

TECHNICAL DATA

HYPERTHERM® H - Nomex®/Kapton® Film Laminates

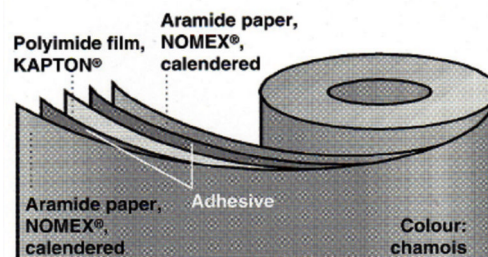
DESCRIPTION

The Hypertherm® H range of composite materials are constructed by laminating calendared Nomex® aramide papers to both sides (Triplex) or one (Duplex) side of Kapton® Polyimide Films 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 H (180°C) according to IEC 85
- Can be used in insulation systems up to 200°C according to IEC 626-3
- High electric strength, even at elevated temperatures



APPLICATIONS

Hypertherm® H is universally employed in Class H rotating electric machines in the following forms:

- Slot insulation
- Stampings
- Slot closures
- Interleaving insulation

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
3/1	0.12	15	110	12	0.080	0.025		900	75
5/1	0.16	15	160	12	0.125	0.025		900	75
7/1	0.22	15	230	12	0.180	0.025		900	75
10/1	0.30	15	290	12	0.250	0.025		900	75
12/1	0.33	15	365	12	0.300	0.025		900	75
3/1/3	0.20	10	190	12	0.080	0.025	0.080	900	75
5/1/5	0.30		300	12	0.125	0.025	0.125	900	
7/1/7	0.40	15	410	12	0.180	0.025	0.180	900	75
3/2/3	0.25	15	255	12	0.080	0.050	0.080	900	75
5/2/5	0.33	15	325	12	0.125	0.050	0.125	900	75
7/2/7	0.40	15	325	12	0.180	0.050	0.180	900	75

Other grade combinations available to order.

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PHYSICAL PROPERTIES

Grade Combination	Nominal Thickness	Tensile Strength Longitudinal	Tensile Strength Transverse	Elongation Longitudinal	Elongation Transverse	Dielectric Strength	Shrinkage Longitudinal	Shrinkage Transverse	Moisture Content Approx.
Thou	mm	N/10mm	N/10mm	%	%	kV	%	%	%
3/1	0.12	≥ 90	≥ 60	≥ 15	≥ 14	≥ 4	≤ 0.5	≤ 1.0	6.4
5/1	0.16	≥ 120	≥ 80	≥ 15	≥ 14	≥ 6	≤ 0.5	≤ 1.0	6.4
7/1	0.22	≥ 160	≥ 100	≥ 15	≥ 15	≥ 8	≤ 0.5	≤ 1.0	6.4
10/1	0.30	≥ 200	≥ 120	≥ 15	≥ 15	≥ 9	≤ 0.5	≤ 1.0	6.5
12/1	0.33	≥ 210	≥ 160	≥ 15	≥ 15	≥ 9	≤ 0.5	≤ 1.0	6.5
3/1/3	0.20	≥ 180	≥ 110	≥ 15	≥ 15	≥ 8	≤ 0.5	≤ 1.0	5.7
5/1/5	0.30	≥ 300	≥ 180	≥ 15	≥ 15	≥ 9	≤ 0.5	≤ 1.0	6.2
7/1/7	0.40	≥ 400	≥ 230	≥ 15	≥ 15	≥ 11	≤ 0.5	≤ 1.0	6.4
3/2/3	0.25	≥ 300	≥ 200	≥ 15	≥ 15	≥ 10	≤ 0.5	≤ 1.0	5.3
5/2/5	0.33	≥ 330	≥ 230	≥ 15	≥ 15	≥ 10	≤ 0.5	≤ 1.0	5.5
7/2/7	0.40	≥ 350	≥ 260	≥ 15	≥ 15	≥ 11	≤ 0.5	≤ 1.0	5.9

CONVERTED PARTS

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

- Slit tapes from 6mm wide upwards
- Creased parts, including pre-formed slot closures
- Stampings/punched parts
- Cut parts

STORAGE

Storage	Cool, dry conditions
Shelf life	Indefinite