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New Information
Mailed to E, D, C/2183/PL, DB

Flexible Composites

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Inorganic Paper Composites

Asbestos Paper Composites

Asbestos is an inorganic compound whose melting point is well in excess of 1000F. The principal ones used in composites are manufactured under the trade names of "Quinterra"® and "Quinorgo"®. All are covered by Military Specification MIL-I-3503A as to the purity of asbestos.

The "Quinterra" and "Quinorgo" papers are classified as to the amount and composition of the binders they contain. Those containing organic binders are recommended for Class B (130C) use by the paper manufacturer. Equipment manufacturers, however, often use these products in composite form above Class B temperatures. The less expensive "Quinorgo" papers contain from 10% to 20% starch, wood pulp, or nitrile rubber as a binder. The more expensive "Quinterra" Class B papers contain from 15% to 25% polyvinyl acetate. Class F (155C) "Quinterra" papers contain from 40% to 50% epoxy resin. Class H (180C) "Quinterra" papers contain from 15% to 50% silicone resin as the binder. Tensile and tear strength of the papers are very low and depend upon the amount of binder used.

® TM Johns Manville Corp.

Type 4000 Quinorgo/Polyester Film

Product	Composite thickness ASTM D374 (Inches)	Yield Sq. Yds./Lb. Lbs./Sq. Yd.	Dielectric Strength ASTM D149 (2 In. Dia. Electrodes) (Volts)	Volume Resistivity * ASTM D257 (ohm/cms)	Surface Resistivity * ASTM D257 (ohms)	Tensile Strength ASTM D828 M.D. C.M.D. Lbs./In. of Width	Tear Strength Graves M.D. C.M.D. (Lbs.)
3-½	0.006	5.56	0.18	2,500	10 ¹⁵	10 ¹²	20 16
5-2-5	0.012	1.77	0.57	10,000	10 ¹⁴	10 ¹²	54 49

*Values Were Greater Than Values Shown.

Type 5000 Quinorgo/Polyester Film

Product	Composite thickness ASTM D374 (Inches)	Yield Sq. Yds./Lb. Lbs./Sq. Yd.	Dielectric Strength ASTM D149 (2 In. Dia. Electrodes) (Volts)	Volume Resistivity * ASTM D257 (ohm/cms)	Surface Resistivity * ASTM D257 (ohms)	Tensile Strength ASTM D828 M.D. C.M.D. Lbs./In. of Width	Tear Strength Graves M.D. C.M.D. (Lbs.)
3-½	0.004	5.88	0.17	3,100	10 ¹⁴	10 ¹²	10 9 2 1
4-1	0.005	3.85	0.26	6,000	10 ¹⁵	10 ¹²	22 22 1 1
3-2-3	0.008	2.56	0.39	9,000	10 ¹⁴	10 ¹²	41 58 3 3
4-1-4	0.009	2.38	0.42	5,500	10 ¹⁴	10 ¹²	26 23 3 2
4-2-4	0.010	2.08	0.48	9,000	10 ¹⁴	10 ¹²	48 56 5 4
4-3-4	0.012	1.85	0.54	12,000	10 ¹⁴	10 ¹³	69 71 6 5
3-5-3	0.012	1.76	0.57	15,600	10 ¹⁴	10 ¹²	130 120 9 8

*Values Obtained Were Greater Than Values Shown.

Type 5 Quinterra/Polyester Film

Product	Composite thickness ASTM D374 (Inches)	Yield Sq. Yds./Lb. Lbs./Sq. Yd.	Dielectric Strength ASTM D149 (2 In. Dia. Electrodes) (Volts)	Volume Resistivity * ASTM D257 (ohm/cms)	Surface Resistivity * ASTM D257 (ohms)	Tensile Strength ASTM D828 M.D. C.M.D. Lbs./In. of Width	Tear Strength Graves M.D. C.M.D. (Lbs.)
3-½	0.0036	5.56	0.18	2,500	10 ¹⁴	10 ¹²	17 17
4-1	0.005	3.85	0.26	5,000	10 ¹⁴	10 ¹²	22 18 3 2
6-1	0.007	2.86	0.35	5,800	10 ¹⁴	10 ¹²	29 28 3 1
3-1-3	0.007	2.50	0.40	6,800	10 ¹⁴	10 ¹²	35 29 3 2
3-2-3	0.008	2.17	0.46	9,000	10 ¹⁴	10 ¹²	57 51 3 3
4-2-4	0.011	1.96	0.51	10,000	10 ¹⁴	10 ¹²	41 52 4 4

*Values Were Greater Than Values Shown.



Type 4000 Quinorgo/Glass

Product	Composite thickness ASTM D374 (Inches)	Yield Sq. Yds./Lb. Lbs./Sq. Yd.	Dielectric Strength ASTM D149 (2 In. Dia. Electrodes) (Volts)	Volume Resistivity* ASTM D257 (ohm/cms)	Surface Resistivity* ASTM D257 (ohms)	Tensile Strength ASTM D828 M.D. C.M.D. Lbs./In. of Width	Tear Strength Graves M.D. C.M.D. (Lbs.)
3-4	0.008	3.03	0.33	1400	10 ¹⁴	10 ¹²	120 90 7 8
7-4	0.012	2.04	0.49	1900	10 ¹⁴	10 ¹²	170 165 6 5
3-4-3	0.010	2.25	0.44	1400	10 ¹⁴	10 ¹²	150 140 11 10
10-4-10	0.025	0.95	1.05	4400	10 ¹⁴	10 ¹²	166 139 15 13

*Values Obtained Were Greater Than Values Shown.

Type 5000 Quinorgo/Glass

Product	Composite thickness ASTM D374 (Inches)	Yield Sq. Yds./Lb. Lbs./Sq. Yd.	Dielectric Strength ASTM D149 (2 In. Dia. Electrodes) (Volts)	Volume Resistivity* ASTM D257 (ohm/cms)	Surface Resistivity* ASTM D257 (ohms)	Tensile Strength ASTM D828 M.D. C.M.D. Lbs./In. of Width	Tear Strength Graves M.D. C.M.D. (Lbs.)
7-4	0.012	1.89	0.53	2000	10 ¹⁴	10 ¹²	150 140 10 9
5-4-5	0.014	1.75	0.57	2000	10 ¹⁴	10 ¹²	180 90 15 11

*Values Obtained Were Greater Than Values Shown.

Type 6000 Quinorgo/Glass

Product	Composite thickness ASTM D374 (Inches)	Yield Sq. Yds./Lb. Lbs./Sq. Yd.	Dielectric Strength ASTM D149 (2 In. Dia. Electrodes) (Volts)	Volume Resistivity* ASTM D257 (ohm/cms)	Surface Resistivity* ASTM D257 (ohms)	Tensile Strength ASTM D828 M.D. C.M.D. Lbs./In. of Width	Tear Strength Graves M.D. C.M.D. (Lbs.)
5-4	0.009	2.50	0.40	1100	10 ¹⁴	10 ¹³	154 153
7-4-7	0.017	1.47	0.68	3800	10 ¹⁴	10 ¹³	160 150

*Values Obtained Were Greater Than Values Shown.

Type 3 Quinterra/Glass

Product	Composite thickness ASTM D374 (Inches)	Yield Sq. Yds./Lb. Lbs./Sq. Yd.	Dielectric Strength ASTM D149 (2 In. Dia. Electrodes) (Volts)	Volume Resistivity* ASTM D257 (ohm/cms)	Surface Resistivity* ASTM D257 (ohms)	Tensile Strength ASTM D828 M.D. C.M.D. Lbs./In. of Width	Tear Strength Graves M.D. C.M.D. (Lbs.)
3-4	0.008	2.62	0.38	1200	10 ¹⁴	10 ¹²	180 140 9 11
6-4	0.011	2.00	0.50	2100	10 ¹⁴	10 ¹²	205 170 10 9

*Values Obtained Were Greater Than Values Shown.

Type 5 Quinterra/Glass

Product	Composite thickness ASTM D374 (Inches)	Yield Sq. Yds./Lb. Lbs./Sq. Yd.	Dielectric Strength ASTM D149 (2 In. Dia. Electrodes) (Volts)	Volume Resistivity* ASTM D257 (ohm/cms)	Surface Resistivity* ASTM D257 (ohms)	Tensile Strength ASTM D828 M.D. C.M.D. Lbs./In. of Width	Tear Strength Graves M.D. C.M.D. (Lbs.)
3-4	0.008	2.70	0.37	1200	10 ¹⁴	10 ¹²	131 125 10 8
6-4	0.011	2.08	0.48	1800	10 ¹⁴	10 ¹²	160 147 10 9
4-4-4	0.012	1.63	0.61	3500	10 ¹⁴	10 ¹²	182 163 13 9
9-4-9	0.021	1.42	0.70	5000	10 ¹⁴	10 ¹²	148 126 15 11

*Values Obtained Were Greater Than Values Shown.

This Company has no control over the final application of the product by others, therefore, the information contained herein is intended as a general guide to product use and should not be construed as a warranty.