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## Teonex® Q5100

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

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### 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

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### Application

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

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### Standards

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

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### 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

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### Base

Polyethylenaphthalte

<b>Mechanical</b>	<b>Unit of measure</b>						
Nominal thickness	µm	12	16	25	38	50	75
Tensile strength longitudinal	MPa	305	319	314	263	269	262
Tensile strength transversal	MPa	306	334	320	254	284	261
Elongation at break longitudinal	%	82	79	75	113	89	84
Elongation at break transversal	%	82	91	88	89	95	93
Shrinkage (30 min at 150 °C) longitudinal	%	0.1	0.2	0.1	0.6	0,0	0.3
Shrinkage (30 min at 150 °C) transversal	%	1.1	0,9	0.8	0.5	0.6	0.4
Shrinkage at 200 °C longitudinal	%	2.6	2.6	3.2	1.2	1.2	0.8
Shrinkage at 200 °C transversal	%	3.8	3.3	3.2	1.3	1.8	1.0

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Updated 08/22

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Mechanical	Unit of measure					Test method
Nominal thickness	µm	100	125	188	250	JIS C2151
Tensile strength longitudinal	MPa	265	234	246	200	JIS C2318
Tensile strength transversal	MPa	264	257	244	210	JIS C2318
Elongation at break longitudinal	%	98	100	108	111	JIS C2318
Elongation at break transversal	%	100	117	109	143	JIS C2318
Shrinkage (30 min at 150 °C) longitudinal	%	0.6	-0.1	0.4	0.5	JIS C2318
Shrinkage (30 min at 150 °C) transversal	%	0.3	0.4	0.3	0.2	JIS C2318
Shrinkage at 200 °C longitudinal	%	1.0	-0.2	1,1	0.9	JIS C2318
Shrinkage at 200 °C transversal	%	1.0	0.8	0.7	0.4	JIS C2318

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

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Electrical	Unit of measure						
Nominal thickness	µm	16	25	38	50	75	100
Dielectric strength	kV	-	8	10	13	15	18

Electrical	Unit of measure				Test method
Nominal thickness	µm	125	188	250	JIS C2318
Dielectric strength	kV	20	25	29	JIS C2318

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