



# GRADE 10G/24

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

Phenolic Glass Fabric laminate  
Glass fibre/phenolic resin laminated plastic  
with low smoke properties

# SRBGF Material. GRADE 10G/24.

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## For electromechanical applications

TUFNOL Grade 1 0G/24 is a laminated plastic sheet material manufactured from modified phenolic resin with a woven glass fabric reinforcement. It exhibits good electrical insulation, high mechanical strength and exceptionally good fire properties. It has excellent weather resistance and can be used in long-term applications in outdoor or marine environments.

## Special Resin Formulation

The specially formulated resin of TUFNOL Grade 10G/24 gives exceptional performance in fire tests, over and above the properties found in standard phenolic materials. This results in controlled flammability, good resistance to ignition and excellent low smoke and toxicity values.

## What is Grade 10G/24 used for?

This combination of properties makes TUFNOL Grade 1 0G/24 an ideal choice for many applications where the benefits of a high performance glass fibre laminate need to be combined with low smoke output and good fire resistance. Low smoke performance is particularly important in areas such as tunnels, underground facilities, offshore platforms and passenger transport vehicles, where escape from a fire may be restricted.

## Types available

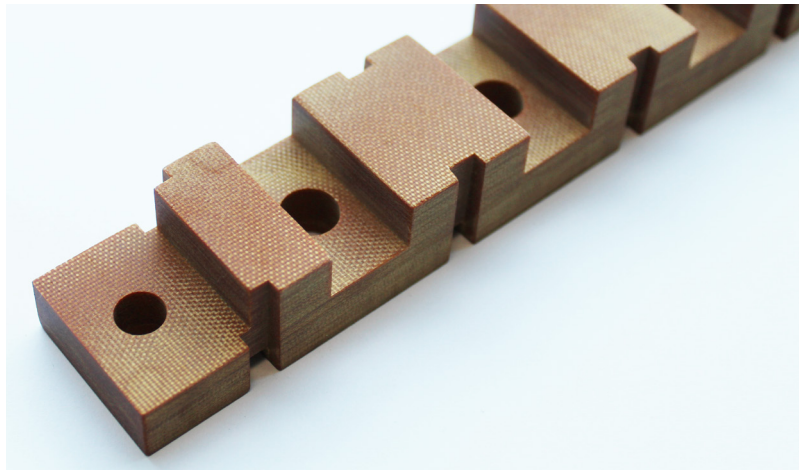
	Sheets	Rods	Tubes	Other Sections
Natural colour - dark brown	Yes	No	No	No

Minimum order quantities may apply.

## Specifications for GRADE 10G/24

British Standards	Current Standards	Recent Standards (now obsolete)
Sheet	BS EN 60893-3-4 Type PF GC 201	BS 3953 Type PF-2

with additional fire performance properties, as shown below.



## Physical Properties

Property	Typical Result	Units
Cross breaking strength	350	MPa
Impact strength, notched, Charpy	50	kJ/m <sup>2</sup>
<b>Water Absorption</b>		
- 3mm thk.	24	mg
- 6mm thk.	52	mg
Electric strength, edgewise in oil at 90°C	45	kV
Insulation resistance after immersion in water	4 x 10 <sup>10</sup>	ohms
Loss tangent at 1 MHz	0.020	-
Permittivity at 1 MHz	7.5	-
Relative density	1.90	-
<b>Maximum working temperature**</b>		
- continuous	150	°C
- intermittent	160	°C
Thermal classification	Class F	-

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

Additional Fire Properties

Property	Test Method	Typical Result
Flammability	BS 6334 IEC 707 ISO 1642	Category FVO
Fire propagation	BS 476 Part 6	Fire Propagation Index, 1=9.2 Subindex, i1=0.5
Surface spread of flame	BS476 Part 7	Class 1
Smoke emission	BS 6853 3 metre cube flooring test	Ao(max)=146
Combustion Toxicity Index	NES 713	0.45

Detailed results are available.

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

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## 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.

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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.