

AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
29 West 39th Street
New York City

AMS 3685

Issued 12/1/47

Revised

ADHESIVE; ELASTIC Fuel and Oil Resistant - Buna N Type

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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:

<u>Property</u>	<u>Value</u>	<u>Test Method</u>	
		<u>Basic Method</u>	<u>Specimen Materials</u>
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

<u>Property</u>	<u>Value</u>	<u>Basic Method</u>	<u>TEST METHOD</u>	<u>Specimen Materials</u>
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.