

---

## 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

The information on this data sheet is based on the information provided by our supplier. It does not represent any specification or agreements regarding conditions or properties. The indicated values are standard values. Deviations from those values due to production and application cannot be excluded. The information on this data sheet is addressed to experts who use it at their own discretion and at their own risk. We do not guarantee results, or accept liability for the indicated specifications or for results obtained based on the specifications. Please contact us for more detailed information. Non-toxic and toxic substances are listed on the safety data sheet.  
Updated 07/21

Nomex® is a registered trademark of E.I. Du Pont de Nemours and Company.  
SynTherm® is a registered trademark of SynFlex.



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

## **Base**

PET-film + calandered Nomex® on both sides

The information on this data sheet is based on the information provided by our supplier. It does not represent any specification or agreements regarding conditions or properties. The indicated values are standard values. Deviations from those values due to production and application cannot be excluded. The information on this data sheet is addressed to experts who use it at their own discretion and at their own risk. We do not guarantee results, or accept liability for the indicated specifications or for results obtained based on the specifications. Please contact us for more detailed information. Non-toxic and toxic substances are listed on the safety data sheet.  
Updated 07/21

Nomex® is a registered trademark of E.I. Du Pont de Nemours and Company.  
SynTherm® is a registered trademark of SynFlex.



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/m <sup>2</sup>	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 transversal	N/10 mm	80	90	105	120	150	200
Tensile strength longitudinal	N/10 mm	100	150	170	190	220	270

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

The information on this data sheet is based on the information provided by our supplier. It does not represent any specification or agreements regarding conditions or properties. The indicated values are standard values. Deviations from those values due to production and application cannot be excluded. The information on this data sheet is addressed to experts who use it at their own discretion and at their own risk. We do not guarantee results, or accept liability for the indicated specifications or for results obtained based on the specifications. Please contact us for more detailed information. Non-toxic and toxic substances are listed on the safety data sheet.  
Updated 07/21

Nomex® is a registered trademark of E.I. Du Pont de Nemours and Company.  
SynTherm® is a registered trademark of SynFlex.



<b>Mechanical</b>	Unit of measure			
Film thickness	µm	250	300	350
Nomex® paper thickness	µm	50	50	50
Specific weight	g/m <sup>2</sup>	450	520	590
Elongation at break longitudinal*	%	20	20	20
Elongation at break transversal*	%	25	25	25
Tensile strength transversal	N/10 mm	300	310	350
Tensile strength longitudinal	N/10 mm	330	350	400

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

<b>Electrical</b>	Unit of measure		
Dielectric strength*	kV	23	23
Total thickness	mm	0.37	0.41
Total thickness	µm	0.47	

The information on this data sheet is based on the information provided by our supplier. It does not represent any specification or agreements regarding conditions or properties. The indicated values are standard values. Deviations from those values due to production and application cannot be excluded. The information on this data sheet is addressed to experts who use it at their own discretion and at their own risk. We do not guarantee results, or accept liability for the indicated specifications or for results obtained based on the specifications. Please contact us for more detailed information. Non-toxic and toxic substances are listed on the safety data sheet.  
Updated 07/21

Nomex® is a registered trademark of E.I. Du Pont de Nemours and Company.  
SynTherm® is a registered trademark of SynFlex.

