AERONAUTICAL MATERIAL SPECIFICATION

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SYNTHETIC RUBBER SHEET, NYLON FABRIC REINFORCED
Aromatic Fuel Resistant

1. ACKNOWLEDGMENT: A vendor shall mention this specification number 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.

Property	Value		Test Method
5.2.1 As Received:			ASTM D751-46T
Breaking Strength, Grab Method, lb, min	Warp	Filling	
Nominal Thickness, in.			
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	

Property	Value		Test Method
Tear Resistance, Trapezoid Method, lb, min	Warp	Filling	
Nominal Thickness, in.			
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	
Bursting Strength, Diaphragm Bursting Tester, psi, min			
Nominal Thickness, in.			
0.008	75		
0.010, 0.013) 0.017, 0.020)	135		
0.025	200		
0.030	135		
0.050	200		
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 D471-49T
Volume Change, %			
Nominal Thickness, in.			
0.008	-20 to +10		Medium: ASTM Fuel No. 1
0.010, 0.013, 0.017) 0.020, 0.025, 0.030) 0.050)	-10 to + 5		Temperature: 70-85 F Time: 24 hr
5.2.3 Aromatic Fuel Resistance: (Immediate Deteriorated Properties)			Immerse in ASTM Fuel No. 2 at 70-85 F for 24 hr in accordance with ASTM D471-49T, and test as noted
Volume Change, %			ASTM D471-49T
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 Cont'd.

Property	Value	Test Method
Volume Change on Drying (after 24 hr aromatic fuel immersion) at 158 F ± 2 for 24 hr, % (based on unimmersed volume) Nominal Thickness, in.		ASTM D471-49T
All	0 to -25	
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.

Breaking Strength, Grab Method, lb, min Nominal Thickness, in.	Warp	Filling	ASTM D751-46T
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	

Bursting Strength, Diaphragm Bursting Tester, psi, min Nominal Thickness, in.		ASTM D751-46T
0.008	75	
0.010, 0.013) 0.017, 0.020)	135	
0.025	200	
0.030	135	
0.060	200	
Surface Hardening	None	
Bend (flat)	No Cracks	

5.2.5 Low Temperature Brittleness:		ASTM D736-46T (Note)
As Received	Pass	Temperature: -65 F ± 2
After Aromatic Fuel Aging Without Drying	Pass	Time: 5 hr Specimen to be one thickness of material

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