

M53

SHEET

Composite: glass mat –polyester resin

Color: red, white, natural

Standards: IEC 893 UPGM 203
 DIN 7735 HM 2471
 NEMA LI1 GPO3

CHARACTERISTICS AND APPLICATIONS

Composite with good mechanical and dielectric properties at high temperatures . M53 has autoextinguishing properties (V0-UL94) and anti-tracking characteristic. Classified HL1-HL2-HL3 for R22 and for R23 to fire-behaviour requirements as per standard EN 45545-2:2013. Classified in conformity at all levels of risk for electrical materials and electrical components as per standard UNI CEI 1170-3 Ed.2005 + FA 2007.

Mechanical properties

Flexural strenght	(ISO 178)	150 MPa
Modulus of elasticity	(ISO 178)	10000 MPa
Compressive strenght	(ISO 604)	300 MPa
Izod impact strenght	(ISO 108)	35 kJ/m ²
Tensile strenght	(ISO 527)	90 MPa

Electrical Properties

Electrical strenght at 90°C,in oil, perpendicular to lamination	(IEC 243-1)	12 kV/mm	(2 mm)
Break down voltage, at 90°C in oil, parallel to laminations	(IEC 243-1)	35 kV	

Permittivity at 48-62 Hz	(IEC 250)	4,5	
Dissipation factor at 48-62 Hz	(IEC 250)	0,05	
Comparative tracking index	(IEC 60112)	>600 V	
Dry arc resistance	(ASTM D495)	>180 sec.	

Physical and thermal properties

Density	(ISO 1183)	1,8-1,9 gr/cc
Water absorption	(ISO 62)	0,06 %
thermal conductivity	(ISO 8302)	0,3 W/mK
linear expansion coefficient	(VDE 0304/2)	15-30 $10^{-6} K^{-1}$
Max working temperature	(ISO 11357-2)	155°C
Insulating class	(CEI)	F
Flammability	(UL94)	V0

All the details on fire resistance properties can be found in EN 45545-2 and UNI CEI 1170-3 Certificates.

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 material 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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