



# GRADE 10G/50

**SRBGF Material**  
**Synthetic Resin Bonded**  
**Glass Fabric**

Silicone Glass Fabric laminate  
Glass fibre/silicone resin laminated plastic

# SRBGF Material. GRADE 10G/50.

---

**For heat resistance and high frequency insulation.**

TUFNOL Grade 10G/50 is a laminated plastics material made from woven glass fabric, bonded with silicone resin.

It is a rigid sheet material with good resistance to high temperatures and very good electrical insulation properties, especially in applications involving very high frequencies. Note, however, that silicone bonded laminates have mechanical strength properties somewhat lower than some other glass fabric laminates.

## **Temperature resistance**

TUFNOL Grade 10G/50 is suitable for use at temperatures up to 200°C and will also withstand short term exposure to 240°C. It has very good retention of properties (thermal endurance) at temperatures up to 200°C and can be an economical choice in comparison with other plastics materials with similar heat resistance. It also has good flammability performance.

## **High Frequency Performance**

The silicone resin used to bond the laminate gives TUFNOL Grade 10G/50 first class dielectric properties, including high insulation resistance and low loss tangent and permittivity. This ensures good performance in electrical applications at high frequencies.

## **What is Grade 10G/50 used for?**

This grade is used for a wide variety of electrical and mechanical applications where its particular combination of properties makes it an ideal choice. It is equally at home as insulation in Class H electrical equipment, or used on a conveyor carrying components through a hot oven process.

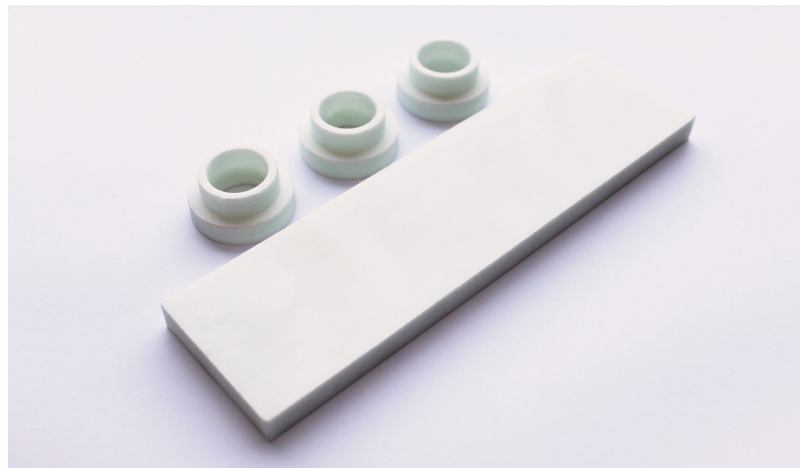
The low loss characteristics are particularly important for engineers and designers working with many types of high frequency electrical devices, such as high-powered radar and military communications equipment. Typical non-military applications include microwave and RF equipment, such as are used in the food processing industry and in medical equipment using microwaves.

Types available

	Sheets	Rods	Tubes	Other Sections
Natural colour	Yes	No	No	No

Minimum order quantities may apply.

British Standards	Current Standards	Recent Standards (now obsolete)
Sheet	BS EN 60893-3-6 Type SI GC 202	-
Rod from Sheet	BS EN 60893-3-6: 2009 SI GC 202	-
NEMA		
Sheet	BS EN 60893-3-6: 2009 SI GC 202	-



## Physical Properties

Property	Typical Result	Units
Cross breaking strength	140	MPa
Impact strength, notched, Charpy	70	kJ/m <sup>2</sup>
Cross breaking strength at 150°C (after 1 hour at 150°C)	80	MPa
<b>Water Absorption</b>		
- 1.6mm thk.	4	mg
- 3mm thk.	6	mg
- 6mm thk.	9	mg
<b>Electric strength, flatwise in oil at 90°C</b>		
- 1.6mm thk.	14	MV/m
- 3mm thk.	11	MV/m
<b>Electric strength, edgewise in oil at 90°C</b>		
	65	kV
Insulation resistance after immersion in water	1 x 10 <sup>11</sup>	ohms
Loss tangent at 1 MHz	0.002	-
Permittivity at 1 MHz	4.2	-
Flammability category	FVO	
Comparative tracking index	800	
Relative density	1.90	-
<b>Maximum working temperature**</b>		
- continuous	200	°C
- intermittent	240	°C
Thermal classification (8S2757)	Class 200	-

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

\*\*users of highly stressed components at temperatures approaching the maximum are recommended to seek further advice from Tufnol Composites Ltd.



# SRBGF Material. GRADE 10G/50.

---

## Reliability in the field of engineering plastics & composites.

Tufnol is the byword for quality in laminated plastics and resin based materials for engineering applications. It was invented here in the UK and its development to meet modern engineering demands continues to keep it abreast of 21st century technology.

This type of material is known as 'synthetic resin bonded laminated plastic', and is made from layers of paper, cotton cloth or woven glass fibre cloth, dipped in resin, then compressed and bonded together in a hot press. It is a strong, hard material, made in a number of different grades with varying properties and uses.

Tufnol's reliability is key to the many sectors of engineering industry in which it serves.

Tufnol UK  
Wellhead Lane, Perry Barr  
Birmingham B42 2TN

T: +44 (0)121 356 9351

E: [info@tufnol.co.uk](mailto:info@tufnol.co.uk)

[tufnol.com](http://tufnol.com)



Tufnol warrants the materials it produces will conform to Tufnol specifications. It is entirely the customer's responsibility to make the final product choice and satisfy themselves of the suitability of the product for the intended application and carrying out testing where required. Tufnol does not warrant the conformity of its materials to these properties or the suitability of its materials for any particular purpose.

The values are "typical only" and are based on test results generally in accordance with Test methods BS EN 60893-2, where applicable.