SAKIMA
SPORT&DESIGN

TECHNICAL DATA SHEET

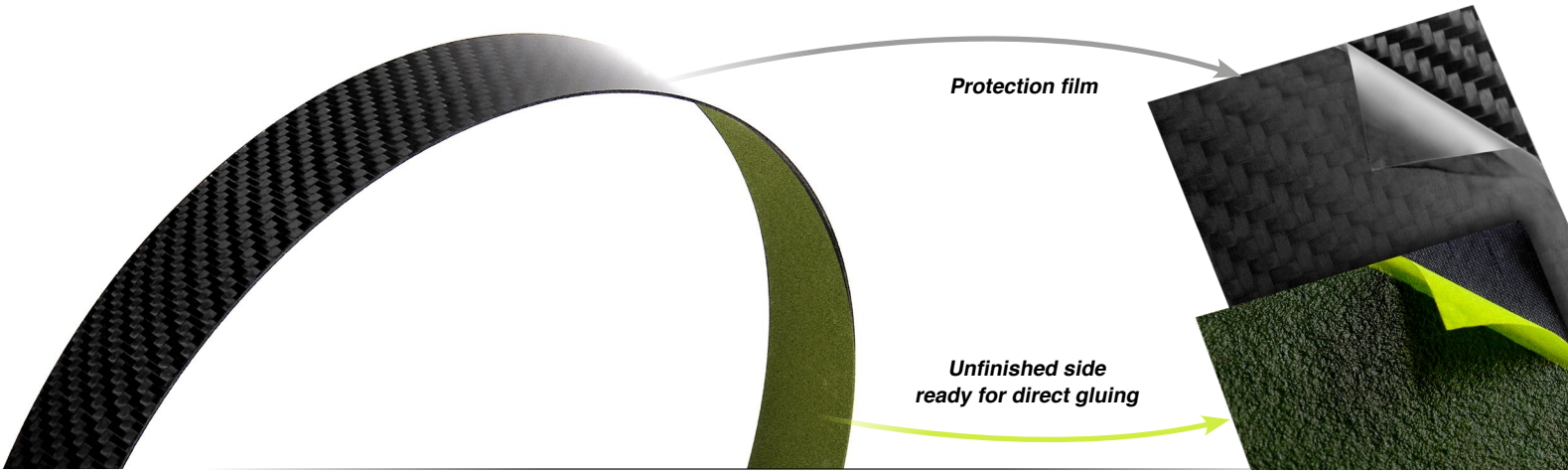
TRACTION CARBON

PRE-IMPREGNATED CARBON SHEETS WITH VACUUM STRATIFICATION

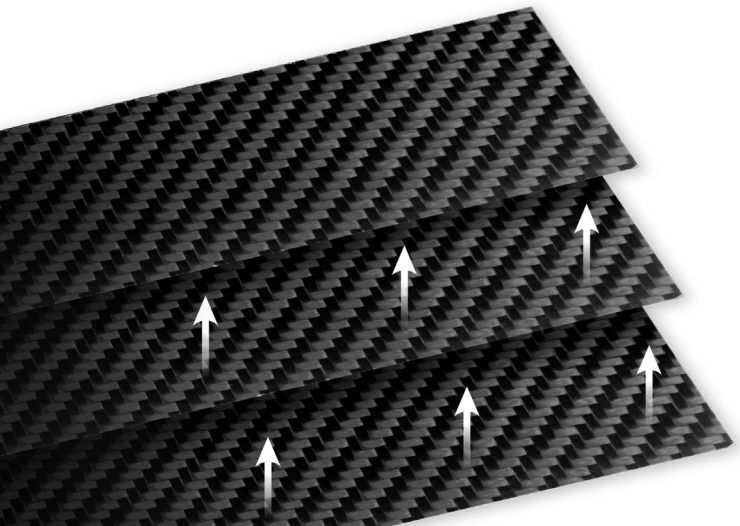
SPECIFIC USE:
TRACTION EXTERNAL LAMINATION FOR SUPREME CLASS BENDING ELEMENTS

INDUSTRY:
ARCHERY SPORTS AND HUNTING

We owe our pre-impregnated carbon sheets to a research dating back to 2016. This research was conducted by SA**KIMA** through its tests and subsequently in conjunction with an Engineering firm specialising in developing composite materials with particular expertise in the treatment of finished carbon products.



We set out pursuing the goal of manufacturing a sheet with stratification made of different types of carbon and specifically designed for the archery industry lamination bending elements market. The engineers and technicians who helped us develop the product identified a stratification consisting of various and different types of carbon fibre. Each fabric comes with different features and with a specific function. Combined with others, each function gives forth a prepreg sheet ready for use and for gluing in stratification for high performance bending elements.



NO FIBERGLASS

No fibreglass sheet in the bending traction side

TWILL WEAVE

Clean and clear-cut aesthetics with visible Twill carbon weave

The various tests we conducted on the sheet product certified a use thereof combined with the traction strengths of the bending element. The torsional strength of the bending element subjected to lamination with **TRACTION CARBON** is exceptionally high. **TRACTION CARBON's** specific weight is lesser than 30% as compared to the fibreglass sheet. However, despite being lighter the elastic modulus is greater than 15% as compared to fibreglass. This determines less inertia of the bending element when closing upon release with ensuing enhanced performance thereof.

ANTI TORSION

Exceptionally high torsional strength

LIGHT WEIGHT

Specific weight lesser than 30% as compared to fibreglass sheet

MORE ELASTICITY

Elastic modulus greater than 15% as compared to fibreglass sheet

AVAILABLE FORMATS*

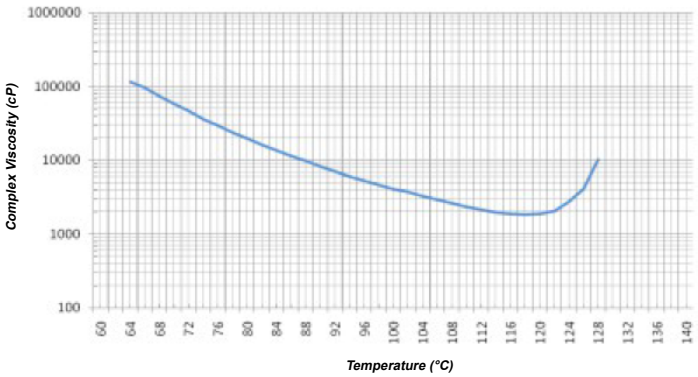
920x45x1 mm **1850x45x1 mm**

**width customisation available upon request.*

COMPOSITE-RESIN TECHNICAL DATA

VISCOSITY PROFILE

(constant heating rate 2°C/min)



CURED MATRIX PROPRIETIES

Flexural Strength (MPa)	165÷175	(ASTM D790)
Flexural Modulus (GPa)	3÷3.5	(ASTM D790)
Tensile Strength (MPa)	75÷85	(ASTM D638)
Tensile Modulus (GPa)	2.8÷3.5	(ASTM D638)
Strain (%)	3÷4	(ASTM D638)
Glass Transition Temperature (Tg - °C)	110÷130	(ASTM D3418)
Toughness (G_{1c} - J/m^2)	380÷440	(ISO 179-1)
Density (g/cm^3)	1.15÷1.25	(ASTM D792)

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CURED LAMINATE PROPERTIES

(at room temperature)

High strenght carbon fiber, UD 190 g/m² T700 (24k), 405% RC,
7 plies cured 1 hour at 120°C and -1 bar.

Properties	Test method	Units	Values
Tensile Strength	ASTM D3039	MPa	2371,1
Tensile Modulus	ASTM D3039	GPa	131,3
Flexural Strength	ASTM D790	MPa	1564,2
Flexural Modulus	ASTM D790	GPa	115,0
ILSS	ASTM D2344	MPa	80,0
Cured Ply Thickness	---	mm	0,23

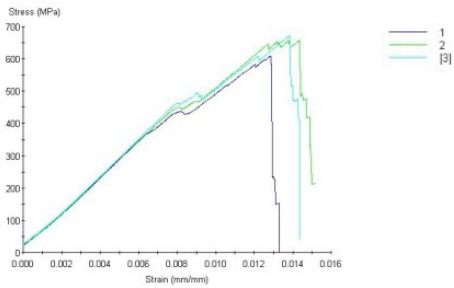
Values are normalized at 60% Vf.

High strenght carbon fabric, 200 g/m² twill 2/2 HTA40 (3k), 45% RC,
7 plies cured 1 hour at 120°C and -1 bar.

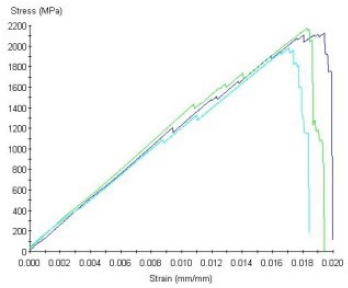
Properties	Test method	Units	Values
Tensile Strength	ASTM D3039	MPa	790,1
Tensile Modulus	ASTM D3039	GPa	65,1
Flexural Strength	ASTM D790	MPa	1016,4
Flexural Modulus	ASTM D790	GPa	60,2
ILSS	ASTM D2344	MPa	74,4
Cured Ply Thickness	---	mm	0,24

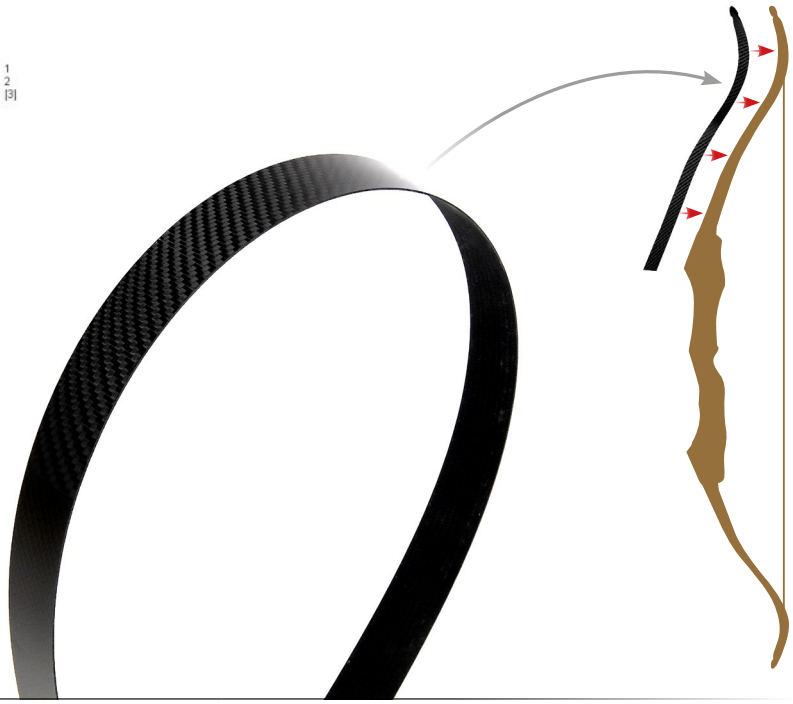
Values are normalized at 55% Vf.

B.1.1 TENSILE @ 20°C Batch 1



B.2.1 TENSILE 0° @ 20°C Batch 1





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CONTACT US

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