



GATKE MATERIAL SELECTION GUIDE

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MATERIAL NUMBER	112 (Hydrotex)	113 (Grafitex)	118 (Glissentex)	238	248TC (Molytex)	301 (Glissentex)	397	398	400
DESCRIPTION AND STRUCTURE	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 Grafitex-A	Laminated Glass Fiber Fabric with Teflon*
* EI DuPont Reg. Trademark									
AVERAGE MECHANICAL PROPERTIES									
Tensile (psi)	12000	11000	12000	7000	7000	9500	17000	16500	16500
Compressive (psi)	38000	36000	38000	25000	41000	37000	47000	46500	46000
Shear (psi)	10000	10000	10000	6000	8000	8000	12500	12500	12500
Flexural (psi)	15000	15000	15000	14000	14000	15000	16700	16500	16700
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
AVERAGE PHYSICAL PROPERTIES									
Density (oz/In ³)	.788	.787	.78	.788	.787	.789	.820	.820	.82
Specific Gravity	1.370	1.380	1.370	1.370	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 Thermal Exp. (inch / Deg. F)	1.3 x 10 ⁻⁴	1.3 x 10 ⁻⁵	1.3 x 10 ⁻⁵	1.95 x 10 ⁻⁵	1.3 x 10 ⁻⁵	1.3 x 10 ⁻⁵	1.0 x 10 ⁻⁵	1.0 x 10 ⁻⁵	1.0 x 10 ⁻⁵
Thermal Conductivity (BTU/FT ² /HR/FT/Degrees F)	.29	.29	.29	1.94	.29	.29	.21	.23	.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	1	2.2	1.2	1.5	.62	.62	.62
GENERAL APPLICATION DATA									
Similar to NEMA or ASTM Grade	C	CG					G-3	G-3	G-3
PV (Dry) ***	20000	35000	80000	20000	60000	80000	30000	40000	80000
PV (Water Lubricated) ***	75000	100000	130000	75000	120000	130000	80000	100000	130000
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 Ratio	.4	.4	.4	.4	.4	.4	.4	.4	.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