



# AEROSPACE: THERMALLY CONDUCTIVE GLASS-REINFORCED COMPOSITES



## WHY?

High thermal conductivity glass-fabric epoxy composites match carbon-based materials in heat dissipation while remaining electrically insulating — ideal for electronics needing thermal management without conductivity.

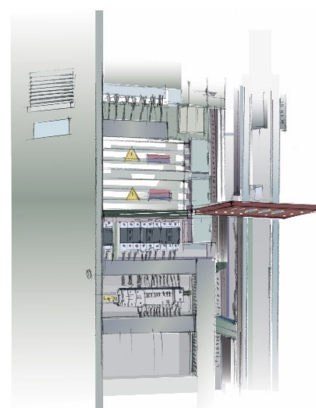
## APPLICATION

Improved heat dissipation leads to higher efficiency and higher power density in electro-technical equipment; this is specifically relevant to equipment operating at high temperatures or close to sources of heat:

- + Engine parts
- + Electrical panels in the cabin
- + Cockpit parts (nose, windows frames)
- + Subcomponents for LSP and Edge glow prevention in fuel tank

## TECHNOLOGY

Epoxy resin modification to enhance specific thermal conductivity.



# KEY PRODUCT: VETRONITE EGS 619 HTC

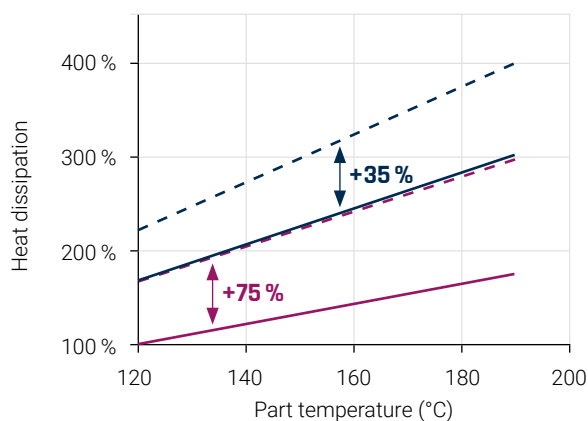
## HIGH THERMAL CONDUCTIVITY GLASS-FABRIC EPOXY COMPOSITE

### FEATURES

- + Composite laminate made of **glass cloth** and **high temperature epoxy**, type **FR-4** (NEMA LI 1)
- + Outstanding **thermal conductivity**
- + **Excellent mechanical** and electrical properties
- + **Flame retardant**

	Unit	Value
<b>Mechanical properties</b>		
Flexural strength	MPa	450
E-modulus	GPa	24
Compressive strength //, at 23°C	MPa	250
Compressive strength ⊥, at 23°C	MPa	420
Tensile strength	MPa	300
<b>Thermal properties</b>		
Temperature index (TI)	°C	130 (Class B)
Thermal conductivity (ISO 8301)	W / m K	0.86

	Unit	Value
<b>Electrical properties</b>		
Insulation resistance	Ohm	10 <sup>12</sup>
Breakdown voltage //, 90°C in oil	kV	65
Electric strength ⊥, 90°C in oil	kV/mm	15
Comparative tracking index CTI	V	500
Relative permittivity at 1 MHz	(-)	5.3
Dissipation factor at 1 MHz (-) 0.01	(-)	0.01
<b>Physical properties</b>		
Density	g/cm <sup>3</sup>	2.05



**1.0 mm laminate allows for an increased heat dissipation by about 75% (compared to standard composite)**

— 0,4 mm                      — 1,0 mm  
 - - 0,4 mm - HTC           - - 1,0 mm - HTC

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