

What is HGW 2572-F4

HGW 2572-F4

Hgw 2572-F4 – silicone-resin glass-fabric laminate, heat-resistant up to 180 °C, tracking-resistant, US-market designation variant of Hgw 2572

HGW 2572-F4 (Hgw 2572-F4 acc. to DIN 7735 / SI GC 202 acc. to EN 60893) is the high-temperature specialty material among glass-fabric laminates – technically identical to Hgw 2572, whose "-F4" is the US-market designation variant and not an independently verified, standalone NEMA standard designation. With a silicone-resin matrix, HGW 2572-F4 achieves a continuous-use temperature of up to 180 °C combined with very high tracking resistance (CTI 600) – significantly more than epoxy or phenolic laminates can offer.

Classification and basic character

HGW 2572-F4 belongs to the family of glass-fabric laminates (industrial laminates): glass-fabric layers are impregnated with silicone resin and pressed under heat and pressure into sheets or round bars. Compared with phenolic and epoxy resin, silicone resin offers exceptionally high thermal resistance. The colour is characteristically white.

Why silicone resin? The difference from Hgw 2372.1 and cotton-fabric laminate

While epoxy-resin glass laminate (Hgw 2372.1) reaches its thermal limit around 130 °C and cotton-fabric laminate (Hgw 2081-2088) around 110-120 °C, HGW 2572-F4 withstands continuous temperatures of up to 180 °C. This is made possible by the silicone-resin matrix, which also provides exceptionally high tracking resistance (CTI 600) – important wherever electrical insulating parts are exposed to high temperature combined with contamination/moisture. As a trade-off, the basic mechanical values (DIN 7735 minimums) are somewhat lower than those of Hgw 2372.1.

How HGW 2572-F4 is manufactured and processed

HGW 2572-F4 is produced by pressing silicone-resin-impregnated glass-fabric layers into sheets or round bars. From these semi-finished products we machine precision parts – sawing, milling, drilling and turning produce clean results with sharp, carbide-tipped or diamond-coated tools. Adequate dust extraction should be ensured during machining (resin/glass fibre dust, mechanical skin irritation from glass fibres possible).

Mechanical, electrical and thermal properties

HGW 2572-F4 achieves typical values of around 240 MPa flexural strength, around 164 MPa tensile strength and around 120 MPa compressive strength, with a modulus of elasticity around 19,000 MPa and a density of about 1.7 g/cm³. Electrically, the material impresses with very high tracking resistance (CTI 600) and good dielectric strength. The limiting temperature for continuous use is 180 °C – the highest value among the fabric-laminate grades in Liedtke's range.

When HGW 2572-F4 is the right choice

HGW 2572-F4 is worthwhile whenever electrical insulation is needed at high continuous temperature – for example:

- Slot insulation in electric motors and generators with high operating temperature
- Insulating parts in transformer and coil construction
- Components in heating and thermal engineering
- High-temperature insulating parts in aerospace and rail technology
- Electrical engineering applications requiring both high tracking resistance and high temperature

When HGW 2572-F4 is not the right choice

Equally important are the limits of the material:

- Direct food contact – HGW 2572-F4 is not declared for this
- Applications without particular temperature requirements – an epoxy or cotton-fabric laminate is more economical here
- Applications requiring very high mechanical strength – Hgw 2372.1 is superior here
- Reshaping or welding – not possible as a thermoset (machining only)
- Skin-sensitive applications without protective measures during machining (glass fibre dust)

What does HGW 2572-F4 cost?

HGW 2572-F4 is the premium material among the fabric laminates in Liedtke's range, as silicone resin is significantly more expensive than phenolic or epoxy resin. The component price is determined mainly by sheet thickness, dimensions, material utilisation (offcuts), machining effort and batch size. We are happy to provide binding prices on request based on your drawing.

Machining at Liedtke

HGW 2572-F4 machines well – sawing, milling, drilling and turning produce clean, dimensionally accurate results with sharp, carbide-tipped or diamond-coated tools. During machining we ensure adequate dust extraction. This allows us to reliably manufacture high-temperature-resistant, tracking-resistant insulating parts, from single items to series production.

Advantages and disadvantages at a glance

An honest assessment – and how the disadvantages can be mitigated in practice:

Advantages

- Very high continuous-use temperature resistance (180 °C)
- Very high tracking resistance (CTI 600)
- Low water absorption
- Good electrical insulation properties even at high temperature
- Light, white surface

Disadvantages

- Not declared for direct food contact
- Highest price among the fabric-laminate grades
- Lower mechanical strength than Hgw 2372.1
- Higher tool wear during machining (glass fabric)
- Uneconomical for applications without high temperature requirements

Typical Properties

- Very high continuous-use temperature resistance (180 °C)
- Very high tracking resistance (CTI 600)
- Low water absorption
- Good electrical insulation properties
- Thermoset, dimensionally stable
- Colour white

Product Examples

- Slot insulation in electric motors
- Insulating parts in transformers and coils
- Components in heating and thermal engineering
- High-temperature insulating parts (aerospace, rail)
- High-temperature electrical engineering applications

Typical Industries

- Electric motor and generator construction
- Transformer and coil construction
- Heating and thermal engineering
- Aerospace and rail technology
- Electrical engineering and switchgear construction

	Test Method	Unit	Value
Mechanical			
Flexural strength	DIN 53452	MPa	240

	Test Method	Unit	Value
Tensile strength	DIN 53455	MPa	164
Compressive strength	DIN 53454	MPa	120
Modulus of elasticity	DIN 53452	MPa	19000
Electrical			
Tracking resistance CTI	IEC 60112		600
Electric strength	DIN 53481	kV	30
General			
Density	DIN 53479	g / cm ³	1.7
Limit temperature	VDE 0304, T.21	°C	180
Colour			white

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