



### KITE BRAND TUFNOL (Phenolic Paper Laminates)

Property	Typical Results	Units
Cross breaking strength	175	MPa
Impact Strength notched, charpy	2.7	kJ/m <sup>2</sup>
Compressive strength flatwise	350	MPa
Compressive strength edgewise	200	MPa
Resistance to flatwise compression	1.2	%
Shear Strength, flatwise	105	Mpa
Water absorption		
- 1.6mm thk	39	mg
- 3mm thk	47	mg
- 6mm thk	56	mg
- 12mm thk	70	mg
Electric strength edgewise in oil at 90 °C		
- 1.6mm thk	14.5	MV/m
- 3mm thk	13	MV/m
- 6mm thk	8.8	MV/m
- 12mm thk	6.1	MV/m
Electric strength edgewise in oil at 90 °C	55	kV
Insulation resistance after immersion in water	1x10 <sup>10</sup>	ohms
Loss tangent at 1 MHz	0.037	-
Permittivity at 1 MHz	5.1	-
Relative density	1.36	-
maximum working temperature**		
- continous	90	°C
- intermittent	120	°C
Thermal classification	Class E	-
Thermal conductivity through laminea	0.26	W/(mK)
Thermal expansion in plane of laminea	1.8	X10 <sup>-5</sup> /k
Specific heat	1.5	kJ(kgK)
Test methods as BS 2572, where applicable		
<b>ROUND RODS</b>		
Fleural strength	170	MPa
Water absorption	2.5	mg/cm
Insulation resistance after immersion	5x10	ohms
Axial electric strength in oil at 90°C	15	kv
Relative density	1.35	-
Tesr methods as BS 6128		
<b>ROUND TUBES</b>		
Axial compressive strength	190	MPa
Cohesion between layers	110	MPa
Water absorption	1.0	mg/cm <sup>2</sup>
insulation resistance after immersion in water	1x10 <sup>9</sup>	ohms
Axial electric strength in oil 90°C		
Radial electric strength in oil at 90°C		
- 1.6 wall	8	MV/m
- 3.0 wall	6	MV/m
Relative density	1.35	-
<b>SPECIFICATIONS</b>		
British Standards	Sheet: BS EN 60893 Type PF CP 206	Round tube: EN 61212-3-2 Type PF CP 32
Admiralty	Sheet: NES 2053	Round tube: NES 2054
NEMA*	Sheet: Nema Type XXX	Round tube: Nema Type XXX
MIL*	Sheet: MIL-I-24768	Round tube: MIL-I-24768

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