



La MISOLET

Working Of Electric And Thermo Insulating Materials

CNC machining by customers' drawing

Blanked findings

Direct selling

Sheets and panels – Rods – Tubes made of:

Bakelized Cloth and Bakelized Paper

Epoxy Glass Nema G10 and G11,

Silicone Nema G7 and Melamine Nema G5

Polyester Glass GPO3

Thermo Insulating Materials – Mica and Micanite

TOOLING, BLANKING AND DIEMAKING

DATA SHEET

Laminate:

LFR4

Description: Glass cloth and epoxy resin binder laminate

According to specifications	CEI 15/10	EV ⁴⁾	Unit	Average values	Test method	Test conditions
	CEI EN 60893	EP GC 202 ⁴⁾				
	DIN 7735	Hgw 2372.1 ⁴⁾				
	NEMA LI - 1	FR4 ⁴⁾				

Physical properties	Colour	translucid natural			
	Density	g/cm ³	1,9	ISO 1183	a
Temperature Index (TI) ²⁾	° C	B (130°C)	IEC 60216	-	
Thermal conductivity	W/mk	0,3	ISO 8302	-	
Water Absorption (for 3 mm thickness) ³⁾	mg	22	IEC 60893-2	b + d	
Flammability (category)	-	V0	UL 94	-	

Mechanical	Flexural strength ⊥	MPa	340	ISO 178	a
	Modulus of elasticity	MPa	24x10 ³	ISO 178	a
	Tensile Strenght	MPa	430	ISO 527	a
	Compressive Strenght ⊥	MPa	520	ISO 604	a
	Charpy impact strength //	KJ/m ²	33	ISO 179	a

Dielectric properties	Dielectric strength ⊥ to lamination	kV/mm	14,2	ISO 60243-1	e
	Dielectric strength // to lamination	KV	35	ISO 60243-1	e
	Dissipation factor at 1 MHz		0,05	IEC 60250	d
	Dielectric constant (permittivity) at 1MHz		5,5	IEC 60250	d
	Tracking resistance	V	200	IEC 60112	a
	Insulating resistance	MΩ	5x10 ⁴	ISO 60167	d

1) Tests done according to IEC 893-2

2) The temperature index is equivalent to continuous operating temperature. The properties of the material exposed to this temperature for 20 000 hours are assumed to fall maximum by 50 % of their initial values.

3) Material certified according to EN45545-2: 2013 according to R22 and R23 requirements for safety levels HL1, HL2 and HL3.

The values shown above are indicative as they represent the average values observed during our routine control tests.

The user must make sure that the product he requests is compatible with the use to which it is destined.

Test condition:

a) 48h 15-35°C 45/75 % relative humidity **b)** 1h 105°C **c)** 24h 105°C **d)** 24h 23°C in water

e) 48h 50°C in water **f)** 24h 120°C in oil **g)** 96h 45°C 95% relative humidity

La MISOLET S.r.l. - Capitale sociale € 50.000,00 int.vers.

Phone.: +39-0377/43.71.25 (4 Lines) - Fax +39-0377/31.94.76

Works and offices: Via Pertini, 22/24 - 26845 Codogno (LO) - Italy

VAT IT06943440153

Internet: www.misolet.it - E-mail: info@misolet.it

Legal seat: Via Verbano, 8 - 20139 Milano - Italy

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THICKNESS mm	TOLERANCE	Particular properties:
0,2	± 0,07	Glass fabric and self-extinguishing epoxy resin Low water absorption Good dielectric properties High mechanical strength
0,3	± 0,08	
0,5	± 0,12	
0,8	± 0,16	
1,0	± 0,18	
1,2	± 0,20	
1,5	± 0,24	
2,0	± 0,28	
2,5	± 0,33	
3,0	± 0,37	
4,0	± 0,45	
5,0	± 0,52	
6,0	± 0,60	
8,0	± 0,72	
10,0	± 0,82	
12,0	± 0,94	
15,0	± 1,12	
20,0	± 1,30	
25,0	± 1,50	
30,0	± 1,70	
35,0	± 1,95	
40,0	± 2,10	
45,0	± 2,30	
50,0	± 2,45	
-	-	
-	-	

TO BE KEPT in dry stores, in a horizontal position

We are available to effect cutting to measurement as well as machining to drawing of parts by CNC

Ref. 216.158-R12-090517; 216.8623-A1-27122011; 217.798-25082015;

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(Page 2 of 2)