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3M™ TufQUIN™ TPIT3

High Temperature Flexible Laminates

DESCRIPTION

TufQUIN™ TPIT3 is a triplex laminate consisting of 3 mil (0.075mm) TufQUIN™ hybrid insulating paper bonded to both sides of polyimide (PI) film.

ADVANTAGES

TPIT laminates combine the high ageing resistance of polyimide film with the excellent thermal and dielectric properties of TufQUIN™ papers. The high thermal conductivity of TPIT laminates promotes cooler running of equipment, leading to longer insulation life, better reliability and more efficient use of power.
Additionally, the inorganic content of TufQUIN™ provides excellent resistance to hot cut-through in high temperature applications. TPIT laminates are non-hydroscopic and exhibit low moisture absorption characteristics thus reducing the need for extended drying cycles prior to varnish or resin impregnation.
The good elongation characteristics of TPIT laminates absorb the stress in heavy-duty winding applications.

CERTIFICATION

TufQUIN™ TPIT laminates are UL certified as an electrical insulation component for use up to 200°C (Class N) per UL 1446 and IEC standard 61857; UL File E65007.

APPLICATIONS

TufQUIN™ TPIT laminates find use as slot insulation, phase insulation and slot closures in electric motors, as well as inter-layer insulations in transformer and magnet coils.
TPIT laminates are well suited for producing punched parts and for automatic insertion processing.

CONVERTED PARTS

As well as standard rolls, TufQUIN™ TPIT can be converted to customer requirements as follows:

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



TufQUIN TPIT3 TECHNICAL DATA

PROPERTIES		UNIT	TufQUIN™ TPIT3				
Composition, IEC 60626-2/4		mil	**3/1/3**	**3/2/3**	**3/3/3**	**3/4/3**	**3/5/3**
Thickness, IEC 60626-2/4		mm	0.18	0.20	0.23	0.25	0.28
TufQUIN™ paper thickness, IEC 60626-2/4		mil	3	3	3	3	3
PI film thickness, IEC 60626-2/4		mil	1	2	3	4	5
Area weight, IEC 60626-2/5		g/m^2	239	286	301	338	371
Elongation, IEC 60626-2/7	MD	%	> 15	> 15	> 15	> 15	> 15
	CMD	%	> 15	> 15	> 15	> 15	> 15
Tensile strength, IEC 60626-2/7	MD	N/cm	> 160	> 160	> 200	> 200	> 280
	CMD	N/cm	> 120	> 120	> 180	> 180	> 220
Shrinkage, IEC 60626-2/10	MD	%	1.5	1.5	1.5	1.5	1.5
	CMD	%	1.1	1.1	1.1	1.1	1.1
Breakdown voltage, IEC 60626-2/10		kV	6	9	11	12	14
Maximum moisture content, IEC 60626-2/12		%	1	1	1	1	1
Temperature class, IEC 61857		°C	200	200	200	200	200

*Standard tolerance on thickness & area weight is ± 15%

Other thicknesses & combinations available to order.