

Technical Information

VETRELAM^â 417

Material

The laminate of heat-resisting epoxy resin reinforced with glass fabric and coated on one or both sides with one layer Nomex[®] 410 0,13 mm.

The properties of the laminate depend on the total thickness and number of Nomex[®] layers.

The described values are based on a laminate with total thickness of 1 mm.

Version A = laminate coated with one layer Nomex[®] 410 0,13 mm

Version B = laminate coated both sides with Nomex[®] 410 0,13 mm.

Properties	Standards	Units	Version A	Version B	
			Value	Value	
Composition	Resin: Epoxy resin EP				
	Support: Glass fabric	ISO 1172	Mass %	≈ 48	
	Layers: Nomex [®] 0.13mm		Layers	1	
	Density	ISO 1183	g/cm ³	1,4 - 1,7	
Electrical Properties	Electric strength, ⊥	23 °C	IEC 243	KV/mm	20 - 35
	50 Hz, 1 Min., h = 1 mm	90 °C			20 - 35
	Comparative tracking index		IEC 112	CTI	125 ¹⁾ 200 ²⁾
Mechanical Properties	Tensile strength		ISO 527	MPa	310
	Flexural strength	RT 150 °C	ISO 178	MPa MPa	450 300
Thermal Properties	Temperature class		IEC 85		F - H
	Linear thermal expansion (20 - 100°C)		DIN 52328	K ⁻¹	14 - 20 10 ⁻⁶
	Thermal conductivity (20 - 100°C)	⊥	VDE 0304 T1	W m ⁻¹ K ⁻¹	0,25 - 0,35

Test surface : ¹⁾ on Nomex[®] ²⁾ on Glass fabric

⊥ perpendicular to layers

|| parallel to layers

Nomex[®] is a registered trade mark of DuPont



Dimensions

Table 1: Standard Dimensions and Tolerances

			L-sections		U- sections	
			Standard dimensions	Tolerances	Standard dimensions	Tolerances
Length	L	mm	≤12'000	± 1	≤12'000	± 1
Width	Ba/Bi	mm	20 - 250	± 0,2	15 - 50	± 0,2
Height	H	mm	5 - 50	± 0,2	5 - 150	± 0,2
Wall thickness	S	mm	0,5 - 2,5	± 0,1	0,5 - 2,5	± 0,1
Wall thickness (curved part)	A	mm	a = s	+0,1 / -0,2	a = s	+0,1 / -0,2
Inside radius	Ri	mm	3	± 0,2	1	± 0,2
Outside radius	Ra	mm	Ra = Ri + s	+0,4 / -0	Ra = Ri + s	+0,4 / -0
Angle	α	°	90	± 2	90	± 2

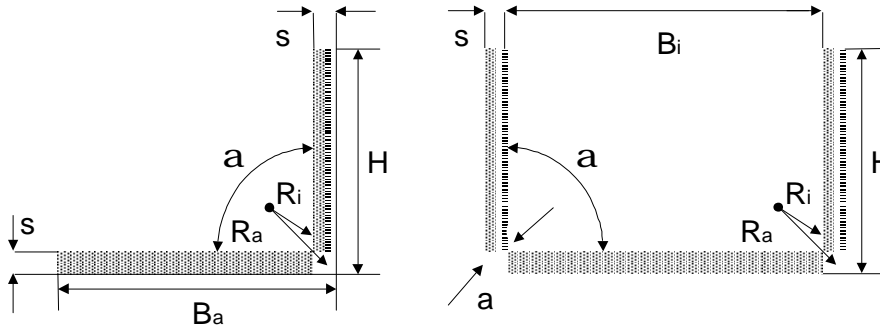


Table 2: Standard Dielectric Test Level (perpendicular ⊥)

The test voltage - 1 minute at 50 Hz - is applied in perpendicular direction. The voltage level considers the shape and the surface of the slot insulation as well as the necessary flashover distances.				
Test voltage 50 Hz, 1 Min	Thickness s in mm			
	≥ 0,5 - < 1,0	≥ 1,0 - < 1,2	≥ 1,2 - < 1,5	≥ 1,5 - < 2,0
L – sections	10 kV * s	10 kV	12 kV	14 kV
U – sections	9 kV * s	9 kV	10 kV	12 kV



ABB Schweiz AG
Micafil
Badenerstrasse 780
CH-8048 Zürich
Telefon: +41 (0)58 586 03 33
Fax: +41 (0)58 586 03 01

ABB Schweiz AG, Micafil
 Badenerstrasse 780
 CH - 8048 Zürich

Phone: +41 (058) 5860 333
 Fax: +41 (058) 5860 301

Version: 11-2004
 ersetzt 10-2002
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