



WHALE BRAND TUFNOL® (Fabric laminates)

Property	Typical Results	Units
Cross breaking strength	130	MPa
Impact Strength notched, charpy	11.5	kJ/m ²
Compressive strength flatwise	310	MPa
Compressive strength edgewise	200	MPa
Shear Strength, flatwise	90	Mpa
Tensile strength	68	MPa
Youngs modulus	6.3	GPa
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	2.6	MV/m
- 6mm thk	2	MV/m
Electric strength edgewise in oil at 90° C	12	kV
Insulation resistance after immersion in water	1x10 ⁸	ohms
Relative density	1.36	-
maximum working temperature**		
- continous	120	°C
- intermittent	130	°C
Thermal classification	Class E	-
Thermal conductivity through laminea	0.32	W/(mK)
Thermal expansion in plane of laminea	2.2	X10 ⁻⁵ /k
Specific heat	1.5	kJ(kgK)

ROUND RODS

Flexural strength	130	MPa
Water absorption	3.3	mg/cm ²
Insulation resistance after immersion in water	1x10 ⁷	ohms
Axial electric strength in oil at 90C	4	kv
relative density	1.35	-

ROUND TUBES

Axial compressive strength	170	MPa
Cohesion between layers	130	MPa
Water absorption	3.2	mg/cm ²
insulation resistance after immersion in water	1x10 ⁷	ohms
Relative density	1.35	-

SPECIFICATIONS

British Standards

Sheet: BS EN 60893 Type PF CC 203

Round Rod : BS EN 61212-3-3 Type PF CC 42

Rectangular Bar: BS6128 Part4 Type PF CC 43

Hexagon bar : BS6128 Part 6 Type PF CC 63

Round Tube : BS EN 61212-3-2 Type PF CC 33

Rectangular Tube : BS6128 Part 13 Type PF CC 132

NEMA*

Sheet: LI-1-1983 Type CE

MIL*

Sheet: MIL-I-24768

DIN*

Rounds Rod and Tubes: DIN7735 Type Hgw 2088

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