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AEROSPACE MATERIAL SPECIFICATIONS

AMS 3274D

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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, and shapes molded and cured from partly cured sheet.
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 nitrile type of synthetic rubber compound. Thickness of coating shall be substantially equal and uniform on both sides of the sheet.
5. TECHNICAL REQUIREMENTS:
 - 5.1 General:
 - 5.1.1 Color: Shall be black.
 - 5.1.2 Surface Cleanliness: Material having evenly dusted surfaces will be acceptable. When specified, surfaces shall be capable of being cleaned without damage to the material and shall be cementable.
 - 5.1.3 Weathering: When specified, the product shall have weather resistance acceptable to the purchaser as determined by a procedure agreed upon by purchaser and vendor.
 - 5.1.4 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 the issue of specified ASTM methods listed in the latest issue of AMS 2350, insofar as practicable.

5.2.1 As Received:

5.2.1.1 Breaking Strength,

ASTM D751

Grab Method, lb, min

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

5.2.1.2 Tear Resistance, Trapezoid

ASTM D751

Method, lb, min

Nominal Thickness, in.

Warp Filling

0.008, 0.010, 0.013)

0.017, 0.020)

0.025

0.030

0.050

2.0

2.0

25.0

25.0

5.0

5.0

25.0

25.0

5.2.1.3 Bursting Strength, Diaphragm

ASTM D751

Bursting Tester, psi, min

Nominal Thickness, in.

0.008

75

0.010, 0.013)

135

0.017, 0.020)

0.025

500

0.030

135

0.050

500

5.2.1.4 Adhesion, lb per in. width, min

7

ASTM D751

5.2.2 Non-Aromatic Fuel Resistance:

ASTM D471

Ø (After 24 hr drying at $70\text{ C} \pm 1$ ($158\text{ F} \pm 1.8$))

Medium:

ASTM Ref. Fuel A

Temperature: 20 - 30 C

(68 - 86 F)

Time:

24 hr

5.2.2.1 Volume Change, %

Nominal Thickness, in.

0.008

-20 to +10

0.010, 0.013, 0.017)

-25 to 0

0.020, 0.025, 0.030)

0.050)

5.2.3 Aromatic Fuel Resistance:

ASTM D471

Ø (Immediate Deteriorated Properties)

Medium:

ASTM Ref. Fuel B

Temperature: 20 - 30 C

(68 - 86 F)

Time:

24 hr

5.2.3.1 Volume Change, %

Nominal Thickness, in.

0.008, 0.010)

0 to +35

0.013, 0.017)

0.020, 0.025)

0 to +40

0.030, 0.050)

5.2.3.2 Volume Change on Drying

(after 24 hr aromatic fuel

immersion) at $70\text{ C} \pm 1$ (158 F ± 1.8) for 24 hr, %

(based on unimmersed volume)

-25 to 0

5.2.4 Dry Heat Resistance:

ASTM D573

Temperature: $100\text{ C} \pm 1$
($212\text{ F} \pm 1.8$)

Time: 70 hr

5.2.4.1 Breaking Strength,
Grab Method, lb, min
Nominal Thickness, in.

ASTM D751

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

5.2.4.2 Bursting Strength, Diaphragm
Bursting Tester, psi, min
Nominal Thickness, in.

ASTM D751

0.008	75
0.010, 0.013)	135
0.017, 0.020)	500
0.025	135
0.030	500
0.050	

5.2.4.3 Surface Hardening

None

5.2.4.4 Bend (flat)

No cracking

Ø 5.2.5 Low Temperature Brittleness:

ASTM D2137

5.2.5.1 As Received

Pass

Temperature: $-55\text{ C} \pm 1$
($-67\text{ F} \pm 1.8$)
Time: 10 min.

5.2.5.2 After Aromatic Fuel Aging
Without Drying

Pass

6. QUALITY: The product shall be uniform in quality and condition, clean, smooth, and free from foreign materials and from imperfections detrimental to fabrication, appearance, or performance of parts.

7. THICKNESSES AND TOLERANCES: Unless otherwise specified, sheet shall be supplied in nominal thicknesses of 0.008, 0.010, 0.013, 0.017, 0.020, 0.025, 0.030, and 0.050 in., as ordered; tolerances shall be as specified below.

7.1 Thickness:

Ø

Nominal Thickness, Inch	<u>Tolerance, Inch</u>	
	Plus	Minus
0.008	0.002	0.001
0.010, 0.013, 0.017)	0.002	0.002
0.020, 0.025, 0.030)		
0.050	0.003	0.003

Ø 7.2 Width: ± 1.0 inch.