen down on the layer of fairing compound taking care not to trap air under the screen. Add an additional layer of compound approximately 0.065 in. (1.60 mm) thick over the impregnated screen.

4.5.1.6 Test Specimens for Tensile Properties: Shall be cut from molded test slabs, 0.075 x 6 x 6 in. (2 x 150 x 150 mm) as defined in ASTM D3182.

4.5.1.7 Curing the Compound:Unless otherwise specified, cure the compound on all test panels for 168 hr ± 4 under standard test conditions prior to test.

4.5.2 Nonvolatile Content: The nonvolatile content of the base compound and of the curing solution shall be determined separately in accordance with Federal Test Method Standard No. 141, Method 4041.1, except that the sample size of the base compound shall be 0.75 - 1.25 grams. If the curing solution contains a low molecular weight reactive volatile component, its content shall be determined by recognized test procedures agreed upon by purchaser and vendor.

4.5.3 Viscosity: A standard 1/2-pt (235-mL) can (approximately 3 in. (75 mm) in diameter) shall be filled to within 0.5 in. (12.5 mm) of the top with base compound. The can shall be covered and stored for not less than 8 hr at 25°C ± 1 (77°F ± 2). The specified amount of the curing solution (3.1.2) shall then be added and mixed thoroughly for 3 min. ± 0.25 by slow stirring and the can reclosed and allowed to stand for 10 min. ± 1. The viscosity, in poises, shall be determined in accordance with ASTM-D1824 using a suitable model of the Brookfield viscometer, with a No. 7 spindle at 2 revolutions per minute. The viscometer shall be run in the mixed compound for 60 sec ± 5 before taking the first reading.

4.5.4 Rot Life: A volume of base compound and curing solution not exceeding 1/2 pt (235 mL) shall be mixed in the ratio specified by the manufacturer in a suitable container, recording the time the mixing begins. At 2-min. intervals, spread a portion of the mixed compound on any clean, suitable surface, using a spatula, squeegee, or putty-knife. Examine the spread compound for evidence of gelation when spreading. Record as the pot life the time for gelation to appear.

4.5.5 Curing Time: Class A panels shall have the surface of the compound sanded with not less than 50 strokes using No. 180 (80 µm) grit or No. 170 (90 µm) grit silicon carbide or aluminum oxide abrasive sheet. Clogging of the abrasive or rolling of the compound are indications of an uncured material.

4.5.6 Hardness: Shall be determined in accordance with ASTM D2240 on Class A and D test panels, or plied tensile slabs (4.5.1.6).

4.5.7 Adhesion: Adhesion of the compound to the substrate materials shall be determined as follows on all classes of test panels except as modified by 4.2.1 for acceptance testing, using the adhesion specimens shown in Fig. 1:

4.5.7.1 At the end of the curing time, cut two strips, each 1.0 in. (25 mm) wide, lengthwise of each panel, through the fairing compound and screen to the panel, continuing completely along the unimpregnated portion of the screen.

4.5.7.2 Clamp the loose end of the strip of screen in one jaw of a suitable recording tensile testing machine and the corresponding end of the panel in the other jaw, in such a manner that the screen will make a 180 deg angle at the separation point.

4.5.7.3 Separate the jaws at a rate of 2 in. (50 mm) per min., recording the load continuously over the length of the test specimen separation.

4.5.7.4 Determine the numerical average of the peak loads recorded as the peel strength of the compound. If the compound separates cohesively and does not separate from the panel surface or if the screen fails at 25 lb per in. (4400 N/m) of width or over, the peel strength shall be reported as greater than 25 lb per in. (4400 N/m) of width.

4.5.7.5 Separation of the fairing compound from the panel at less than 25 lb per in. (4400 N/m) of width constitutes failure.

4.5.8 Impact Resistance: Class A and D panels shall be placed coated side up in a horizontal position on the Gardner impact tester illustrated in Fig. 2, or equivalent, as defined in ASTM STP 500 (See 8.1.3). The impact rod shall be raised to the 50 in.-lb (5.6 N•m) mark on the scale and released. Visually examine the compound for cracks. Apply pressure sensitive adhesive tape (See 8.1.4) with aggressive tack over the impact area, pressing down with heavy thumb pressure in accordance with ASTM D3359. Remove the tape in one abrupt motion. There shall be no transfer of compound or particles of the compound to the tape.

4.5.9 Tensile Strength: Shall be determined using dumbbell specimens and procedures in accordance with ASTM D412, Die C.

4.5.10 Elongation: Shall be determined using dumbbell specimens and procedures in accordance with ASTM D412, Die C.

4.5.11 Heat Resistance: Class A, B, C, and D panels shall be placed in a circulating-air oven and maintained at 130°C ± 5 (270°F ± 9) for 96 hr ± 2. The panels shall be removed, cooled undisturbed to standard test conditions, and flexed rapidly, with the coated side outside (in tension), over a mandrel with a 4.00 in. ± 0.01 (100 mm ± 0.2) diameter which has been conditioned at the same temperature. Panel evaluation after flexing shall include adhesion, powdering, and resistance to cracking as evaluated in 4.5.8,

4.5.12 Low-Temperature Resistance: Class A, B, C, and D panels shall be cooled in air to -55°C ± 1 (-65°F ± 2) and held for not less than 5 hours. Immediately after removal from the cold box, each panel shall be flexed, compound coated side outside (in tension), over a mandrel with a 4.00 in. ± 0.01 (100 mm ± 0.2) diameter which has been conditioned and maintained at the soaking temperature. Panel evaluation after flexing shall include adhesion, powdering, and resistance to cracking as evaluated in 4.5.8.

4.5.13 Fluid Resistance: Adhesion test panels of the classes listed below shall be tested in accordance with Federal Test Method Standard No. 141, Method 6011, using fluids noted below and exposure times of 168 hr ± 1. Duplicate sets of panels shall be tested at 25°C ± 1 (77°F ± 2) and 85°C ± 5 (185°F ± 9) except for the water exposure, which shall be at 25°C ± 1 (77°F ± 2). Immediately after exposure, the panels shall be dried sufficiently to perform further testing, examined for softening or any evidence of deterioration, and tested for adhesion strength in accordance with 4.5.7.

	Fluid	Class of Panel
4.5.13.1	ML-H-83282, MIL-H-5606, AMS 3020, or ASTM Oil No. 3	A and D

4.5.13.2	MIL-L-7808, AMS 3021, or SAE Ester Test Fluid No. 2 (See 8.1.1)	A and D
4.5.13.3	Tri-n-butyl Phosphate	A and D
4.5.13.4	Distilled Water	A, D, and E

4.5.14 Paint Stripper Resistance: Class A and B adhesion panels shall be immersed for 16 hr ± 2 under standard test conditions in each of the paint strippers specified in 3.4.9. At the conclusion of the immersion period, remove the panels, wash all stripper residue from the surface with TT-M-261 methyl ethyl ketone (MEK) or equivalent and dry with clean cheesecloth. Allow the test specimens to dry under standard test conditions for 2 hr ± 0.5 and abrade the surface of the compound by making 2 passes in one direction with No. 180 (80 µm) grit or No. 170-(90 µm) grit silicon carbide or aluminum oxide abrasive paper. Measure the remaining compound thickness and hardness and test the panel for adhesion in accordance with 4.5.7.

4.5.15 Finish System Primer Compatibility:

4.5.15.1 Sand the surface of the compound on one set of Class A panels for each type of finish system primer listed in 3.4.10 to a uniformly smooth, dull condition with No. 180 (80 µm) grit or No. 170 (90 µm) grit abrasive paper. Wipe the sanding dust away with clean cheesecloth wet with solvent (MEK or TT-I-735 isopropyl alcohol) or other cleaner agreed upon by purchaser and vendor. Wipe dry with a clean, dry cloth before the solvent can evaporate. Allow the surface to air dry for not less than 1 hr, protected from contamination, before applying the primer.

4.5.15.2 Apply a single wet coat of each primner to a dry film thickness of 0.60 - 0.90 mil (15 - 22 µm) on separate panels and allow the primer to cure for 168 hr ± 4 under standard test conditions, protected from contamination, prior to further evaluation.

4.5.13.3 Examine the cured primer surface for evidence of noncompatibility such as wrinkling, blistering, or flaking. Test the primer for adhesion to the compound substrate in accordance with ASTM D3359, Method A. Loss of adhesion as evidenced by primer removal from the compound surface constitutes failure.

4.6 Reports: The vendor of compound shall furnish with each shipment three copies of a report showing the results of tests to determine conformance to the acceptance test requirements and stating that the compound conforms to the other technical requirements of this specification. This report shall include the purchase order number, AMS 3694, vendor's material designation, lot numbers of base compound and curing solution, date of manufacture, and quantity.

4.6.1 A material safety data sheet conforming to AMS 2825 or equivalent shall be supplied to each purchaser prior to, or concurrent with, the report of preproduction test results or, if preproduction testing be waived by purchaser, concurrent with the first shipment of compound for production use. Each request for modification of compound or curing solution formulation shall be accompanied by a revised data sheet for the proposed formulation.

4.7 Reinspection: All unused compound from a lot shall be reinspected in accordance with 4.2.1 after one year from date of shipment from the manufacturer. Compound passing the reinspection may have the storage life extended for an additional 6 months. A lot of compound may be so reinspected twice. Any compound failing reinspection tests or exceeding two years from date of manufacture shall be discarded.

4.8 Resampling and Retesting: If any specimen used in the above tests fails to meet the specified requirements, disposition of the compound may be based on the results of testing three additional specimens for each original nonconforming specimen. Failure of any retest specimen to meet the specified requirements shall be cause for rejection of the compound represented and no additional testing shall be permitted. Results of all tests shall be reported.

5. PREPARATION FOR DELIVERY:

5.1 Packaging and Identification:

5.1.1 Packaging: The smoothing compound shall be supplied in kit form as the resin-base formulation plus a separate container of curing solution. The size of kit shall be as ordered, but not larger than 5 gal (20 L), and shall be based on the quantity of base compound with sufficient curing solution to activate the entire quantity of base compound, the curing solution being supplied in a separate container attached to the base compound container. The containers shall be metal of a type suitable for the purpose intended.

5.1.2 Each container shall be identified by an attached label using characters of such size as to be legible and which will not be obliterated by normal handling. Each label shall show not less than the following information:

5.1.2.1 Base Compound:

AERODYNAMIC SMOOTHING COMPOUND, FLEXIBLE, BASE COMPOUND, -55° to +130°C (-65° to +270°F)
AMS 3694
MANUFACTURER'S MATERIAL DESIGNATION _____
DATE OF MANUFACTURE _____
COMPOUND LOT NUMBER _____
NET CONTENT _____
RECOMMENDED MIXING INSTRUCTIONS _____