

Non-Crimp Fabrics (NCF) can be used in a variety of applications in the automotive, aerospace, construction, corrosive, industrial and marine industries. NCF is a composite reinforcing fabric in which fibres are organised into layers of plies of variable weight and orientation. The layers are stitched together. The result is a range of engineered fabrics with predictable, repeatable properties for the composite industry.

The fibre orientation in the Double-Bias Non-Crimp Fabrics, $\pm 45^\circ$, is the optimum construction to provide high shear strength and stiffness.

These materials are ideal for providing torsion stiffness in tubular constructions, or shear strength in the webs of beams or in stiffeners. As well as laterally loaded panels with aspect ratios from 1 to 3. Double-bias fabrics are also ideal products to use as tabbing material when bonding laminates together.

This product is suitable for hand lay-up, vacuum bagging, vacuum injection and other RTM-processes.

The fabric is very drapable, and conforms well to complex geometry components.

FABRIC SPECIFICATIONS

XK0400 - 400gm Double-bias E-Glass					
Layer Orientation	degrees (°)	0	+45	90	-45
Layer Weight	(gm/m ²)	0	201	9	201
Material			E-Glass	E-Glass	E-Glass

Weight, knitting yarn (gm/m ²)	8
Material	PES
Total weight (gm/m ²)	419 \pm 3%
Standard roll width (mm)	1270

XK0600 - 600gm Double-bias E-Glass					
Layer Orientation	degrees (°)	0	+45	90	-45
Layer Weight	(gm/m ²)	0	303	9	303
Material			E-Glass	E-Glass	E-Glass

Weight, knitting yarn (gm/m ²)	11
Material	PES
Total weight (gm/m ²)	625 \pm 3%
Standard roll width (mm)	1270

XK0800 - 800gm Double-bias E-Glass					
Layer Orientation	degrees (°)	0	+45	90	-45
Layer Weight	(gm/m ²)	0	400	17	400
Material			E-Glass	E-Glass	E-Glass

Weight, knitting yarn (gm/m ²)	8
Material	PES
Total weight (gm/m ²)	825 \pm 5%
Standard roll width (mm)	1270

TYPICAL LAMINATE PROPERTIES					
Laminate thickness 0.114 per 100gm/m ²			Fibre Fraction 50% by weight		
	Test Method	0°	+45°	90°	-45°
Tensile Strength	ISO 3268	84* MPa	275 MPa	84* MPa	275 MPa
Tensile Modulus	ISO 3268	9,650* MPa	17,240 MPa	9,650* MPa	17,240 MPa
Compressive Strength	BS 2782	84* MPa	220 MPa	84* MPa	220 MPa
Compressive Modulus	BS 2782	9,650* MPa	17,240 MPa	9,650* MPa	17,240 MPa
Flexural Strength		84* MPa	372 MPa	84* MPa	372 MPa
Shear Strength, in plane	ASTM 4255-83	165 MPa	42 MPa	165 MPa	42 MPa
Shear Strength, interlamina	BS 2782	15.8 MPa	30.4 MPa		
Elongation at break			2.9 %		2.9 %

* 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
XK0400	400gm Double-bias E-Glass	1.27 m	75.2 Lm
XK0600	600gm Double-bias E-Glass	1.27 m	50.4 Lm
XK0800	800gm Double-bias E-Glass	1.27 m	38.6 Lm
X400T100	400gm Double-bias E-Glass tape	100 mm	75 Lm
X400T150	400gm Double-bias E-Glass tape	150 mm	75 Lm
X400T200	400gm Double-bias E-Glass tape	200 mm	75 Lm
X600T100	600gm Double-bias E-Glass tape	100 mm	50 Lm
X600T150	600gm Double-bias E-Glass tape	150 mm	50 Lm
X600T200	600gm Double-bias E-Glass tape	200 mm	50 Lm

STORAGE

NCF Reinforcements should be stored on packaging roll, and kept dry and clean.

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