



# Flexible Composite Materials

## Nomex® 411 Combined Flexible Materials

Materials	Test standard	Conditioning	Unit	N411/M/N 5/1/5	N411/M/N 5/2/5	N411/M/N 5/3/5	N411/M/N 5/4/5
<b>Total Thickness</b>	IEC 626-2	Standard atmosphere 23/50	mm	0.30	0.33	0.35	0.38
<b>Thickness tolerance</b>	IEC 626-2	“	%	± 20	± 20	± 20	± 20
<b>Actual thickness**</b>			mm	0.25	0.28	0.30	0.33
<b>Weight per unit area</b>	IEC 626-2	“	g/m <sup>2</sup>	136	174	209	244
<b>Yield ±12%</b>		“	m <sup>2</sup> /kg	7.34	5.74	4.78	4.10
<b>Outer layer :Nomex®</b>				411	411	411	411
<b>Nomex® thickness</b>	IEC 626-2	“	mil (mm)	5 (0.13)	5 (0.13)	5 (0.13)	5 (0.13)
<b>Inner layer material</b>				PET	PET	PET	PET
<b>Film thickness</b>	IEC 626-2	“	mil (mm)	1 (0.025)	2 (0.05)	3 (0.076)	4 (0.10)
<b>Tensile strength M.D.</b>	IEC 626-2	“	N/cm	60	90	120	150
<b>Elongation M.D.</b>	IEC 626-2	“	% (min)	17	17	17	17
<b>Dielectric strength unfolded</b>	IEC 626-2	“	kV	5	7	10	13

\*\* Uncalandered Nomex® is reduced in thickness during lamination

**Insulation System : Class F (155C); H (180C); N (200C) and R (220C) in accordance with UL 1446 system available for above materials.**

**FCM® is an insulating materials obtained by laminating a polyester (PET) film with one or two sheets of paper aromatic/polyamidic fibres based uncalandered Nomex® 411. A thermo-resistant resin ensures the perfect bonding.**

**Nomex® 411 with excellent resistance to the high temperatures and good absorbency for impregnation varnishes and impregnation or trickle resins, thus providing excellent bonding of all winding components. PET film is very resistant to the tearing; the combination of the two materials enables FCM® to get high performances when both mechanical or thermal stress occurs.**

**Size available : 950mm (approx.) in width per roll.**

Remark : The above value, which has been determined by careful tests, provide only general information. P. Leo has implemented several programs to assure the highest quality and reliability of this product. However, no responsibility is assumed for its use.

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