



## MATERIAL SELECTION GUIDE

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MATERIAL NUMBER	112 (Hydrotex)	113 (Grafitex)	118 (Glissentex)	238	248TC (Molytex)	301 (Glissentex)	397	398	400
<b>DESCRIPTION AND STRUCTURE</b> *EI DuPont Reg. Trademark	Laminated medium Weave Cotton Fabric	Laminated medium Weave Cotton Fabric with Graphite	112 with Laminated Teflon* cloth	Macerated Fine Cotton Fabric	Laminated Cotton Fabric with Moly	Laminated Medium Weave Cotton Fabric with Teflon*	Laminated Glass Fiber Fabric	Laminated Glass Fiber Fabric with Graphite Similar to 125 Grafitec-A	Laminated Glass Fiber Fabric with Teflon*
<b>AVERAGE MECHANICAL PROPERTIES</b>									
Tensile (psi)	12,000	11,000	12,000	7,000	7,000	9,500	17,000	16,500	16,500
Compressive (psi)	38,000	36,000	38,000	25,000	41,000	37,000	47,000	46,500	46,000
Shear (psi)	10,000	10,000	10,000	6,000	8,000	8,000	12,500	12,500	12,500
Flexural (psi)	15,000	15,000	15,000	14,000	14,000	15,000	16,700	16,500	16,700
Hardness (Rockwell M)	93	92	90	115	85	90	103	103	101
Impact (Izod)	5.7	5.7	5.7	2.2	3.2	5	9.9	9.8	9.9
<b>AVERAGE PHYSICAL PROPERTIES</b>									
Density (oz/in <sup>3</sup> )	0.788	0.787	0.78	0.788	0.787	0.789	0.820	0.820	0.82
Specific Gravity	1.370	1.380	1.370	1.37	1.380	1.370	1.430	1.430	1.43
Coefficient of Friction**									
Elastic Modulus in Compression (psi)	850,000	850,000	850,000	1,000,000	850,000	800,000	1,100,000	1,000,000	1,100,000
Coefficient of Therml. Exp. (inch/Deg.F)	1.3 x 10 <sup>-4</sup>	1.3 x 10 <sup>-5</sup>	1.3 x 10 <sup>-5</sup>	1.3 x 10 <sup>-5</sup>	1.3 x 10 <sup>-5</sup>	1.3 x 10 <sup>-5</sup>	1.0 x 10 <sup>-5</sup>	1.0 x 10 <sup>-5</sup>	1.0 x 10 <sup>-5</sup>
Thermal conductivity (BTU/FT <sup>2</sup> /HR/FT/Degrees F)	0.29	0.29	0.29	1.94	0.29	0.29	0.21	0.23	0.21
Dielectric strength (V/mil)									
Short Time	50 to 400	30 to 300	50 to 400	180 to 300	10 to 150	50 to 400	10 to 200	10 to 150	10 to 150
Step by Step	30 to 275	20 to 200	30 to 275	100 to 270	10 to 100	30 to 275	10 to 100	10 to 75	10 to 75
Moisture Absorption (%)	1.5	1.0	1.0	2.2	1.2	1.5	0.62	0.62	0.62
<b>GENERAL APPLICATION DATA</b>									
Similar to NEMA or ASTM Grade	C	CG	C	C	CG	CG	G-3	G-3	G-3
PV (Dry)***	20,000	35,000	80,000	20,000	60,000	80,000	30,000	40,000	80,000
PV (Water Lubricated)***	75,000	100,000	130,000	75,000	120,000	130,000	80,000	100,000	130,000
Chemical Resistance (Immersed)	Fair	Fair	Good	Fair	Fair	Good	Excellent	Excellent	Excellent
Recommended PH Range	4 to 9	4 to 9	3.7 to 9	5 to 8	5 to 8	4 to 9	2 to 11	2 to 11	2 to 11
Temperature Range (Degrees F)	-80 to 250	-80 to 250	-80 to 250	-100 to 330	-80 to 230	-80 to 250	-80 to 550	-80 to 550	-80 to 550
Poisson's Ration	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4

Note: We believe that the information in this guide to be the best currently available and is offered as such. Scan-Pac makes no guarantee of results and assumes no obligation or liability whatsoever for this data

\*\*Static:0.2 to 0.5, Dynamic:0.1 to 0.3

\*\*\*PV values (psi X fpm) are an approximate guide only and material suitability should be verified through testing under actual working conditions. Speed is a more critical factor than load. Higher speeds generate more heat which must be dissipated by lubrication since the materials are all heat insulators. For static loading use a safety factor of 3. Therefore, design loading should not exceed 1/3 of the compressive strength.

Gatke tube is available in diameters from 1/2" to 35". Flat sheet is available in sizes up to 30" x 60" and thickness from 1/16" to 4". Multiple sheets can also be bonded together if larger thicknesses are needed.

Application data required for specifying Gatke material:

Maximum Operating temperature

Load (psi)

ID and OD Dimensions of bearing or bushing (Note:28" maximum length)

Dry or Lubricated

PV or Rotation speed (fpm) if PV is not known

Recommended finish of mating surfaces:

60 to 125 RMS for static conditions

10 to 50 RMS for dynamic conditions.



03/03/2021