

Fine Weave Phenolic Sheet F1

This product is made from fine weave cotton fabric which has been specially treated to enhance the machinability and other properties. It has good dimensional stability, wear resistance and low water absorption. Excellent Electrical Properties. Good Impact Resistance, it is however slightly less than the coarser weave grades. This product is commonly used for components with intricate features which need accuracy and a fine machined finish. Typical components include fine toothed gears, cams, geneva wheels, seal retaining rings, actuating arms, insulating sleeves and bushes, components for use at cryogenic temperatures, insulation for low and medium voltages.

Physical Properties (indicative values)

GENERAL PROPERTIES	Test Method	Units	Value
Density	ISO 1183	g/cm ³	1.376
Water absorption	ISO 62	mg	166.9
1.6mm thick	ISO 62	mg	55
3mm thick	ISO 62	mg	70
6mm thick	ISO 62	mg	90
12mm thick	ISO 62	mg	125
MECHANICAL PROPERTIES			
Tensile Strength	ISO 527-4	MPa	87.5
Flexural Stress - Perpendicular to Laminate	ISO 178	MPa	150
Modulus of Elasticity in Flexure	ISO 178	MPa	7448
Impact Strength "Charpy" Parallel	ISO 173/3C	kJ/m ²	21.93
Comp. Strength - Perpendicular	ISO 604	MPa	340
Shearing Strength - Parallel	VDE 0318/2	MPa	50,1
THERMAL PROPERTIES			
Maximum Working Temp.			
Continuous	-	°C	120
Short Term	-	°C	130
Thermal conductivity through laminate	ISO 22007.2	W/(mK)	0.37
Thermal expansion in plane of laminate	ISO 11359	x 10 ⁻⁵ /K	1.9
Specific Heat	-	KJ/(kgK)	1.5
Thermal Classification	-	-	Class E
ELECTRICAL PROPERTIES			
Electric Strength, Perpendicular in Oil at 90°C	IEC60243-1	Kv/mm	6,97
Breakdown Voltage at 90°C in Oil - Parallel	IEC 60243-1	Kv	30
Insulation Resistance after Immersion in Water	IEC 60167	Mohm	6,255
Comparative Tracking Index CTI	IEC 60112	CTI	120
Resistance after immersion in water	ISO 243	Ω	7x10 ⁹

Operating temperature continuously 5000h. From 23°C upwards, the materials' features change in a non-uniform and disproportional way. The quoted limits are indicative and based on a tensile stress of 50% of the value at 23°C.

Operating temperature short period (no load).

The mechanical features decrease with a reduction in temperature and are also influenced by other factors (moisture, etc). The quoted values do not take into consideration impact conditions or heavy loads.

This table, is mainly to be used for comparison purposes. It's a valuable tool to help in the choice of material.

The data listed here falls within the normal range of product properties. However, they aren't guaranteed and shouldn't be used to establish material specification limits nor used alone as the basis of design.

Current British Standards

BS EN 60893-3-4 Type PF CC 203

***Testing & certification to these standards is subject to special enquiry. Standard quality testing is to British Standards.**

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