
Teonex® Q5100

Teonex® Q5100 is a flexible, slightly cloudy, biaxially oriented polyethylenenaphthalate (PEN) film.

Attributes

Compared to PET polyester film, Teonex® Q5100 has optimum properties in every respect.

The increased temperature resistance results in film approval in thermal class F (155 °C). It has a electrical relative temperature index (RTI) of 180 °C and a mechanical RTI of 160 °C according to UL.

Further advantages of Teonex® Q5100 are:

- extremely high dielectric strength
- very good mechanical strength
- high-level of stiffnes
- low water absorption
- easy to laminate

Application

Teonex® Q5100 was specially developed for use in electric motors with increased load as slot insulation, phase insulation and wedges.

Standards

- Class F (155 °C) insulating material
- UL approved, file no. E51743

Delivery forms

Film thicknesses in µm:

- from 12, 16, 25, 38, 50, 75, 100, 125, 188, 250

Teonex® Q5100 can be supplied:

- in slit rolls from widths of 6 mm (depending on thickness) and above.
- in rolls up to a width of 1,000 mm

Overall diameter of the slit rolls/ rolls

- approx. 240, 330 or 450 mm.

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Feathering:

- depth approx. 1 - 12 mm, distance approx. 1 - 10 mm
- from widths of 10 to 240 mm and thickness of 0.125 mm

Base

Polyethylennaphthalte

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Mechanical	Unit of measure						
Nominal thickness	µm	12	16	25	38	50	75
Tensile strength longitudinal	MPa	300	330	340	320	290	290
Tensile strength transversal	MPa	330	340	350	320	300	280
Elongation at break longitudinal	%	100	90	100	110	120	100
Elongation at break transversal	%	90	80	90	110	120	100
Shrinkage (30 min at 150 °C) longitudinal	%	0.7	1.0	1.0	0.5	0,4	0.5
Shrinkage (30 min at 150 °C) transversal	%	0.3	0,3	0.4	0.3	0.3	0.4
Shrinkage at 200 °C longitudinal	%	2.6	2.7	2.7	1.2	0.8	1.0
Shrinkage at 200 °C transversal	%	3.5	1.7	1.9	1.3	0.8	1.0

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Mechanical	Unit of measure					Test method
Nominal thickness	µm	100	125	188	250	
Tensile strength longitudinal	MPa	260	260	250	210	JIS C2318
Tensile strength transversal	MPa	280	260	240	190	JIS C2318
Elongation at break longitudinal	%	110	100	110	120	JIS C2318
Elongation at break transversal	%	100	100	100	110	JIS C2318
Shrinkage (30 min at 150 °C) longitudinal	%	0.3	0,2	0.2	0.2	JIS C2318
Shrinkage (30 min at 150 °C) transversal	%	0.4	0.3	0.4	0.3	JIS C2318
Shrinkage at 200 °C longitudinal	%	0.9	1.0	1,1	0.9	JIS C2318
Shrinkage at 200 °C transversal	%	1.1	0.8	0.7	0.7	JIS C2318

Electrical	Unit of measure	
Nominal thickness	µm	12
Dielectric strength	kV	9.6

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Electrical	Unit of measure						
Nominal thickness	µm	16	25	38	50	75	100
Dielectric strength	kV	9.6	8.1	11.2	12.7	16.2	18.0

Electrical	Unit of measure				Test method
Nominal thickness	µm	125	188	250	
Dielectric strength	kV	20.7	25.0	28.7	

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