

What is HGW 2088

HGW 2088

Hgw 2088 – wound cotton-fabric laminate with phenolic resin, specifically for round bars

HGW 2088 (Hgw 2088 acc. to DIN 7735 / PF CC 42 acc. to EN 60893) is the round-bar-specialised grade of the cotton-fabric-laminate family. Unlike the sheet grades Hgw 2082/2083, HGW 2088 is manufactured by winding, which makes the material particularly suitable for round bars, bushings and other rotationally symmetric parts.

Classification and basic character

HGW 2088 belongs to the family of cotton-fabric laminates per DIN 7735 / EN 60893, but differs in manufacturing method from the sheet grades: instead of flat fabric layers, a phenolic-resin-impregnated cotton fabric is wound around a mandrel and then cured. This winding process is specifically designed for the manufacture of round bars and provides uniform properties across the entire cross-section.

Why a dedicated winding process? The difference from Hgw 2082/2083

While Hgw 2082 and Hgw 2083 are pressed into sheets from stacked, flat fabric layers, HGW 2088 is produced by winding the impregnated fabric around a mandrel. This construction is optimised for round bars: it avoids the anisotropic layer structures that occur in round bars machined from sheet stock and results in a more uniform component across the cross-section. The mechanical values are somewhat lower than those of sheet stock, as the wound construction serves different load directions.

How HGW 2088 is manufactured and processed

HGW 2088 is produced by winding phenolic-resin-impregnated cotton fabric into round bars, which are then cured. From these semi-finished products we machine precision parts – mainly turning, but also milling and drilling produce clean, dimensionally accurate results with sharp, carbide-tipped tools. Adequate dust extraction should be ensured during machining (resin/fabric dust).

Mechanical, electrical and thermal properties

HGW 2088 achieves typical values of around 100 MPa flexural strength and around 80 MPa parallel compressive strength, with a modulus of elasticity around 7,000 MPa and a density of about 1.3 g/cm³. Electrically, the material offers solid tracking resistance (CTI around 100) and good insulation properties. The limiting temperature for continuous use is 120 °C (thermal class E) – somewhat higher than the sheet grades.

When HGW 2088 is the right choice

HGW 2088 is worthwhile whenever a rotationally symmetric part made of economical fabric laminate is needed – for example:

- Sliding bushings and bearing elements
- Spacers and shafts in mechanical engineering
- Insulating round parts in electrical engineering (low voltage)
- Drive-technology components with rotationally symmetric geometry
- General mechanical round parts under moderate load

When HGW 2088 is NOT the right choice

Equally important are the limits of the material:

- Direct food contact – HGW 2088 is not declared for this
- Flat components – the sheet grades Hgw 2082/2083 are the more suitable choice here
- Medium-voltage applications with high tracking-resistance requirements
- Continuous use above approx. 120 °C
- Reshaping or welding – not possible as a thermoset (machining only)

What does HGW 2088 cost?

HGW 2088 is an economical round-bar fabric laminate. The component price is determined mainly by bar diameter, length, machining effort and batch size. We are happy to provide binding prices on request based on your drawing.

Machining at Liedtke

HGW 2088 machines well – mainly turning, but also milling and drilling produce clean, dimensionally accurate results with sharp, carbide-tipped tools. During machining we ensure adequate dust extraction. This allows us to reliably manufacture rotationally symmetric insulating and structural 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

- Winding process specifically optimised for round bars
- Uniform properties across the cross-section
- Economical standard material
- Good machinability (especially turning)
- Somewhat higher limit temperature than sheet stock (120 °C)

Disadvantages

- Not declared for direct food contact
- Lower flexural strength than sheet grades
- Only for round-bar geometries, not for sheets
- Moderate tracking resistance (CTI ~100)
- Not all values as extensively publicly documented as for sheet stock

Practical tip: HGW 2088 is the right choice for round bars, bushings and shafts made of economical fabric laminate. For flat components such as insulating panels, the sheet grades Hgw 2082/2083 are the more suitable choice.

Typical Properties

- Winding process specifically optimised for round bars
- Uniform properties across the cross-section
- Good electrical insulation properties
- Thermoset, dimensionally stable
- Good machinability (turning)
- Colour brown

Product Examples

- Sliding bushings and bearing elements
- Spacers and shafts
- Insulating round parts
- Drive-technology components
- General mechanical round parts

Typical Industries

- Electrical and insulation technology (low voltage)
- Mechanical and plant engineering
- Drive technology
- Jig, fixture and tool making
- Switchgear and equipment construction

	Test Method	Unit	Value
Mechanical			
Flexural strength	DIN 53452	MPa	100

	Test Method	Unit	Value
Tensile strength	DIN 53455	MPa	50
Compressive strength (parallel)	DIN 53454	MPa	80
Modulus of elasticity	DIN 53452	MPa	7000
Electrical			
Tracking resistance CTI	IEC 60112		100
Electric strength	DIN 53481	kV	10
General			
Density	DIN 53479	g / cm ³	1.3
Limit temperature	VDE 0304, T.21	°C	120
Colour			brown

HGW 2088 is a wound cotton-fabric laminate with phenolic resin per DIN 7735 / EN 60893, specifically designed for the manufacture of round bars. The values stated are typical properties, partly researched from common publicly available data sheet information for this product type, partly estimated by analogy with comparable cotton-fabric laminates; they serve as an aid to material selection and do not constitute a legally binding guarantee of specific properties. Actual values may vary somewhat depending on manufacturer and bar diameter. HGW 2088 is not declared for direct food contact.