

Vole Brand TUFNOL

Cotton fabric laminate

Medium/fine weave cotton/phenolic resin laminated plastic

(SRBF - Synthetic Resin Bonded Fabric)

A medium/fine grade for mechanical applications.

Vole Brand TUFNOL is a medium/fine weave grade for mechanical applications, where the finish requirements or shape of the component demand a slightly finer reinforcement than other general purpose grades. It is excellent for screw threading and for other parts where good machining qualities are needed. It is suitable for electrical insulation at low voltages.

What is Vole Brand used for?

Vole Brand is used for mechanical applications where good machined finish is important, but where the benefits of the finest weave grades are not considered necessary, for example, medium/fine gears, threaded items, blades, wear resistant components and many similar items.

TYPES AVAILABLE	Sheets	Rods	Tubes	Other sections	
Natural colour Vole Brand	Yes	Yes	Yes	Use Brand	Whale

SPECIFICATIONS for Vole Brand TUFNOL

BRITISH STANDARDS	Current Standards	Recent Standards (now obsolete)
Sheet	BS EN 60893-3-4 Type PF CC 203	BS 2572 Type F2
Round Rod	BS EN 61212-3-3 Type PF CC 42	BS 6128 Part 2 Type PF CC 23
Round Tube	BS EN 61212-3-2 Type PF CC 33	BS 6128 Part 9 Type PF CC 92
NEMA*		
Sheet	NEMA LI-1-1983 Type L	

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

PHYSICAL PROPERTIES

Vole Brand TUFNOL Sheet

PROPERTY	TYPICAL RESULT	UNITS
Cross breaking strength	145	MPa
Impact strength, notched, Charpy	9.5	kJ/m ²
Compressive strength, flatwise	325	MPa
Compressive strength, edgewise	200	MPa
Shear strength, flatwise	98	MPa
Water Absorption		
- 1.6mm thk.	90	mg
- 3mm thk.	105	mg
- 6mm thk.	130	mg
- 12mm thk.	160	mg
Electric strength, flatwise in oil at 90°C		
- 1.6mm thk.	4.5	MV/m
- 3mm thk.	2.5	MV/m
- 6mm thk.	2.0	MV/m
Electric strength, edgewise in oil at 90°C	11	kV
Insulation resistance after immersion in 1x108 water		ohms
Relative density	1.36	-

Maximum working temperature**

- continuous	120	°C
- intermittent	130	°C

Thermal classification	Class E	-
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Thermal conductivity through laminae	0.32	W/(mK)
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Thermal expansion in plane of laminae	2.2	X 10 ⁻⁵ / K
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Specific heat	1.5	kJ/(kgK)
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Test methods as BS EN 60893-2, where applicable.

Vole Brand TUFNOL Round Tube

PROPERTY	TYPICAL RESULT	UNITS
Axial compressive strength	180	MPa
Cohesion between layers	130	MPa
Water absorption	2.8	mg/cm ²
Insulation resistance after immersion in 2x10 ⁷ water		ohms
Relative density	1.35	-

Test methods as BS EN 61212-2, where applicable.

Vole Brand TUFNOL Round Rod

PROPERTY	TYPICAL RESULT	UNITS
Flexural strength	140	MPa
Water absorption	2.9	mg/cm ²
Insulation resistance after immersion in water	in 2x10 ⁷	ohms
Axial electric strength in oil at 90°C	4	kV
Relative density	1.35	-

Test methods as BS EN 61212-2, where applicable.

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