

ISOVAL® 10

Temperature resistant epoxy laminate with excellent dynamic - mechanical properties and medium operating temperatures according to the following international standards:

IEC 60893	EP GC 201
DIN 7735	Hgw 2372
NEMA LI 1	G10
BS 3953	EP 3

Composition

ISOVAL® 10 is prepared from glasscloth impregnated with the flexible version of the ISOVAL® epoxy system. Laminates exhibit high mechanical strength with good dynamic properties, very good chemical resistance as well as excellent thermal endurance properties at operating temperature of more than 180°C.

Application

ISOVAL® 10 can be used as a high quality construction material as well as an electric insulation material in various machines and equipments, especially in those areas where high mechanical strength and dynamic properties are necessary at medium operating temperature. ISOVAL® 10 can also be more easily machined than other materials and due to its high thermal endurance it is possible to replace silicon resin based laminates.

Machining recommendation

Due to the strength and hardness of the laminate and also the high glass content the tools used can be subject to a great degree of abrasion. We therefore advise that only diamond carbide tipped tools and high speed machinery are used.

Technical Data

Values in the table are mean values of our production. Values according to the standards are guaranteed.

Properties	Testmethod	Unit	Value
Density	ISO 1183 / A	g/cm ³	approx. 2,0
Flexural strength at 23°C / 100°C / 120 °C	ISO 178	MPa	450 / 350 / 200
Flexural modulus of elasticity	ISO 178	MPa	approx. 22000
Impact strength (Charpy) parallel to laminations	ISO 179/3 C	kJ/m ²	33
Tensile strength	ISO 527	MPa	280
Compressive strength perpendicular to laminations	ISO 604	MPa	500
Insulation resistance after immersion in water	IEC 167	Ohm	10 ¹²
Electric strength at 90°C in oil perpendicular to laminations (thickness 3mm)	IEC 243	kV/mm	13
Breakdown voltage at 90°C in oil parallel to laminations	IEC 243	kV	40
Permittivity at 50 Hz and 1 MHz	IEC 250	-	5,5
Dissipation factor at 50 Hz and 1 MHz	IEC 250	-	0,04
Comparative tracking index	IEC 112	-	CTI 180
Thermal endurance	IEC 216	T.I.	180
Water absorption (thickness 10 mm)	ISO 62 / 1	mg	20
Thermal conductivity	DIN 52612	W/mK	0,3
Linear coefficient of expansion	VDE 0304/2	1/K	1,3.10 ⁻⁵
High energy radiation resistance	IEC 544	Gy	10 ⁸
Flexural strength after 1000 h at 100 °C in oil	ISO 178	MPa	450

Availability

Thickness: 0,5 - 50 mm
 Tolerances: acc. IEC 60893
 Sheet size: 1300 +30/-0 mm x 1065 ±10 mm
 Colour: green

Machined parts and cuttings are available on request.