

Reinforcements WOVEN & NCF E-Glass/Unidirectional

Longitudinal (Unidirectional) Fabrics have the highest strength and stiffness of any reinforcement construction. However, this strength is only in the principal direction. These materials are ideal for strengthening a laminate in a particular direction.

They are usually used with other materials that provide the required strength and stiffness in the other directions. Unidirectional fabrics are ideal for components with unidirectional loads, such as beams, flanges, etc.

FABRIC SPECIFICATIONS

UK0230 - 230gm Unidirectional E-Glass (woven)					
Layer Orientation	degrees (°)	0	+45	90	-45
Layer Weight	(gm/m ²)	205	0	25	0
Material			E-Glass	E-Glass	
Weight, knitting yarn (gm/m ²)	not applicable				
Material	not applicable				
Total weight (gm/m ²)	230±3%				
Standard roll width (mm)	1270				

UK0460 - 460gm Unidirectional E-Glass (NCF)					
Layer Orientation	degrees (°)	0	+45	90	-45
Layer Weight	(gm/m ²)	413	0	43	0
Material				E-Glass	
Weight, knitting yarn (gm/m ²)	8				
Material	PES				
Total weight (gm/m ²)	464±3%				
Standard roll width (mm)	1250				

UK0800 - 800gm Unidirectional E-Glass (NCF)					
Layer Orientation	degrees (°)	0	+45	90	-45
Layer Weight	(gm/m ²)	785	0	33	0
Material		E-Glass		E-Glass	
Weight, knitting yarn (gm/m ²)	8				
Material	PES				
Total weight (gm/m ²)	826±5%				
Standard roll width (mm)	1260				

TYPICAL LAMINATE PROPERTIES

Laminate thickness 0.114 per 100gm/m²

Fibre Fraction 50% by weight

	0°	+45°	90°	-45°
Tensile Strength	540 MPa			
Tensile Modulus	27,580 MPa			
Compressive Strength	432 MPa			
Compressive Modulus	23,030 MPa			
Flexural Strength	591 MPa			
Shear Strength, in plane	42* MPa			
Shear Strength, interlamina				
Elongation at break	2.37			

* Indicates resin dominated strength

NOTE: This data is provided as an aid to materials selection only. These results are theoretical estimates of average properties, based on limited mechanical test data. They should not be construed as either guaranteed minimum values, or design values. The properties of laminates will vary significantly with the resin system used and laminating process used, with many other factors being beyond the control of ATL Composites Pty Ltd.

STANDARD STOCK

Order Code	Description	Roll Width	Roll Length
UK0230	230 gm Woven Unidirectional E-Glass	1270 mm	100 Lm
UK0460*	415 gm Unidirectional E-Glass	1250 mm	69.0 Lm
UK0800*	785 gm Unidirectional E-Glass	1260 mm	37.8 Lm

* Fabrics contain additional weight in the 90 degree direction

STORAGE

E-Glass unidirectionals should be stored on packaging roll, and kept dry and clean