

Heron Brand TUFNOL

Phenolic Paper laminate

Paper/phenolic resin laminated plastic

(SRBP - Synthetic Resin Bonded Paper)

High specification phenolic paper laminate

Heron Brand TUFNOL is a first class electrical insulating material with very low moisture absorption. It is especially suitable for use in humid or tropical environments, where its electrical properties are retained to a high degree. It has excellent electric strength, very high insulation resistance after immersion in water and is designed to meet the highest electrical standard for phenolic paper materials in BS and IEC specifications. It machines well and can be hot punched in thicknesses up to 3.2mm.

What is Heron Brand used for?

Heron Brand is used in electrical applications where high insulation performance is required, with stable properties in a moist or humid environment. Items such as terminal boards, mounting plates, cover plates and insulating spacers have frequently been made. This grade has been largely superseded by the use of epoxy and other materials in such applications and is retained in our range for instances where it is needed for particular specification requirements.

TYPES AVAILABLE	Sheets	Rods	Tubes	Other sections
Heron Brand – natural colour only	Yes	No	No	No

* Minimum order quantities may apply.

SPECIFICATIONS for Heron Brand TUFNOL

BRITISH STANDARDS	Current Standards	Recent Standards (now obsolete)
Sheet	BS EN 60893-3-4 Type PF CP 204	BS 2572 Type P4
NEMA*		
Sheet	NEMA LI-1-1983 Type XXXP	
DIN *		
Sheet	Hp 2062.8 & Hp2063	

*Testing and certification to these standards is subject to special enquiry. Standard quality testing is to British Standards.

PHYSICAL PROPERTIES**Heron Brand TUFNOL Sheet**

PROPERTY	TYPICAL RESULT	UNITS
Cross breaking strength	146	MPa
Impact strength, notched, Charpy	2.7	kJ/m ²
Compressive strength, flatwise	350	MPa
Compressive strength, edgewise	215	MPa
Resistance to flatwise compression	1.2	%
Shear strength, flatwise	110	MPa
Water Absorption		
- 1.6mm thk.	20	mg
- 3mm thk.	25	mg
- 6mm thk.	30	mg
- 12mm thk.	45	mg
Electric strength, flatwise in oil at 90°C		
- 1.6mm thk.	19	MV/m
- 3mm thk.	15	MV/m
- 6mm thk.	10	MV/m
- 12mm thk.	7	MV/m
Electric strength, edgewise in oil at 90°C	60	kV
Insulation resistance after immersion in water	in 2x10 ¹¹	ohms

Loss tangent at 1 MHz	0.035	-
Permittivity at 1 MHz	4.9	-
Relative density	1.36	-
Maximum working temperature**		
- continuous	90	°C
- intermittent	120	°C
Thermal classification	Class E	-
Thermal conductivity through laminae	0.27	W/(mK)
Thermal expansion in plane of laminae	1.7	x 10 ⁻⁵ /K
Specific heat	1.5	kJ/(kgK)

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.