



ENGINEERING DATA SHEET

GRADE: SPAULDITE® T-827 LAMINATE SHEET

Reprint of: 0796 Issued: 0706

Spaldite® T-827 is a fine weave cotton (linen) reinforced phenolic resin laminate. This laminate combines physical toughness with excellent machining properties. It can be fabricated into parts with very smooth edges and close tolerance dimensions. While not as rugged as laminate made with a coarser weave fabric, this grade has very good dielectric and flexural strengths. Spaldite® T-827 is U.L. listed @ 85°C Elec. And Mech. -1/32"; 115°C Elec., 125°C Mech. -1/16. File No. E6147 (M). This grade exceeds NEMA LE/L and Mil-I-24768/13 type FBE requirements.

MAJOR FEATURES

- Smooth Machined Edges
- Good Flexural Strength
- Impact Strength
- Good Physical Toughness
- Low Moisture Absorption
- Good Dielectric Strength

Applications

Used where the basic benefits of cotton fabric reinforced laminates are needed providing physical strength, dimensional stability, electrical insulation and excellent machining.

Example: Terminal boards and relay spacers.
Maximum continuous operating temperature of 265°F (129°C) depending on the application.

Spaldite® Grade T-827 is not recommended for use in strong acids or alkaline solutions.

ELECTRICAL CHARACTERISTICS

T-827 has good dielectric strength and may be used in applications where NEMA LE or Mil-I-24768/13 type FBE would typically be used. Low water absorption contributes to good dielectric strength even during humid conditions.

MECHANICAL CHARACTERISTICS

The flexural, compressive and impact strengths property values of T-827 are indicative of the physical ruggedness of the laminate. It's fine-weave fabric reinforcement provides maximum strength in small cross-sectional areas.

FABRICATION

Grade T-827 is ordinarily machined to shape from the basic sheet form. It is readily fabricated with standard machine tools and can be turned, milled, drilled, shaped and otherwise machined in much the same manner as brass. Surfaces can be ground or sanded. Good machining practices will produce very smooth surfaces, intricate shapes, and close tolerance. In normal punching thickness, this grade can be punched cold or after heating, depending on intricacy of the part and thickness of material.

STANDARD SHEET SIZE 48" x 36"
48" x 48"

COLOR: NATURAL, BLACK

THICKNESS: .015" – 6.00

"To the best of our knowledge the information contained herein is accurate; however, Spaulding Composites Company, Inc. does not accept any liability regarding the accuracy or completeness of such information. Further, such information is based on standard base material and thus may change if the product ordered by purchaser requires further processing of base material by us and/or the purchaser. Purchaser has the sole responsibility in determining the suitability of any material described herein for the use contemplated and the processing of such material by purchaser."



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PROPERTY CHARACTERISTICS

PROPERTY	ASTM TEST METHOD	CONDITIONING & TYPE OF TEST	THICKNESS INCHES	AVERAGE TYPICAL VALUES		INDUSTRY REQUIREMENTS	
				ENGLISH	SI	ENGLISH	SI
ELECTRICAL							
Dielectric Breakdown (Parallel-Taper Pin)	D-229	A (S.T.)	.125	80 kV	80 kV	NR	NR
		A (S.S.)	.125	80 kV	80 kV	≥40 kV	≥40 kV
		D48/50 (S.T.)	.125	11 kV	11 kV	NR	NR
		D48/50 (S.S.)	.125	5.5 kV	5.5 kV	≥3 kV	≥3 kV
Dielectric Strength (Perpendicular)	D-229	A (S.T.)	.125	395 V/mil	15.6 kV/mm	NR	NR
		A (S.S.)	.125	330 V/mil	13.0 kV/mm	NR	NR
Dissipation Factor (1 MHz)	D-229	A	.125	0.047	0.047	≤0.055	≤0.055
		D-24/23	.125	0.063	0.063	≤0.070	≤0.070
Permittivity (1 MHz)	D-229	A	.125	4.90	4.90	≤5.80	≤5.80
		D-24/23	.125	5.10	5.10	≤6.00	≤6.00
MECHANICAL							
Bonding Strength	D-229	A	.500	1,750 lbs	7.78 kN	≥1,600 lbs	≥7.12 kN
		D-48/50	.500	1,700 lbs	7.56 kN	≥1,500 lbs	≥6.67 kN
Compressive Strength Flatwise	D-229	A	.125	42.0 ksi	289.6 MPa	NR	NR
Flexural Strength Flatwise	D-229	A			(MPa)		(MPa)
		Lengthwise	.125	25.0 ksi	172.4	≥16.0 ksi	≥110.3
		Crosswise	.125	17.5 ksi	120.7	≥14.0 ksi	≥96.5
Izod Impact Edgewise Notched	D-229	E-48/50					
		Lengthwise	.125	1.5ft-lbs/in	.080 J/mm	≥1.25 ft-lbs/in	≥.067 J/mm
		Crosswise	.125	1.10ft-lbs/in	.059 J/mm	≥1.00 ft-lbs/in	≥.053 J/mm
Tensile Strength	D-229	A					
		Lengthwise	.125	17.0 ksi	117.2 MPa	NR	NR
		Crosswise	.125	8.5 ksi	58.6 MPa	NR	NR
PHYSICAL							
Density	D-792	A	.125	.048 lbs/in ³	1.34 g/cm ³	NR	NR
Rockwell Hardness	D-229	A	.125	M-115	M-115	NR	NR
Water Absorption	D-229	D1-24/23	.125	0.5%	0.5%	≤1.3%	≤1.3%
Flammability	UL 94	A	.031+	HB	HB	HB	HB

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