

M39

SHEET

Composite:	glass cloth – phenolic resin	
Color:	yellow-brown	
Standards:	IEC 893 NEMA LI1	PFGC201 G3

CHARACTERISTICS AND APPLICATIONS

Composite with good mechanical and electrical properties at high temperatures and an excellent -machinability.
M39 has good creep resistance due to the phenolic resin system.

Mechanical properties

Flexural strength	(ISO 178)	310 MPa
Modulus of elasticity	(ISO 178)	12000 MPa
Compressive strength	(ISO 604)	460 MPa
Tensile strength	(ISO 527)	200 MPa

Electrical properties

Electrical strength at 90°C, in oil, perpendicular to laminations	(IEC 243-1)	>5 kV/mm (2 mm)
Break down voltage, at 90°C in oil, parallel to laminations	(IEC 243-1)	> 8 kV (4 mm)

Physical and thermal properties

Density	(ISO 1183)	1,7-1,9 gr/cc
Water absorption	(ISO 62)	< 0,35 %
Thermal conductivity	(ISO 8302)	0,3 W/mK
Linear expansion coefficient	(VDE 0304/2)	10-20 $10^{-6} K^{-1}$
Max working temperature	(ISO 11357-2)	140°C
Flammability	(UL94)	V0 (3 mm)

Fire behaviour

Material and components fire behaviour requirements	EN 45545-2:2013	HL1-HL2-HL3 for set R22 HL1-HL2-HL3 for set R23
Fire behaviour by means of oxygen index	EN ISO 4589-2	Oxygen index > 90%
Fume production - optical density by single chamber test	EN ISO 5659-2	Ds max 9
CIT_{NLP} determination	NF X 70-100-1/2	CIT _{NLP} 0.05

Note: Above listed features are the result of tests performed in FILP internal laboratory and on products obtained from current production. Deviations from average values on these materials may normally occur. Suggestion and indications to final user are provided just to draw user's attention to check the product features on his own. User has to test the product to determine its suitability to the required application.

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