AERONAUTICAL MATERIAL SPECIFICATION

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

AMS 3274 A

Issued 12-1-51
Revised 12-1-53

SYNTHETIC RUBBER SHEET, NYLON FABRIC REINFORCED
Aromatic Fuel Resistant

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

2. FORM: Sheet, strip, and molded shapes.

3. APPLICATION: Primarily for diaphragms in aircraft power plant fuel supply and control systems.

4. MATERIAL AND FABRICATION: Basis material shall be either a plain weave, or 2-up and 1-down twill weave, nylon fabric coated on both sides, unless otherwise specified, with a Buna-N type of synthetic rubber compound. Thickness of coating shall be substantially uniform on both sides of the sheet.

5. TECHNICAL REQUIREMENTS:

5.1 General:

5.1.1 Weathering: When specified, the product shall have weather resistance acceptable to the purchaser as determined by a procedure agreed upon by purchaser and vendor.

5.1.2 Corrosion: The product shall not have a corrosive effect on other materials when exposed to conditions normally encountered in service. Discoloration of metal shall not be considered objectionable.

5.2 Properties: The product shall conform to the following requirements; tests shall be performed on the product supplied and in accordance with listed methods, insofar as practicable.

5.2.1 As Received:

5.2.1.1 Breaking Strength, Grab Method, lb, min — ASTM D751-46T

Nominal Thickness, in.	Warp	Filling
0.008	35	35
0.010, 0.013) 0.017, 0.020)	65	60
0.025	300	300
0.030	65	60
0.050	300	300

5.2.1.2 Tear Resistance, Trapezoid Method, lb, min — ASTM D751-46T

Nominal Thickness, in.	Warp	Filling
0.008, 0.010, 0.013) 0.017, 0.020)	2.0	2.0
0.025	25.0	25.0
0.030	5.0	5.0
0.050	25.0	25.0

5.2.1.3 Bursting Strength, Diaphragm Bursting Tester, psi, min — ASTM D751-46T

Nominal Thickness, in.	
0.008	75
0.010, 0.013) 0.017, 0.020)	135
0.025	200
0.030	135
0.050	200

5.2.1.4 Scrub Resistance, 200 strokes — No Separation of coating from fabric — Vanderbilt Rubber Handbook, 1948 Edition, pages 433-435

5.2.2 Non-Aromatic Fuel Resistance: (After 24 hr drying at 158 F ± 2) — ASTM D471-52T
Medium: ASTM Ref. Fuel A
Temperature: 70-85 F
Time: 24 hr

5.2.2.1 Volume Change, %
Nominal Thickness, in.

0.008	-20 to +10
Ø 0.010, 0.013, 0.017) 0.020, 0.025, 0.030) 0.050)	-25 to 0

5.2.3 Aromatic Fuel Resistance: (Immediate Deteriorated Properties) — Immerse in ASTM Ref. Fuel B at 70-85 F for 24 hr in accordance with ASTM D471-52T, and test as noted

5.2.3.1 Volume Change, % — ASTM D471-52T
Nominal Thickness, in.

0.008, 0.010) 0.013, 0.017)	0 to +35
0.020, 0.025) 0.030, 0.050)	0 to +40

5.2.3.2	Volume Change on Drying (after 24 hr aromatic fuel immersion) at 158 F ± 2 for 24 hr, % (based on unimmersed volume) Nominal Thickness		ASTM D471-52T
	All	-25 to 0	
5.2.3.3	Scrub Resistance, 200 strokes	No deterioration and no separation of coating from fabric	Vanderbilt Rubber Handbook, 1948 Edition, pages 433-435
5.2.4	Dry Heat Resistance:		Age at 212 F ± 2 for 70 hr in accordance with ASTM D573-48, and test as noted.

5.2.4.1	Breaking Strength, Grab Method, lb, min			ASTM D751-46T
	Nominal Thickness, in.	Warp	Filling	
	0.008	35	35	
	0.010, 0.013)	65	60	
	0.017, 0.020)			
	0.025	300	300	
	0.030	65	60	
	0.050	300	300	
5.2.4.2	Bursting Strength, Diaphragm Bursting Tester, psi, min Nominal Thickness, in.			ASTM D751-46T
	0.008	75		
	0.010, 0.013)	135		
	0.017, 0.020)			
	0.025	200		
	0.030	135		
	0.050	200		
5.2.4.3	Surface Hardening	None		
5.2.4.4	Bend (flat)	No Cracks		
5.2.5	Low Temperature Brittleness:			ASTM D736-46T (See note) Temperature: -65 F ± 2 Time: 5 hr Specimen to be one thickness of material
5.2.5.1	As Received	Pass		
5.2.5.2	After Aromatic Fuel Aging Without Drying	Pass		

Note. To be specified only until satisfactory replacement test and values can be established.