

## ***TUFNOL Grade 6G/92***

Polyimide Glass Fabric laminate

Glass fibre/polyimide resin laminated plastic

(SRBGF - Synthetic Resin Bonded Glass Fabric)

**High performance laminate for high temperature applications.**

TUFNOL Grade 6G/92 is specially formulated for applications requiring excellent mechanical strength and insulation properties at elevated temperatures. It is a strong, rigid material, with good dimensional stability and moisture resistance and good electrical properties. It is resistant to a wide range of working environments and exhibits good thermal endurance properties at temperatures up to 250°C.

This grade is suitable for many applications requiring resistance to temperatures of 200°C to 250°C or short-term exposure to slightly higher temperatures. It is naturally fairly flame retardant and can be readily machined into finished components, using standard machine tools with techniques similar to those used for machining epoxy glass materials.

### **What is TUFNOL Grade 6G/92 used for?**

Tufnol polyimide glass laminate is widely used throughout industry, particularly in the aircraft industry, as electrical insulation and in industrial machinery where high temperatures are required. Applications in general engineering range from heat barriers on plastic injection moulding machines, to support assemblies on diesel engine exhaust systems.

It is also used for certain high temperature applications where asbestos based materials were previously used. Typical examples are:

- Sealing rings in high temperature chemical plant
- Components on equipment for use in microwave ovens
- Terminal plates for high temperature strain gauges
- Aircraft components, such as high temperature insulation on jet engines
- Electrical insulation fixtures for high temperature testing of solid state devices

- Scraper blades in high temperature processing

#### TYPES AVAILABLE

Natural colour (dark brown) only.      Sheet only,  
or in machined components made from sheet

***SPECIFICATIONS for TUFNOL Grade 6G/92***

BRITISH STANDARDS	Current Standards	Recent Standards (now obsolete)
Sheet	BS EN 60893-3-7 Type PI GC 301	BS 3953 Type PI-1

**PHYSICAL PROPERTIES****TUFNOL Grade 6G/92 Sheet**

PROPERTY	TYPICAL RESULT	UNITS
Cross breaking strength	570	MPa
Cross breaking strength at 200°C (after 1470 hour at 200°C)		
Cross breaking strength at 200°C (after 430 100 hours at 200°C)		
Impact strength, notched, Charpy	100	kJ/m <sup>2</sup>
Water Absorption		
- 1.6mm thk.	30	mg
- 3mm thk.	32	mg
- 6mm thk.	38	mg
- 12mm thk.	45	mg
Electric strength, flatwise in oil at 90°C		
- 1.6mm thk.	17	MV/m
- 3mm thk.	11	MV/m
Electric strength, edgewise in oil at 90°C	60	kV
Insulation resistance after immersion in 5x10 <sup>10</sup> water		ohms
Loss tangent at 1 MHz	0.005	-
Permittivity at 1 MHz	4.8	-
Flammability category	FV1*	-

Relative density	1.85	-
Glass transition temperature Tg	260	°C
Maximum working temperature**	250	

Test methods as BS EN 60893-2, where applicable.

\* This flammability category is applicable to sheets of nominal thickness 3mm and above.

\*\* Prolonged exposure of resin-bonded materials to high temperature always reduces properties over time. Users of highly stressed components at temperatures approaching the maximum are recommended to seek further advice from Tufnol Composites Ltd.