

## Rigid Insulation

### Polyester Glass Laminates - GPO3, HT2, ESP

#### GENERAL

Polyester glass laminates are manufactured from layers of glass mat bonded with thermosetting temperature stable polyester resins. The resultant laminates make excellent insulating materials with high heat and arc resistant properties together with good mechanical and machining properties. Their resistance to carbon tracking is fifty times greater than that of phenolic laminates.

#### APPLICATIONS

Polyester glass is widely used in motors and generators for blocking and wedging applications as well as switchgear, dry and oil filled transformers, refrigeration units, electric ovens and induction furnaces and as tram-rail hangers, stand off insulators and press insulation.

#### GRADES & CHARACTERISTICS

**GP03** - General purpose grade that is ideal for most electrical and mechanical applications up to 155°C. It has good resistance to carbon tracking.

**HT2** - This is a high temperature grade of polyester glass with excellent thermal characteristics. It is rated for a continuous operating temperature index of 185°C.

**ESP** - This is an extra high temperature grade with a continuous operating temperature rating of 220°C. It has excellent thermal insulating values coupled with high electrical and mechanical strength.

Properties		GP03	HT2	ESP
Tensile Strength	Lengthwise D638	7928N/cm <sup>2</sup>	9721N/cm <sup>2</sup>	10548N/cm <sup>2</sup>
	Crosswise	6894N/cm <sup>2</sup>	6618N/cm <sup>2</sup>	9514N/cm <sup>2</sup>
Flexural Strength	Lengthwise D790	18271N/cm <sup>2</sup>	15375N/cm <sup>2</sup>	18271N/cm <sup>2</sup>
	Crosswise	15168N/cm <sup>2</sup>	12548N/cm <sup>2</sup>	16823N/cm <sup>2</sup>
	Flatwise			31026 N/cm <sup>2</sup>
Compressive strength;	Lengthwise D695	14754N/cm <sup>2</sup>	9032N/cm <sup>2</sup>	13306N/cm <sup>2</sup>
	Crosswise	13996N/cm <sup>2</sup>	7860N/cm <sup>2</sup>	11583N/cm <sup>2</sup>
Water absorption; (%by weight)		0.27%	0.35%	0.62%
Specific gravity; D792		1.81	1.73	1.83
Flammability; UL subject 94		94HB	94HB	94HB
Dielectric strength; D149		17kv/mm	12kv/mm	17kv/mm
Dielectric breakdown; D149		85kv	64kv	80kv
Arc resistance; D495		170 secs	50 secs	120 secs
Comparative track index; (C.T.I)		500 + volts	-	-
Permittivity; 1 kHz; D150		4.01	4.93	5.08
UL temperature index				
Electrical		105°C	185°C	210°C
Mechanical		140°C	185°C	210°C
*Based on sample thickness 0.125" (3.2mm).				

Physical	
Colour	GPO3 – Red or White HT2 – Brown ESP – Off White
Standard Thicknesses	0.8mm to 50mm
Sheet sizes	Below 1.6mm – 1830 x 915mm 1.6mm & above - 2440 x 1220mm