

Technical Information

VETRESIT^â 300

MATERIAL A laminate consisting of heat-resisting cycloaliphatic epoxy resin reinforced with glass mat.

GENERAL PROPERTIES High mechanical strength in any direction (MR/QR), even at high temperature.

Good electrical properties at high temperature and moisture. High resistance against tracking and chemicals. Low density.

Service temperature up to 155 °C

- APPLICATION**
- For insulating material operating at high mechanical stresses at temperatures up to 155 °C.
 - For mechanical and electrical applications operating at high temperatures.
 - For construction components with multiple mechanical stresses in all directions.
 - Bed plates, cover plates, supports, wedges, spacers, structural components etc.
 - For electrical machines end equipment operating in high voltage and output ranges.
 - For supraconductor applications (cryogenic temperatures).
 - For equipment components in the chemical industry

SUPPLY

Machined Parts

Fabricated and styled according to customer's drawings. Optional varnished (standard: clear).

Sheets and strips

Sheets and strips made of VETRESIT 300 are usually supplied „as pressed“ with a smooth surface.

Sheets	Standard sizes Width x Length (mm)	Thickness h (mm)	
	1225 x 1250	2 - 55	Other sizes supplied on request
1250 x 2450	2 - 55		



MACHINABILITY

VETRESIT 300 can be sawn, milled, turned, drilled or ground. Since glass fibre materials subject machining tools to considerable wearing, very sharp hard metal or preferably diamond tools should be used. The material can be machined dry using a dust and chip vacuum extractor, or wet with a suitable cooling liquid. MICAFIL runs a well equipped machine shop with facilities for producing a wide range of components. Expert joining of VETRESIT parts or combination of VETRESIT with other materials is a speciality of MICAFIL AG.

VETRESIT® 300

	Properties		Standards	Units	Values
Composition	Resin: Epoxy resin (EP)				
	Support: Glass Mat (GM)		ISO 1172	Masse %	≥ 60
	Density		ISO 1183	g/cm ³	1,7 - 2,1
Electrical Properties	Electric strength, ⊥ 50 Hz, 1 min., h = 3 mm	23 °C 90 °C	IEC 243-1	kV/mm	13,5 - 20 13,5 - 20
	Electric strength, ∥ 50 Hz, 1 min., h = 25 mm	23 °C 90 °C	IEC 243-1	kV/mm	2,5 - 4,0 2,5 - 4,0
	Volume resistivity		IEC 93	MΩ • cm	10 ⁶ - 10 ¹⁰
	Surface resistivity		IEC 93	MΩ	10 ⁶ - 10 ¹⁰
	Insulation resistance, wet		IEC 167	MΩ	10 ⁵ - 10 ¹⁰
	Dissipation factor tan δ 50 Hz	23 °C 90 °C	IEC 250		0,02 - 0,05 0,03 - 0,10
	Relative permittivity ε _r 50 Hz	23 °C 90 °C	IEC 250		4,0 - 5,5 4,5 - 6,0
	Comparative tracking index (Test solution A)		IEC 112	CTI	CTI 600
Mechanical Properties	Tensile strength		ISO 527	N/mm ²	≥ 220
	Flexural strength - at RT		ISO 178	N/mm ²	≥ 320
	- at 150 °C			%	≥ 50 ¹⁾
	Compressive strength - at RT	⊥ ∥	ISO 604	N/mm ²	≥ 400 ≥ 200
	Flexural module of elasticity		ISO 178	N/mm ²	13 - 18 · 10 ³
	Impact strength	⊥ ∥	ISO 179	kJ/m ²	≥ 150 ≥ 100
	Impact strength, notched specimen (Charpy)	⊥ ∥	ISO 179	kJ/m ²	≥ 80 ≥ 60
	Splitting load	∥	DIN 53436	N	≥ 2500

¹⁾ After heating for 1h at 150°C the flexural strength of the material measured at 150°C should be at least 50 % of the ambient temperature value.

VETRESIT® 300

Properties	Standards	Units	Values		
Thermal Properties	Linear thermal expansion (20 - 100 °C)	 ⊥	DIN 52328	K ⁻¹	12 - 15 · 10 ⁻⁶ 40 - 60 · 10 ⁻⁶
	Thermal conductivity (20 - 100 °C)	⊥	VDE 0304 T1	W / m • K	0,40 - 0,60
	Flammability h = 1 mm		ASTM D-635		self-extinguishing
Physical and chemical properties	Water absorption h = 4mm, test A		ISO 62	mg mass %	≤ 23 ≤ 0,10
	Oil absorption h = 4 mm (24h/50°C + 4h in Oil 90 °C)			mass %	≤ 0,01
	Resistance against: - solvents (except phenols and ketones) - mineral oils - diluted acids, bases		ASTM D-543		good good good

⊥: perpendicular to layers
||: parallel to layers

These properties have been determined by the above shown methods. The data given are valid for standard test specimen only. Unless otherwise specified, all data were measured at ambient temperature. The contents of this publication are based on our present experience. They are an indication for application of our products without any liability for us. Notice of legal requirements and existing patent rights has to be taken.

Due to the many application and manufacturing process possibilities, we cannot give any warranty for the technical results in individual cases.



ABB Schweiz AG
Micafil
Badenerstrasse 780
CH-8048 Zürich
Telefon: +41 (0)58 586 03 33
Fax: +41 (0)58 586 03 01