

TECHNICAL DATA SHEET

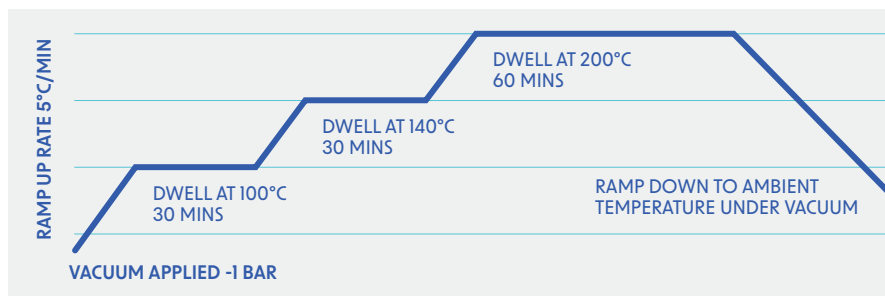
METOL 160 CBT COMPOSITE PRE-IMPREGNATED FIBRES AND FABRICS



METOL can manufacture and supply customised METOL 160 pre-impregnated fibres and fabrics (Pre-pregs) including uni-directional, bi-directional and multi-directional fabrics. METOL can supply METOL 160 pre-impregnated fibres and fabrics in a wide range of fibres including glass and carbon at a range of fibre volume fractions to suit the clients application. METOL can also supply METOL 160 impregnated surface veils for enhanced polymer rich surface finish.

METOL 160 Processing Conditions

METOL 160 Pre-pregs can be processed in a variety of ways including vacuum bagging and press moulding. It is recommended that the METOL 160 pre-pregs are stored in a dry location. Typical processing schedules for vacuum bag moulding and press moulding are shown below.



Typical Process Schedule - Vacuum Bagging

Press Moulding

In terms of press moulding, it is recommended that the platens are set to 220°C and the METOL 160 pre-preg inserted in the tool and heated for 10 minutes under no pressure. After 10 minutes it is recommended that the pressure is increased upto 25 bar for a further 15 minutes after which the part can be de-moulded.

Examples of Mechanical and Physical Properties

Indicative UD E glass non normalised 4 plies 0 degree lay up, (press mould cured METOL 160 pre dried 24 hours 100°C) epoxy and polyester laminate vacuum infusion cured.

	METOL 160	Epoxy	Polyester	Test Method
ILSS / MPa	45.3 +/- 4.2 (48%Vf)	43.2 +/- 1.6 (46%Vf)	45.8 +/- 2.5 (55%Vf)	EN 14130:1998
Flexural Strength / MPa	618 +/- 32.4 (54%Vf)	850 +/- 20 (45%Vf)	852 +/- 27.1 (55%Vf)	ASTM D 790-03
Flexural Modulus / GPa	33.7 +/- 2.3 (54%Vf)	33.1 +/- 2.5 (45%Vf)	39 +/- 0.8 (55%Vf)	ASTM D 790-03

INFINITE APPLICATIONS, ENDLESS POSSIBILITIES



Wind



Marine



Utilities



Sports



Automotive



100%
Recyclable



TECHNICAL DATA SHEET

METOL 160 CBT COMPOSITE PRE-IMPREGNATED FIBRES AND FABRICS



Indicative Tri axial E glass non normalised data, 2 plies (45/-45/0), (press mould cured METOL 160 pre dried 24 hours 100°C) epoxy and polyester laminate vacuum infusion cured. Tensile data normalised to 55%Vf.

	METOL 160	Epoxy	Polyester	Test Method
ILSS / MPa	46.8 +/- 4.1 (56%Vf)	31.5 +/- 1.4 (53%Vf)	33.3 +/- 1.5 (56%Vf)	EN 14130:1998
Flexural Strength / MPa	597 +/- 25 (53%Vf)	594 +/- 50 (53%Vf)	647 +/- 29 (56%Vf)	ASTM D 790-03
Flexural Modulus / GPa	14.6 +/- 0.6 (53%Vf)	13.9 +/- 1.9 (53%Vf)	15.6 +/- 1 (56%Vf)	ASTM D 790-03
Tensile Strength / MPa	613 +/- 10.7 (55%Vf)	Not tested	436 +/- 94 (55%Vf)	ASTM D 3039
Tensile Modulus / GPa	23.4 +/- 0.2 (55%Vf)	Not tested	30.5 +/- 1.6 (55%Vf)	ASTM D 3039
Strain to Failure / %	1.5 +/- 0.1%	Not tested	0.3 +/- 0.2%	ASTM D 3039
Moisture Uptake / %	+0.2% weight change	+1.6% weight change	+0.4 % weight change	ASTM D 5229

Indicative UD carbon non normalised 4 plies 0 degree lay up (METOL 160 laminated press moulded, pre dried 24 hours 100°C) epoxy and polyester laminate vacuum infusion cured.

	METOL 160	Epoxy	Polyester	Test Method
ILSS	59.8 +/- 4.9 (56%Vf)	45.5 +/- 2.4 (48%Vf)	43.4 +/- 2.5 (55%Vf)	EN 14130:1998
Flexural Strength / MPa	691 +/- 85 (56%Vf)	790.9 +/- 115 (55%Vf)	483 +/- 47 (55%Vf)	ASTM D 790-03
Flexural Modulus / GPa	73.9 +/- 5.2 (56%Vf)	69.6 +/- 7.6 (55%Vf)	64.1 +/- 5.4 (55%Vf)	ASTM D 790-03
Moisture Uptake / %	+0.2% weight change	+1.6% weight change	+0.4 % weight change	ASTM D 5229

INFINITE APPLICATIONS,
ENDLESS POSSIBILITIES



Wind



Marine



Utilities



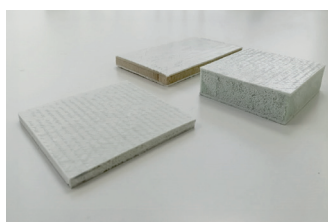
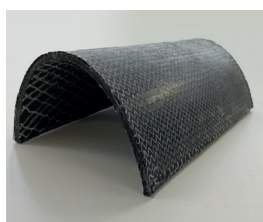
Sports



Automotive



100%
Recyclable



Storage and Handling

METOL pre-impregnated composite fabrics should be covered and stored in a cool, dry place. Further information is provided on the METOL composite fabric MSDS datasheet.

Advice and Support

METOL Ltd's chemists can customise the METOL oligomer to tailor the mechanical and/or physical properties to suit the application. METOL Ltd's experienced engineers are also able to offer full design, development, prototyping, testing and certification advice and assistance.

Call or contact us today for more information.

T: +44 7748 635315 | E: enquiries@metol.co.uk | Metol.co.uk