
SynTherm® NKN

SynTherm® NKN is a flexible 3-ply insulation. It consists of a 25 µm polyimide film with calandered Nomex® layer on both sides.

Attributes

The excellent dielectric and thermal properties of the polyimide film and the outstanding thermal and mechanical properties of the Nomex® layers result in a high quality insulating material. The outer aramide layers protect the polyamide film against the effects of hydrolysis and mechanical load. The high specific volume resistance and the dielectric strength are not affected by temperatures below 200 °C.

Application

SynTherm® NKN is used in electric motors with a high load factor as slot insulation, phase insulation and wedges. Furthermore, it can be used in transformers and other electrical equipment as core, interlayer and final insulation if very high temperature resistance is required with simultaneous mechanical load.

Standards

- Suitable for class C (200 °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:

200, 300, 350, 400, 530

SynTherm® NKN 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 approx. 600 x 900 mm
- 900 x 1000 mm

Overall diameter of the slit rolls/ rolls as required

approx. 240, 330 or 450 mm.

Feathering:

- depth approx. 1 - 12 mm, distance approx. 1 - 10 mm
- from widths of 10 to 240 mm and thickness of 0.20 mm

Base

Polyimid-film + calendered Nomex® 2-sided

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Updated 06/24



| Mechanical | Unit of measure | | | | | |
|----------------------------------|------------------|------|------|---------|------|------|
| Total thickness | mm | 0.2 | 0.3 | 0.35 | 0.4 | 0.53 |
| Thickness tolerance | % | ± 15 | ± 15 | ±15 | ± 15 | ± 15 |
| Polyimide film thickness | µm | 25 | 25 | 25 | 25 | 25 |
| Nomex® paper thickness | µm | 80 | 130 | 130/180 | 180 | 250 |
| Specific weight | g/m ² | 190 | 300 | 355 | 410 | 560 |
| Elongation at break longitudinal | % | 15 | 15 | 15 | 15 | 15 |
| Elongation at break transversal | % | 15 | 15 | 15 | 15 | 15 |
| Tensile strength transversal | N/10 mm | 100 | 150 | 225 | 240 | 350 |
| Tensile strength longitudinal | N/10 mm | 160 | 270 | 430 | 450 | 650 |

| Electrical | Unit of measure | |
|---------------------|-----------------|-----|
| Total thickness | mm | 0.2 |
| Dielectric strength | kV | 7 |

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| Electrical | Unit of measure | | | | |
|---------------------|-----------------|-----|------|-----|------|
| Total thickness | mm | 0.3 | 0.35 | 0.4 | 0.53 |
| Dielectric strength | kV | 7 | 7 | 7 | 7 |

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