



# 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:

**LFR5**

**Description:** Glass cloth and epoxy resin binder laminate for high temperatures

According to specifications	CEI 15/10	EV	Unit	Average values	Test method	Test conditions
	CEI EN 60893	EP GC 308				
	DIN 7735	Hgw 2372.2				
	NEMA LI - 1	FR5				
<b>Physical properties</b>	Colour			Dark red		
	Specific gravity		g/cm <sup>3</sup>	1,95	ISO 1183	a
	Water absorption mm 3		mg	22	IEC 60893-2	b + d
	Thermal classification		°C	H (180°C)	IEC 60216	-
	Self extinguishing			V0	UL 94	-
	Thermal conductivity		W/mK	0,3	ISO 8302	-
	Expansion coefficient		10 <sup>-6</sup> /K	15	VDE 0304/VSM	-
	Silicone resin content		%	-	IEC 371-2	-
	Mica content		%	-	IEC 371-2	-
<b>Mechanical properties</b>	Flexural strength ⊥		MPa	340	ISO 178	a
	Charpy impact strength //		KJ/m <sup>2</sup>	50	ISO 179	a
	Tensile strength		MPa	450	ISO 527	a
	Compressive strength ⊥		MPa	400	ISO 604	a
	Bonding strength //		N	8000	CEI	a
	Modulus of elasticity		MPa	26000	ISO 178	a
<b>Dielectrical properties</b>	Insulation resistance		MΩ	5x10 <sup>4</sup>	ISO 60167	d
	Dielectric strength // to lamination		KV	45	ISO 60243-1	e
	Dielectric strength ⊥ to lamination		KV/mm	14,2	ISO 60243-1	e
	Tracking resi stance		V	600	IEC 60112	a
	Arc resistance		S	-	ASTM D495	-
	Dissipation factor at 1 MHz			0,04	IEC 60250	d
	Dielectric constant (permittivity) at 1 MHz			5	IEC 60250	-

**Other information:** Material compliant and certified according to the requirements of **UNI EN 45545-2: 2015** for **HL1** risk levels for **R22** and **HL1 - HL2** requirements set for **R23** (fire behavior) set requirements.

**Halogen-Free** Product and Confirms to European Directives **Rohs and Reach**.

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

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Laminate:

**LFR5**

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THICKNESS mm	TOLERANCE	Particular properties:
0,5	± 0,12	Applications: similar to LG11 with the addition of being self-extinguishing - Low water absorption - Good dielectric properties - Excellent mechanical properties at high temperatures
0,8	± 0,16	
1,0	± 0,18	
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	± 1,05	
20,0	± 1,30	
25,0	± 1,50	
30,0	± 1,70	
35,0	± 1,95	
40,0	± 2,10	
50,0	± 2,45	
60,0	± 2,80	
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-	-	
-	-	
-	-	

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

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