SynFlex Elektro GmbH
Auf den Kreuzen 24
D-32825 Blomberg Germany
Telefon +49-5235-968-0
E-Mail info@synflex.de

SynTherm® NPN/50

SynTherm® NPN/50 is a flexible 3-ply insulation consisting of a polyester film with a calandered Nomex® layer with yellow strips.

Attributes

The proven dielectric properties of the polyester film and the excellent mechanical and thermal properties of the outer Nomex® layers result in a high performance insulating material. The ability of the outer layers to absorb impregnants results in exceptional bonding between all winding components.

Application

SynTherm® NPN/50 is a cost-effective insulating material which can be installed in suitable insulating systems of class H (180 °C) and is used in electric motors as slot insulation, phase insulation and wedges. SynTherm® NPN/50 is used as core, interlayer und final insulation for transformers.

Standards

- Suitable for class H (180 °C) systems
- Insulating material according to IEC 60626
- UL approved, e.g. E247773
- Test standard IEC 60626-2
- Sample conditioning acc. to standard atmosphere 23/50

Delivery forms

Total thickness in µm:

130, 160, 180, 220, 240, 310, 370, 410, 470

SynTherm® NPN/50 can be supplied:

- in slit rolls from widths of 6 mm (depending on thickness) and above
- in rolls approx. width of 900 mm
- in sheets on request: approx. 600 x 900 mm or 900 x 1000 mm

Optional overall diameter of the slit rolls/ rolls

approx. 240, 330 or 450 mm.

Feathering:

- depth approx. 1 - 12 mm, distance approx. 1 - 10 mm

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Updated 07/21

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- from widths of 10 to 240 mm and thickness of 0.24 mm

Base

PET-film + calandered Nomex® on both sides

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Mechanical	Unit of measure						
Total thickness	mm	0.13	0.16	0.18	0.22	0.24	0.31
Thickness tolerance max.	%	± 15	± 15	± 15	± 15	± 15	± 15
Film thickness	µm	23	50	75	100	125	190
Nomex® paper thickness	µm	50	50	50	50	50	50
Specific weight	g/m²	140	170	200	230	270	360
Elongation at break longitudinal*	%	15	15	15	15	20	20
Elongation at break transversal*	%	20	20	20	20	20	25
Tensile strength longitudinal	N/10 mm	100	150	170	190	220	270
Tensile strength transversal	N/10 mm	80	90	105	120	150	200

Mechanical	Unit of measure			
Total thickness	mm	0.37	0.41	0.47
Thickness tolerance max.	%	± 10	± 10	± 10

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Mechanical	Unit of measure			
Film thickness	µm	250	300	350
Nomex® paper thickness	µm	50	50	50
Specific weight	g/m²	450	520	590
Elongation at break longitudinal*	%	20	20	20
Elongation at break transversal*	%	25	25	25
Tensile strength longitudinal	N/10 mm	330	350	400
Tensile strength transversal	N/10 mm	300	310	350

Electrical	Unit of measure						
Total thickness	mm	0.13	0.16	0.18	0.22	0.24	0.31
Dielectric strength	kV	6	8	11	12	14	19

Electrical	Unit of measure			
Total thickness	mm	0.37	0.41	0.47
Dielectric strength	kV	23	23	23

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