ISOVAL® 11

ISOVAL 11 is in accordance with the following international standards:

IEC 60893	EP GC 203
	EP GC 308
NEMA LI 1	G11

Composition

ISOVAL® 11 is prepared from glass fabric impregnated with temperature resistant version of ISOVAL® epoxy system. Laminates exhibit excellent thermal and chemical resistance as well as high mechanical strength at elevated temperatures.

Application

ISOVAL® 11 can be used as a high quality construction material as well as an electric and thermal insulation material in various machines and equipments, especially in those areas, where high operating temperatures are coupled with high mechanical strength requirements. The extremely good flexural and compressive strength at high temperature enable also application in those areas that traditionally could only be covered by polyimides.

Availability

Thickness:	0,1 - 160 mm	Thickness tolerances	according IEC 60893
Standard sheet size:	2140 +30/-0 mm x 1220 +30/-0 mm		
	2140 +30/-0 mm x 1040 +30/-0 mm		
	2800 +30/-0 mm x 1220 +30/-0 mm (0,2 to 130 mm thickness)		
	3180 +30/-0 mm x 1040 +30/-0 mm (0,2 to 60 mm thickness)		
	3180 +30/-0 mm x 1220 +30/-0 mm (0,2 to 60 mm thickness)		
	Machined parts and cuttings are available on request.		
Colour:	green		

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.

ISOVOLTA AG | 2355 Wiener Neudorf Austria
T: +43 5 9595 0 | F: +43 5 9595 9050 | headquarters@isovolta.com | www.isovolta.com
Company No.: 80592 v | Commercial register: Wr. Neustadt | VAT: ATU 142 43 102 | DPR: 8028

ISOVAL® 11

TECHNICAL DATA

Values in the table are mean values of our production. Values according to the standards IEC 60893 are guaranteed.

Properties	Norm	Unit	Value
Density	ISO 1183 / A	g/cm^3	approx. 2,0
Flexural strength at 23 / 100 / 120 150 / 180°C	ISO 178	MPa	400 / 320 / 300 220 / 100
Flexural modulus of elasticity	ISO 178	MPa	approx. 24 000
Impact strength (Charpy) parallel to laminations - with notch - without notch	ISO 179/3 C	kJ/m^2	50 100
Tensile strength	ISO 527	MPa	240
Compressive strength perpendicular to laminations 23 / 180 °C	ISO 604	MPa	500 / 350
Compressive strength parallel to laminations	ISO 604	MPa	150
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 x 10^{-5}
Weight increase after 1000 h stored in Freon	ISO 62 / 1	%	0,1
High energy radiation resistance	IEC 544	Gy	10^8
Flexural strength after 1000 h at 100 °C in oil	ISO 178	MPa	400

All information given here is based on currently available facts and on the results of experiments performed with all due care in our laboratories. It does not in any way reduce the responsibility of the user for carrying out further tests in order to ensure successful processing and use in specific applications.

ISOVOLTA AG | 2355 Wiener Neudorf Austria
T: +43 5 9595 0 | F: +43 5 9595 9050 | headquarters@isovolta.com | www.isovolta.com
Company No.: 80592 v | Commercial register: Wr. Neustadt | VAT: ATU 142 43 102 | DPR: 8028