SynFlex Elektro GmbH
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SynTherm® VPV

SynTherm® VPV is a flexible 3-ply insulating material made of polyester film with a layer of polyester non-woven on both sides.

Attributes

SynTherm® VPV is an insulating material without additional impregnants, which can be used for insulation class F (155 °C) systems after through impregnation with varnishes or resins of the corresponding insulation class. The ability of the non-woven layers to absorb impregnants results in outstanding saturation of the slot surfaces and exceptional bonding of all winding components with the laminated core.

SynTherm® VPV is characterised by its high resistance to moisture and chemicals and excellent dielectric strength. The smooth surface of the SynTherm® VPV makes the material ideal for machining.

Application

SynTherm® VPV is used as slot insulation and phase insulation in electric machines. SynTherm® VPV is used as interlayer insulation and final insulation in transformers.

Standards

- Suitable for insulation class F 155 °C systems after impregnation with high quality class F or H varnishes or resins (file-no. E247773)

Delivery forms

Film thickness in µm:

90, 120, 150, 180, 200, 230, 300, 350, 450

SynTherm® VPV can be supplied:

- in slit rolls from widths of 10 mm and above
- in rolls approx. 630 mm or 1,260 mm
- in sheets approx. 630 mm x 800 mm or
  approx. 800 mm x 1,260 mm

Feathering:

- depth approx. 1 - 12 mm, distance approx. 1 - 10 mm
- from widths of 10 to 240 mm and thickness of 0.23 mm

Base

PET-film + polyester non-woven on both sides

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Mechanical	Unit of measure						
Nominal thickness	mm	0.09	0.12	0.15	0.18	0.20	0.23
Typical thickness	mm	0.09	0.12	0.15	0.18	0.20	0.23
Thickness tolerance max.	%	±15	± 15	± 15	± 15	± 15	± 15
Specific weight	g/m²	80	115	145	190	220	260
Film thickness	µm	23	23	50	75	100	125
Elongation at break (unfold) longitudinal	%	15	20	20	20	20	20
Elongation at break (unfold) transversal	%	50	50	50	50	50	50
Tensile strength longitudinal	N/10 mm	50	50	110	140	160	200
Tensile strength transversal	N/10 mm	40	40	90	105	120	150

Mechanical	Unit of measure			
Nominal thickness	mm	0.28	0.34	0.45
Typical thickness	mm	0.30	0.35	0.45

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Mechanical	Unit of measure			
Thickness tolerance max.	%	± 15	± 10	± 10
Specific weight	g/m²	350	425	560
Film thickness	µm	190	250	350
Elongation at break (unfold) longitudinal	%	20	20	20
Elongation at break (unfold) transversal	%	50	50	50
Tensile strength transversal	N/10 mm	200	300	350
Tensile strength longitudinal	N/10 mm	300	350	400

Electrical	Unit of measure						
Nominal thickness	mm	0.09	0.12	0.15	0.18	0.20	0.23
Dielectric strength (unfold)	kV	4	4	6	7	9	10

Electrical	Unit of measure			
Nominal thickness	mm	0.30	0.35	0.45
Dielectric strength (unfold)	kV	15	18	22