

ISOVAL® TU 21/FR4

Composition

ISOVAL® TU 21/FR4 is a round rolled epoxy-glasfabric tube of the type EP GC 21 according IEC 61212, Hgw 2375 according DIN 7735 and FR4 according NEMA LI1. It is produced using the temperature resistant resin of ISOVAL FR4-HF. The resin does not contain halogenes or other dangerous flame retardants.

Application

ISOVAL® TU 21/FR4 is used if very good mechanical properties are required. It is distinguished by a high thermal endurance, excellent electrical properties even at high humidity and shows very good resistance against water and chemical substances.

Technical Data

Properties	Testmethod	Unit	Min. Value
Density	ISO 1183/A	g/cm ³	approx. 1.7
Flexural strength perpendicular to laminations at 23°C	ISO 178	MPa	300
Compressive strength axial	ISO 604	MPa	175
Cohesion between layers	IEC 61212	MPa	200
Breakdown voltage (1' proof test) at 90°C in oil parallel to laminations ¹⁾	IEC243	kV	40
Electric strength (1' proof test) at 90°C in oil perpendicular to laminations (thickness 3,0 mm) ¹⁾	IEC243	kV/mm	7.7
Insulation resistance after immersion in water	IEC 167	Ω	10 ⁹
Thermal endurance	IEC 216	T.I.	180
Water absorption	ISO 62 / 1	mg/cm ²	≤1.5

¹⁾ after conditioning 24h/23°C/50 % rel. humidity

Availability

inner diameter	length
8 – 12,5 mm	500 mm
10 – 16 mm	1000 mm
16,5 – 400 mm	1000 and 1200 mm

Wall thickness: minimum wall thickness depending on inner diameter, max. 15 mm but not more than 0,7 times the inner diameter. If this value is exceeded cracks between the layers can occur.

Tolerances: according IEC 61212

Surface: as produced or ground