

GENERAL SPECIFICATION FOR STRUCTURAL PULTRUDED SHAPES

- A. Structural shapes are made from premium grade isophthalic polyester or vinyl ester resin. All structural shapes contain UV inhibitor.
- B. All profiles are manufactured by the pultrusion process. Structural pultruded profiles consist of glass fibre reinforced isophthalic polyester or vinyl ester resin matrix, at approximately 40% resin to glass ratio. The resin system contains UV-inhibitors. Exterior surfaces of all profiles are covered with a 30 g/m² synthetic veil surface. Continuous glass strand roving is used internally for longitudinal strength. Tri-axial mats are used internally for transverse strength. An additional clear coating can be applied to the external surface of profiles to provide additional UV protection if needed.
- C. The following minimum mechanical properties shall apply:

Table 1 - Fibreglass Pultruded Material Properties

Properties	Unit	Fibre parallel direction	Fibre transverse direction
Tension Strength	MPa	250 - 350	56 – 60
Compression Strength	MPa	250 - 350	70 – 140
Elastic Modulus	GPa	20 - 35	5 – 9
Shear Strength	MPa	25 – 30	
Distortional Modulus	GPa	3 – 4	
Density	g/cm³	1.66 – 1.94	
Water Absorption (24 hr immersion)	%	0.6 max by weight	
Barcol Hardness		40	
Coefficient of Thermal Expansion	/ °C	8 x 10⁻⁶	
Thermal Conductivity	W / m°C	4	