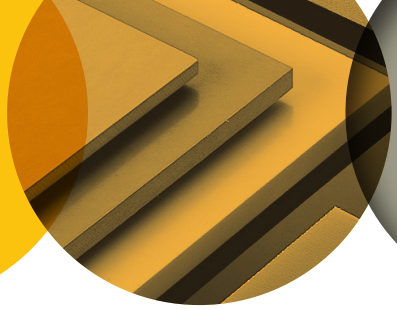
Röchling
Grade M X/2-E3

LIGNOSTONE® TRANSFORMER PRESS RINGS

Insulation components for oil filled transformers



M X/2-E3
Lignostone®
Transformer
Press Rings

GENERAL DESCRIPTION

Lignostone® Transformerwood® is a laminated densified wood, specially developed for use in transformers. Manufactured from red beech veneers which are joined together with thermosetting synthetic resins under high pressure and heat, and displaying the best electrical and mechanical characeristics for the use as insulation material in oil-filled transformers. From trees only grown in sustainable forests in Europe, the peeled veneers are subject to stringent quality measures. Tangentially layered press rings provide high mechanical strength and exact specific weight.

FEATURES & BENEFITS

- Tangential laminations provide high mechanical strength in a radial direction
- Good electrical insulation properties
- Easy and fast to dry
- High oil absorption

APPLICATIONS

- Press rings for oil filled transformers and coil clamping rings

GENERAL INFORMATION	
Material	Densified laminated wood with thermoset phenolic resins
Colour	Natural
Specification	T4R, KP 20224

TECHNICAL DATA	TEST METHOD	UNITS	VALUE
Mechanical			
Specific Gravity	ISO 1183	g/cm³	1.2 to 1.3
Modulus of Elasticity in Flexion (perpendicular)	ISO 178	N/mm²	13,000
Compressive Strength RT (perpendicular)	ISO 604	N/mm²	140
Compressive Strength RT (parallel)	ISO 604	N/mm²	100
Flexural Strength (perpendicular and parallel)	ISO 178	N/mm²	180
Tensile Strength (parallel)	ISO 527	N/mm²	140
Impact Strength RT (perpendicular)	ISO 179	kJ/m²	40
Impact Strength RT (parallel)	ISO 179	kJ/m²	35
Thermal			
Oil Absorption	DIN 7707	%	ca. 7
Thermal Conductivity	DIN 52612	W/mK	ca. 0.22
Operating Temperatures Continuous	DIN 7707	°C	100
Temperature limit when drying and oil impregnating	DIN 7707	°C	130

Insulect Australia - Customer Service
Tel 07 3716 6777
Fax 07 3716 6799
Email sales@insulect.com

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VERSATILITY VIA COLLABORATION

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Insulation components for oil filled transformers

TECHNICAL DATA	TEST METHOD	UNITS	VALUE
Electrical			
Electric Strength (parallel)	IEC 60243	kV/25mm	70
Electric Strength at 90°C (parallel)	IEC 60243	kV/25mm	60
Dielectric Loss Factor at 50Hz	DIN 53483	tan delta	0.02
Volume Resistivity	IEC 60093	Ω x cm	10^12
Track Resistance	IEC 60112	CTI	225

MACHINING & FABRICATION

Insulect's manufacturing capabilities form a key part of the trusted service we offer our customers. Our two modern, well equipped facilities – in Brisbane and Melbourne – work with a wide range of electrical, thermal and mechanical materials – including plastics, composites and cellulose-based products.

We offer short run, specialty or volume based machining and fabrication for almost any application and can produce cut-to-order sheets or finished components. Coupled with our highly-trained and experienced team, we are able to deliver on the most complex of customer requirements.

Tangential laminated coil clamping ring M X/2-E3

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