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## SynTherm® YT510 (metastar® YT510)

SynTherm® YT510 is a synthetic electro-insulation paper constructed of a calandered, aromatic polyamide fibrille flock composition.

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### Attributes

SynTherm® YT510 is a Class H (180 °C) insulating material. Temperatures below 200 °C only slightly influence its electrical properties. The excellent mechanical properties can be extrapolated at much higher temperatures. Due to the polymer structure, SynTherm® YT510 can also be used at temperatures as low as -190 °C.

It has a high short-time field intensity. SynTherm® YT510 is compatible with all common resin, varnish, adhesive classes, as well as transformer liquids, oils and refrigerants. Common solvents can result in easily reversible expansion. SynTherm® YT510 paper is flame resistant (UL 94V-0), moreover, it displays a very high level of beta and gamma-ray resistance.

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### Application

High quality SynTherm® YT510 is used in almost all known applications for electrical insulating materials. Application ranges from AC and DC motors to large generators, wet and dry transformers and chokes, even with beta and gamma radiation exposure.

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### Standards

- Class H (180 °C) insulating material
- UL approved (RTI 210 °C)
- UL file no. E358562

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### Delivery forms

#### Film thickness in µm:

50, 80, 130, 180, 250, 300, 380, 510, 760

#### SYNTHERM® YT510 can be supplied:

- in slit rolls: Depending on the material thickness
- in rolls: 1000 mm

#### Feathering:

- depth approx. 1 - 12 mm, distance approx. 1 - 10 mm
- from widths of 10 to 240 mm and thickness of 0.25 mm

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## Base

Calandered, aromatic polyamide fibrille flock composition

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<b>Mechanical</b>	Unit of measure						
Nominal thickness	µm	50	80	130	180	250	300
Typical thickness	µm	55	78	130	180	245	290
Specific weight	g/m <sup>2</sup>	41	63	116	175	249	309
Tensile strength longitudinal	N/cm	39	66	140	220	255	320
Tensile strength transversal	N/cm	15	29	56	105	165	200
Elongation at break longitudinal	%	7	8.5	10	11	13.5	16
Elongation at break transversal	%	6.5	9	11.5	12.5	14.5	15.5
Shrinkage at 300 °C longitudinal	%	3.5	3.5	3.0	3.0	3.0	3.0
Shrinkage at 300 °C transversal	%	3.0	3.0	2.5	2.5	2.5	2.5
Elmendorf tear strength longitudinal	N	0.65	1.0	2.0	3.5	5.0	6.5
Elmendorf tear strength transversal	N	1.15	1.7	3.3	4.8	6.0	8.0

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<b>Mechanical</b>	Unit of measure				Test method
Nominal thickness	µm	380	510	760	
Typical thickness	µm	365	515	755	GB/T451.3-2002
Specific weight	g/m <sup>2</sup>	390	510	690	GB/T451.2-2002
Tensile strength longitudinal	N/cm	380	500	650	GB/T12914-2008
Tensile strength transversal	N/cm	260	345	450	GB/T12914-2008
Elongation at break longitudinal	%	13	13	13	GB/T12914-2008
Elongation at break transversal	%	12	13	12	GB/T12914-2008
Shrinkage at 300 °C longitudinal	%	3.0	3.0	3.0	IEC60819-2:2002
Shrinkage at 300 °C transversal	%	2.5	2.0	2.0	IEC60819-2:2002
Elmendorf tear strength longitudinal	N	10	13	-	GB/T455-2002
Elmendorf tear strength transversal	N	13.5	16	-	GB/T455-2002

<b>Electrical</b>	Unit of measure						
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Electrical	Unit of measure						
Nominal thickness	µm	50	80	130	180	250	300
Field intensity	kV/mm	13	14	18	20	22	23
Dielectric constant (50 Hz)		1.5	1.5	2.1	2.4	2.5	2.7

Electrical	Unit of measure				Test method
Nominal thickness	µm	380	510	760	
Field intensity	kV/mm	20	18	19	GB/T1408.1-2006
Dielectric constant (50 Hz)		3.0	3.1	3.2	GB/T1409-2006

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