

TECHNICAL DATA

HYPERTHERM® FPS - Nomex® Type 411/Polyester Film Laminates

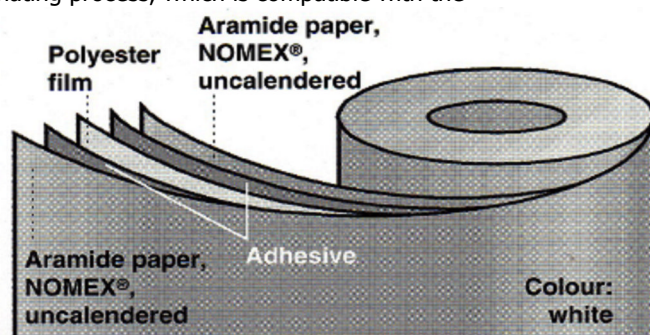
DESCRIPTION

The Hypertherm® FPS range of composite materials are constructed by laminating uncalendared Nomex® Type 411 aramide papers to both sides of Polyester (PET) Film in various thickness combinations.

A specially formulated synthetic adhesive is employed in the laminating process, which is compatible with the individual component layers.

PROPERTIES

- High tear strength
- High inter-laminar shear strength
- Insulation Class F (155°C) according to IEC 85
- Can be used in insulation systems up to 180°C (Class H) according to IEC 626-3
- High electric strength, even at elevated temperatures



APPLICATIONS

Due to its flexibility, high dielectric strength & ability to absorb impregnating varnishes & resins, Hypertherm® FPS is universally employed as end-winding & phase insulation in electric machines.

STANDARD DIMENSIONS & FORMATS

Grade Combination	Nominal Thickness mm	Tolerance ± %	Area Weight g/m ²	Tolerance ± %	Nomex® Thickness mm	PET Film Thickness mm	Nomex® Thickness mm	Standard Widths mm	Standard Core mm
5/1/5	0.28	20	135	12	0.13	0.023	0.13	940	75
5/2/5	0.30	20	170	12	0.13	0.050	0.13	940	75
5/5/5	0.40	20	280	12	0.13	0.125	0.13	940	75

PHYSICAL PROPERTIES

Grade Combination	Nominal Thickness mm	Tensile Strength Longitudinal N/10mm	Tensile Strength Transverse N/10mm	Elongation Longitudinal %	Elongation Transverse %	Dielectric Strength kV	Shrinkage Longitudinal %	Shrinkage Transverse %	Moisture Content Approx. %
5/1/5	0.28	≥ 60	≥ 60	≥ 6	≥ 8	≥ 5	≤ 1.5	≤ 1.5	5.5
5/2/5	0.30	≥ 75	≥ 75	≥ 7	≥ 10	≥ 6	≤ 1.5	≤ 1.5	4.7
5/5/5	0.40	≥ 160	≥ 180	≥ 10	≥ 20	≥ 13	≤ 2.0	≤ 2.0	2.9

Duplex & other grade combinations available to order.

Hypertherm® FPS can also be produced with a self-adhesive layer on one side.

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CONVERTED PARTS

As well as standard rolls, Hypertherm® FPS can be converted to customer requirements as follows:

- Slit tapes from 6mm wide upwards
- Creased parts
- Stampings/punched parts
- Cut parts

STORAGE

Storage	Cool, dry conditions
Shelf life	Indefinite