Ceramosite™ TFT2

1. COMPOSITION

Ceramosite™ TFT2 consists of PET film covered on both sides with 3M TufQUIN™ 2mil (0,050mm) mineral insulation paper.

2. GENERAL CHARACTERISTICS

The TFT composite combines the high mechanical and dielectrical strength of polyester film with the excellent thermal and dielectric characteristics of mineral papers.

With the thermally stable outer layers of 3M TufQUIN™ the composite is certified by UL as component for electrical insulation systems in CLASS 200(N). The high thermal conductivity of 3M TufQUIN/film laminates promotes cooler running equipment, leading to longer insulation life, better reliability, and more efficient use of power. Additionally, the inorganic content in 3M TufQUIN provides excellent resistance to hot cut-through in high temperature applications. TFT laminates are non-hygroscopic and exhibit low moisture absorption characteristics, thus reducing the need for extended drying cycles prior to varnishing or encapsulation.

Due to the central polyester-ply TFT has a good memory shape and snapback. TFT laminates exhibit also excellent resistance to tear initiation and tear propagation in both the machine direction and cross direction. The good elongation characteristics let TFT laminates absorb the stress of heavy-duty winding applications.

As approved 3M laminator the Ceramosite™ TFT laminates of MaterialPartner Technische Werkstoffe GmbH are qualified for use as major ground insulation in electrical insulation systems rated through Class 200(N) per UL 1446 and IEC Std. 61857. 3M Innovative Paper Technologies UL Recognized Insulation Systems (File No. E65007) may be found on UL's Electrical Insulation Systems Database at http://www.database.ul.com

3. APPLICATIONS

- Wedges and slot insulation in electrical motors
- Phase insulation in electrical motors
- Interlayer insulation in transformer and magnet coils
- Automated insertion processing
- Wrap application on rectangular copper and aluminium conductors
- …

4. TECHNICAL VALUES

Nominal Thickness			[mm]	0,12	0,13	0,15	0,18	0,20
Composition		IEC 60626-2 / 4	[µm]	50/12/50	50/23/50	50/50/50	50/75/50	50/100/50
Thickness Film		IEC 60626-2 / 4	[µm]	12	23	50	75	100
Composition		IEC 60626-2 / 4	[mil]	2-0,5-2	2-1-2	2-2-2	2-3-2	2-4-2
Thickness Film		IEC 60626-2 / 4	[mil]	0,5	1	2	3	4
Area Weight		IEC 60626-2 / 5	[g/m2]	125	144	180	215	250
Elongation	MD	IEC 60626-2 / 7	[%]	30	27	26	29	28
	CD	IEC 60626-2 / 7	[%]	40	43	83	91	114
Tensile Strength	MD	IEC 60626-2 / 7	[N/cm]	60	91	124	149	182
	CD	IEC 60626-2 / 7	[N/cm]	50	68	123	159	184
Shrinkage	MD		[%]	1,5	1,5	1,5	1,5	1,5
	CD		[%]	1,1	1,1	1,1	1,1	1,1
Breakdown Strength		IEC 60626-2 / 10	[kV]	4	6	8	10	12
Max. Moisture Content		IEC 60626-2 / 12	[%]	1	1	1	1	1
Temperature Class		IEC 61857	[°C]	200	200	200	200	200
Thermal Conductivity		ASTM E-1530	[W/mK]	0,16	0,16	0,16	0,16	0,16

Nominal Thickness			[mm]	0,23	0,29	0,36	0,41	0,46
Composition		IEC 60626-2 / 4	[µm]	50/125/50	50/190/50	50/250/50	50/300/50	50/350/50
Thickness Film		IEC 60626-2 / 4	[µm]	125	190	250	300	350
Composition		IEC 60626-2 / 4	[mil]	2-5-2	2-7,5-2	2-10-2	2-12-2	2-14-2
Thickness Film		IEC 60626-2 / 4	[mil]	5	7,5	10	12	14
Area Weight		IEC 60626-2 / 5	[g/m2]	285	379	460	530	600
Elongation	MD	IEC 60626-2 / 7	[%]	26	28	36	34	40
	CD	IEC 60626-2 / 7	[%]	118	124	120	81	116
Tensile Strength	MD	IEC 60626-2 / 7	[N/cm]	198	259	340	389	436
	CD	IEC 60626-2 / 7	[N/cm]	292	417	432	510	639
Shrinkage	MD		[%]	1,5	1,5	1,5	1,5	1,5
	CD		[%]	1,1	1,1	1,1	1,1	1,1
Breakdown Strength		IEC 60626-2 / 10	[kV]	14	18	22	25	30
Max. Moisture Content		IEC 60626-2 / 12	[%]	1	1	1	1	1
Temperature Class		IEC 61857	[°C]	200	200	200	200	200
Thermal Conductivity		ASTM E-1530	[W/mK]	0,16	0,16	0,16	0,16	0,16

5. STORAGE AND AVAILABILITY

- Shelf life is 18 months from EXW date in original packing and under normal conditions (room temperature, 50% relative humidity)
- Standard width is 930 mm
- Available from 10 mm width upwards

6. NOTES

All statements, technical information, and recommendations contained in this document are based on tests or experience that we believe are reliable. However, many factors beyond our control can affect the use and performance of a product in a particular application, including the conditions under which the product is used and the time and environmental conditions in which the product is expected to perform. Since these factors are uniquely within the user's knowledge and control, it is essential that the user evaluates the product to determine whether it is fit for a particular purpose and suitable for the user's method or application.

Values presented have been determined by standard test methods and are average values not meant to be used for specification purposes. Tolerances on thickness and area weight are +/- 15% if not stated differently.

All questions of warranty and liability relating to our products are governed by the terms of the respective sale subject, where applicable, to the prevailing law.

7. VERSIONING

Rev. 4 dated 16/07/2026