


Spaulding
 COMPOSITES INC

ENGINEERING DATA SHEET
GRADE: SPAULDITE® ARC-2 LAMINATE SHEET

 Reprint of: 0703 Issued: 1206

Spauldite® Grade ARC-2 is a medium weave cotton fabric (canvas) base phenolic laminate with a high temperature resin. Molybdenum disulfide is incorporated in the resin system to enhance the wear capabilities of the laminate. The fabric is specially treated to enhance its high temperature operating capabilities.

MAJOR FEATURES

- Non-Blistering at Temperatures up to 400°F during Intermittent Periods
- Performs Well under Mechanical Load at 300°F for Extended Periods

APPLICATIONS

Grade ARC-2 was formulated for wear applications at higher temperatures than ordinary canvas reinforced laminates. It can be used for rotor vanes, compressor rings, valve plates and compressor rod oil packing seals.

ELECTRICAL CHARACTERISTICS

Not recommended for electrical use. Grade ARC-4, which is a non-lubricated version of this grade, should be considered when both wear capability and reasonable electrical properties are required.

MECHANICAL CHARACTERISTICS

Grade ARC-2 is a strong, tough laminate intended for non-abrasive wear applications where temperatures may reach as high as 400°F intermittently. It is blister free at higher temperatures and is far superior to NEMA canvas and linen reinforced laminates under these operating conditions.

FABRICATION

Grade ARC-2 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 tolerances. In normal punching thicknesses, this grade can be punched after heating. Temperatures required depend on the intricacy of the part and thickness of material.

STANDARD SHEET SIZE¹: 36" X 59"
 36" X 72"
 48" X 36"
 48" X 48"

COLOR: GREENISH BLACK

THICKNESS: .031" – 2.000"

¹ Contact Customer Service for availability of additional sheet sizes.

"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
MECHANICAL							
Bonding Strength	D-229	A D-48/50	.500 .500	2,200 lbs 1,935 lbs	9.78 kN 8.61 kN	≥ 1,900 lbs ≥ 1,700 lbs	≥ 8.45 kN ≥ 7.56 kN
Compressive Strength (Flatwise)	D-229	A	.125	50.7 ksi	349.7 MPa	NR	NR
Flexural Strength (Flatwise)	D-229	A Lengthwise Crosswise	.125 .125	20.9 ksi 17.9 ksi	144.0 MPa 123.6 MPa	≥ 20.0 ksi ≥ 17.0 ksi	MPa ≥137.9 ≥117.2
Izod Impact Edgewise Notched	D-229	A Lengthwise Crosswise	.125 .125	2.7 ft-lbs/in 2.5 ft-lbs/in	.146 J/mm .132 J/mm	≥ 2.0 ft-lbs/in ≥ 1.8 ft-lbs/in	≥.107 J/mm ≥.096 J/mm
Modulus of Elasticity in Flexure	D-229	A Lengthwise Crosswise	.125 .125	1.3 msi 1.0 msi	8963 MPa 6895 MPa	NR NR	NR NR
Modulus of Elasticity in Flexure	D-229	E-100/150: T-23 Lengthwise Crosswise	.125 .125	1.4 msi 1.1 msi	9653 MPa 7564 MPa	NR NR	NR NR
Tensile Strength	D-229	A Lengthwise Crosswise	.125 .125	15.9 ksi 8.8 ksi	110.0 MPa 60.7 MPa	NR NR	NR NR
PHYSICAL							
Density	D-792	A	-	.051 lbs/in ³	1.42 g/cm ³	NR	NR
Rockwell Hardness	D-229	A	.125	M102	M-102	NR	NR
Thermal Coefficient of Linear Expansion	D-696	A Lengthwise Crosswise	.125 .125	13.3 X 10 ⁻⁶ In/in/°C 21.4 X 10 ⁻⁶ In/in/°C	13.3 X 10 ⁻⁶ cm/cm/°C 21.4 X 10 ⁻⁶ cm/cm/°C	NR NR	NR NR
Water Absorption	D-229	E-1/105+ D1-24/23	.125	1.5%	1.5%	≤2.3%	≤2.3%

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