DATA SHEET
Rev. N° 1 - 16.07.2024

8MS.002
Technic Composite Glass-Epoxy

Applications

- Electrical insulators in induction systems
- Static electrical insulators in power installations
- Construction of electric furnaces, induction furnaces and arc furnaces
- Flat gaskets and sealing components
- High-frequency welding technology
- Insulation of press plates
- High-voltage switchgear
- Heating elements

Physical variables included in this documentation are provided by way of indication only and do not, under any circumstances, constitute a contractual undertaking. Please contact our technical service if you require any additional information.

Final Advanced Materials Sàrl
4 avenue de Strasbourg
68350 Didenheim – France
Tel : +33 (0) 3 67 78 78 78

Final Advanced Materials GmbH
Basler Strasse 115
79115 Freiburg – Deutschland
Tel: + 49 (0) 761 47 87 336

www.final-materials.com

info@final-materials.com

Overview

Final Advanced Materials works with a range of glass fibre- and high-performance epoxy resin-based technical composites. These products are suitable for a wide variety of high-temperature applications.

Glass-epoxy composites provide impeccable thermal and electrical insulation. They can be ideally deployed in applications where high-temperature resistance, dimensional stability and mechanical strength are essential.

Manufacturing

This product is a composite material, comprised of a glass-fibre matrix and an epoxy resin. Epoxy, or polyepoxide, is a resin produced by the polymerization of epoxide monomers using a hardener. Curing is achieved by the action of heat.

Final Advanced Materials can supply these composite products in sheet material form, for your own designs. It is also possible for us to undertake the complete execution of your project in our specialized workshop.

Principal characteristics

- Low thermal conductivity
- Good high-temperature resistance
- Excellent dimensional stability
- Suitable for sealing applications
- Exceptional toughness
- Good mechanical resistance
- High dielectric strength
- Good wear resistance
- High compressive strength

FINAL ADVANCED MATERIALS

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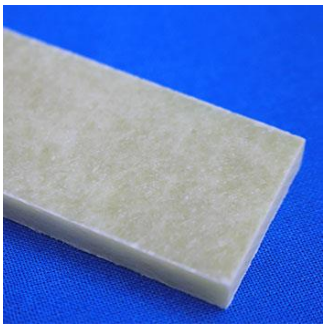
Available Products



E-6000: This product combines low thermal conductivity (0.25 $W.m^{-1}.K^{-1}$) with low density, thus permitting the production of more delicate and lightweight insulating components. It is resistant to a continuous temperature of 220 °C and a peak temperature of 320 °C. This material is laminated from a basis of glass-fibre matting and whitish-yellow epoxy resin. It shows good resistance to chemical agents.

E-60: This product delivers a superior mechanical and thermal performance to E-6000, but is less effective as a thermal insulator. It is resistant to a continuous temperature of 260 °C and a peak temperature of 330 °C. It is laminated from a basis of grey-coloured glass roving and epoxy resin.

Dimensions

Product	Type	Dimensions	Thickness	Tolerances
E6000	**Board**	2.950 x 1.335 mm 2.300 x 1.300 mm	3 to 50 mm 52 to 102 mm	Thickness ±0.2 mm
E60	**Board**	2,140 x 1,040 mm 2,800 x 1,200 mm	3 to 80 mm	Thickness ±0.2 mm Linear 0 /+30 mm Parallel 0,3 mm/ml on corrected board
Customed designs are available on request				

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Technical Data

Property		Unit	E6000	E60
Item N°			080-0016	080-0017
Composition			Fiberglass matting Epoxy resin	Fiberglass roving Epoxy resin
Colour			yellow-beige	grey-brown
Density DIN 53479		kg/m^3	1,850	1,980
			Thermal Properties	
Max. Operating Temperature		°C	220	260
Max. Peak Temperature		°C	250	330
Thermal Conductivity DIN 52612		$W.m^{-1}.K^{-1}$	0.35	0.30
			Mechanical Properties	
Compressive Strength ⊥ ISO 604	at 23 °C	MPa	450	600
	at 200 °C		280	300
	at 220 °C		-	290
	at 260 °C		-	250
Shock Resistance ‖ to bedding plane ISO 179		kJ/m^2	50	-
Flexural Strength ISO 178 ⊥		MPa	360	-
Tensile Strength ‖ ISO 527		MPa	280	-
Elastic Modulus DIN 7735		MPa	-	20,000
			Dielectric Properties	
Dielectric Strength at 90 °C ⊥			13 kV/mm IEC 60243	40 kV DIN 53481
Breakdown Voltage at 90 °C ‖ IEC60243		kV/25 mm	70	-
Comparative Tracking Index IEC60112			150	-
			Chemical and Biological Properties	
Linear Thermal Expansion Coefficient		$10^{-6}/K$	0,01 - 0,02	-
Water Absorption		%	< 0,2 ISO 62	0,05 DIN 7735
Resistance to Oils			good	Excellent
Resistance to Chemicals			Excellent	Excellent
Arc Resistance			-	Excellent

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