

GRP Pressure Vessel

Technical data

Filament Wound Glass Reinforced Epoxy Resin

Manufacture by computerised helical winding combined with hot cure of the wound structure, gives consistent quality and enables optimum mechanical strength to be achieved. The system used has been developed principally for the manufacture of lightweight pressure vessels to the ASME X code. However the system is suitable for many other applications where corrosion resistance and high strength to weight ratio are important.

General

Colour	Light Green to Straw (Natural)	
Grade	'E' glass rovings 75% by weight glass (typical)	
Finish	'As wound' or machined and varnished (can be sprayed painted)	
Tolerances	'As wound' diameter +3/-0 mm	
Sizes	Diameter	Maximum Length
	50 to 100 mm	3500 mm
	100 to 600 mm	8000 mm
Reinforcement direction relative to tube axis	35 to 90 degrees	

Physical

Specific Gravity	1.95
Maximum Working Temperature (laminare only)	100 deg C

Mechanical (Properties at 50 deg C)

Fibre Tensile strength	hoop only	120,000 psi	
Fibre Tensile Strength	55 deg helix	80,000 psi	(hoop)
	(combined loading eg pressure)	40,000 psi	(axial)
Ultimate Tensile Strength	55 deg helix	20,000 psi	
Ultimate Tensile Strength	45 deg helix	25,000 psi	
Compressive Strength (Bearing)	55 deg helix	40,000 psi	
Interlaminar Shear Strength (ASTM D 2344)		7,000 psi	
Tensile Modulus	55 deg helix	2,000,000 psi	
Effective Hydraulic Modulus			
	(1) Axial	7,000,000 psi	
	(2) Diametral	4,000,000 psi	

The company reserves the right to alter specifications without prior notice.