AERONAUTICAL MATERIAL SPECIFICATION

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ADHESIVE; ELASTIC
Fuel and Oil Resistant - Buna N Type

1. ACKNOWLEDGMENT: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.

2. APPLICATION: Primarily intended for effecting fuel and oil resistant, elastic bonds between fabric or synthetic rubber and plastics or metal.

3. MATERIAL: This material shall consist of a Buna N synthetic rubber base stock dispersed or dissolved in suitable solvents to form a homogeneous product, ready for use without further addition of solvent or other additives.

4. TECHNICAL REQUIREMENTS: (a) General.-

(1) Brushing Characteristics.- Unless otherwise specified, the as received material shall be suitable for application by brushing.

(2) Weathering.- When specified, the adhesive shall have weather resistance acceptable to the purchaser, as determined by a procedure agreed upon by the purchaser and vendor.

(3) Corrosion.- The material shall not have corrosive or other deleterious effect on materials with which it is normally used.

(4) Skinning.- Skinning shall be absent in a one-quarter filled closed container after 48 hours.

(5) Package Stability.- The material shall not be deleteriously affected by six months' storage in unopened shipping containers at room temperature.

(6) Toxicity.- The normal application of the material shall create no health hazard.

(b) Physical Properties.- The material shall conform to the following:

Property	Value	Test Method	
		Basic Method	Specimen Materials
Adhesion Strength in Tension, psi, min avg	150	ASTM D816-46T[a]	Aluminum Alloy to 0.062 ±0.005 in. AMS 3208 synthetic rubber
Adhesion Strength in Shear (Aluminum to Synthetic Rubber), psi, min avg	150	ASTM D816-46T[a]	0.064 in. clad aluminum alloy to 1/16 in. AMS 3208 synthetic rubber

Property	Value	TEST METHOD Basic Method	Specimen Materials
Adhesion Strength in Shear (Aluminum to Cotton Webbing), psi, min avg	175	ASTM D816-46T[a]	0.064 in. clad aluminum alloy to 1 in. cotton webbing, U. S. Army Spec. 6-185, Type IIa
Adhesion Strength, Stripping Method, lb, min avg	3	ASTM D816-46T[a]	0.064 in. clad aluminum alloy to 1 in. cotton webbing, U. S. Army Spec. 6-185, Type IIa
Bonding Range (after 3-20 min open drying time), psi, min	30	ASTM D816-46T[a]	0.064 in. clad aluminum alloy to 1/16 in. AMS 3208 synthetic rubber
Aromatic Fuel Resistance, reduction from original avg shear value, percent, max	40	ASTM D816-46T[a]	0.064 in. clad aluminum alloy to 1 in. cotton webbing, U. S. Army Spec. 6-185, Type IIa
Water Resistance, Reduction from original shear value percent, max	35	ASTM D816-46T[a]	0.064 in. clad aluminum alloy to 1 in. cotton webbing, U. S. Army Spec. 6-185, Type IIa
Oil Resistance, Reduction from original shear value, percent, max	20	ASTM D816-46T[a]	0.064 in. clad aluminum alloy to 1 in. cotton webbing, U. S. Army Spec. 6-185, Type IIa
Cold Flow (10 lb weight for one week)	No Failure	ASTM D816-46T[a]	0.064 in. clad aluminum alloy to 1/16 in. AMS 3208 synthetic rubber
Softening Point, deg Fahr, min	190	ASTM D816-46T[a]	0.064 in. clad aluminum alloy to 1/16 in. AMS 3208 synthetic rubber

NOTE: [a] Use the specified ASTM tests with the following exceptions:

(1) Roughen 100% of the bond area of the synthetic rubber only, using a wire wheel power buffer.

(2) In making the bond place cemented parts together and apply 250-450 psi pressure for one minute to insure that 100% of the area is bonded.

(3) Allow a 48-hr joint conditioning time at room temperature with no pressure before testing bonds. (Does not apply to Bonding Range Test.)

(4) Test a minimum of 5 specimens for each test. Report average as value obtained. (Does not apply to Softening Point or Cold Flow Tests.)

(c) Test Method.-

(1) Aromatic Fuel Resistance.- Immerse the adhesion-strength-in-shear specimens for 48 hr in ASTM Reference Fuel No. 2 at room temperature and test immediately after removal.