



Phenolic Fiber

Phenol-Formaldehyde Resin Reinforced Thermoset Composite

VO/HB Fireproof | High Rigidity | Electrical Insulation

Material Type

Thermosetting Composite

Form: Flat / Plate / Rod / Tube

Combustion: **VO/HB (UL 94)**

MATERIAL DESCRIPTION

Phenolic Fiber is a high-performance thermoset composite produced by reinforcing phenol-formaldehyde resin with glass or paper fiber. It doesn't melt, it just chars; It maintains its dimensional stability at high temperatures. This material, which is extremely rigid with an elastic modulus of 7000-9000 MPa, is preferred in the production of electrical insulators, plain bearing sleeves and heavy machine gears.

MECHANICAL AND PHYSICAL PROPERTIES (ISO/ASTM)

Feature	Unit	Value	Feature	Unit	Value
Intensity	g/cm ³	1.35 – 1.45	Shore D Hardness	—	90 – 95
Breaking Stress	MPa	80 – 150	Friction Coefficient	—	0.25 – 0.30
Elasticity Modulus	MPa	7000 – 9000	Glass Transition (Tg)	°C	~ 130
Impact Resistance	kJ/m ²	20 – 40	Work. Gene. Coefficient	10 ⁻⁴ K ⁻¹	0.2
Notched Impact	kJ/m ²	5 – 10	Dielek. Strength	kV/mm	10 – 15
Water Absorption (24h)	%	1.0 – 2.0	Surface Resistance	Ohm	10¹⁰
Service Temperature	°C	-40 / +120	Combustion Class	UL 94	VO/HB

AREAS OF APPLICATION

Electrical Insulation Plate

Bearing Sleeve and Bushing

High Load Gears

Shipbuilding Components

Transformer Structural Parts

Heavy Machinery Components

CHEMICAL RESISTANCE AND GENERAL PROPERTIES

It has good resistance to organic solvents and oils; It is weakly resistant to alkali bases and moderately resistant to acids. It does not melt due to its thermoset structure; It maintains its dimensional stability by charring at high temperatures. Cannot be welded; It can only be shaped by mechanical processing (cutting, milling, drilling). Generally unsuitable for food applications. It is preferred as a high rigid structural insulation solution in the electrical, shipbuilding and heavy machinery industries.

The technical information specified in this document reflects the reference values of international ISO/ASTM standards. Chemical resistance may vary depending on concentration, temperature and exposure time.

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