

Filmbase Polyester



Electrical
insulation
product

Polyester film; the fundamental material of flexible electrical insulation, common denominator to all flexible laminates to be used for the insulation of electrical machines in thermal class B (130 °C).

Characteristics

Filmbase family is composed of films, cords and papers; all these items are mechanically resistant, complying with the requirements encountered in the manufacturing of electrical machinery.

Filmbase Polyester film is the fundamental material for the construction of electric flexible insulation; almost all flexible insulating products for electrical machinery turn out to be polyester based. Its appearance can be transparent, hazy or milky white.

Formats

The product can be supplied in tapes from 8 mm width upwards, in rolls until 2000 mm, cut in sheets or die-cut according to customer specifications.

Core internal diameter 76 or 152 mm (3 or 6 inches).

Technical Data

Properties	Unit	Method	Value					
Total thickness	µm		19	23	36	50	75	100
Dielectric strength	kV	ASTM D-149	3	4	5	8	10	12
Dielectric constant (AC 50 Hz, 25 °C)		ASTM D-150	3,3	3,3	3,3	3,3	3,3	3,3
Dielectric loss factor (AC 50 Hz, 25 °C)		ASTM D-257 ASTM D-2305	0,0025	0,0025	0,0025	0,0025	0,0025	0,0025
Specific volume resistance	Ω/m	23 °C 30% r.F.	10 ¹⁸	10 ¹⁸	10 ¹⁸	10 ¹⁸	10 ¹⁸	10 ¹⁸
Specific surface resistance 23 °C (73 °F)-30% RH	Ω/m	23 °C 30% r.F.	10 ¹⁶	10 ¹⁶	10 ¹⁶	10 ¹⁶	10 ¹⁶	10 ¹⁶
Specific surface resistance 23 °C (73 °F)-80% RH	Ω/m	23 °C 30% r.F.	10 ¹²	10 ¹²	10 ¹²	10 ¹²	10 ¹²	10 ¹²
CTI		UL	1	1	1	1	1	1

Properties	Unit	Method	Value					
Total thickness	µm		125	190	250	300	350	
Dielectric strength	kV	ASTM D-149	15	15	17,5	20	20	
Dielectric constant (AC 50 Hz, 25 °C)		ASTM D-150	3,3	3,3	3,3	3,3	3,3	
Dielectric loss factor (AC 50 Hz, 25 °C)		ASTM D-257 ASTM D-2305	0,0025	0,0025	0,0025	0,0025	0,0025	
Specific volume resistance	Ω/m	23 °C 30% r.F.	10 ¹⁸	10 ¹⁸	10 ¹⁸	10 ¹⁸	10 ¹⁸	
Specific surface resistance 23 °C (73 °F)-30% RH	Ω/m	23 °C 30% r.F.	10 ¹⁶	10 ¹⁶	10 ¹⁶	10 ¹⁶	10 ¹⁶	
Specific surface resistance 23 °C (73 °F)-80% RH	Ω/m	23 °C 30% r.F.	10 ¹²	10 ¹²	10 ¹²	10 ¹²	10 ¹²	
CTI		UL	1	1	1	1	1	

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Mechanical properties	Unit	Method	Value					
Thickness	µm		19	23	36	50	75	100
Specific weight	g/m ²		27	32	50	70	105	140
Yield	m ² /kg		38	31	20	14	9,6	7,2
Tensile strenght longitudinal	N/mm ²	ASTM D-882	190	190	190	190	190	190
Tensile strenght transversal	N/mm ²	ASTM D-882	190	190	190	190	190	190
Elongation at break longitudinal	%	ASTM D-882	120	120	120	120	120	120
Elongation at break transversal	%	ASTM D-882	110	110	110	120	120	120
Shrinkage (30 min at 150 °C) longitudinal	%	ASTM D-1204	1,8	1,8	1,8	1,8	1,8	1,8
Shrinkage (30 min at 150 °C) transversal	%	ASTM D-1204	1,8	1,8	1,8	1,8	1,8	1,8

Mechanical properties	Unit	Method	Value					
Thickness	µm		125	190	250	300	350	
Specific weight	g/m ²		175	265	350	418	490	
Yield	m ² /kg		5,7	3,8	2,9	2,4	2	
Tensile strenght longitudinal	N/mm ²	ASTM D-882	180	190	190	160	160	
Tensile strenght transversal	N/mm ²	ASTM D-882	160	160	160	160	160	
Elongation at break longitudinal	%	ASTM D-882	120	120	120	120	120	
Elongation at break transversal	%	ASTM D-882	120	120	120	120	120	
Shrinkage (30 min at 150 °C) longitudinal	%	ASTM D-1204	1,8	1,8	1,8	1,8	1,8	
Shrinkage (30 min at 150 °C) transversal	%	ASTM D-1204	1,8	1,8	1,8	1,8	1,8	

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