

## Biotex **Flax** 4x4 Plain Weave 500g/m<sup>2</sup> Fabric

### Technical Data Sheet

August 2013

#### Introduction

Biotex Flax woven fabrics are reinforcement textiles based on natural flax fibre and designed for fibre-reinforced polymer composite applications. The fabrics can be used with a wide variety of resins in processes including wet lay-up, vacuum infusion, resin transfer moulding (RTM), press moulding, pultrusion, prepregging etc. The fabrics can be processed in a similar way to glass or carbon fibre.

Biotex natural reinforcements and intermediates provide the high performance and easy processing normally associated with glass fibre composites but with lower weight and environmental impact. They are suitable for semi-structural and decorative applications in sectors such as automotive, construction, marine, sports and consumer goods. Biotex uses a unique Twistless Technology to ensure a high degree of fibre alignment, impregnation and performance.

#### Specification

Specification for standard fabric (other constructions available on request):

Fabric specifications	
Weave style	4x4 plain weave (hopsack)
Warp yarn	Biotex Flax 250tex
Weft yarn	Biotex Flax 250tex
Warp count	7 ends/cm
Weft count	11 picks/cm
Weight	500g/m <sup>2</sup>
Tolerance on weight	+/-5%
Width	1250mm
Tolerance on width	+/-2%

#### Fibre Properties

Typical average properties for flax fibres:

Flax fibre properties*	
Density	1.5g/cm <sup>3</sup>
Diameter**	20 μm
Tensile modulus	50GPa
Tensile strength	500MPa
Strain	2%

\*Flax fibre is a natural product and a certain amount of variation should be expected.

\*\*Flax fibre has a non-circular cross-section.



## Composite Properties

Property	Woven flax-polyester vacuum infused laminate (0 dir)	Woven flax-epoxy prepreg autoclaved laminate (0 dir)	Test Method
Fibre content by vol	33%	45%	
Density	1.24g/cm <sup>3</sup>	1.3g/cm <sup>3</sup>	
Tensile modulus	7.2GPa	10.1GPa	ISO 527-4
Tensile strength	68.3MPa	87.6MPa	ISO 527-4
Tensile elongation	2.5%	1.5%	ISO 527-4
Flexural modulus	4.0GPa	7.3GPa	ISO 14125
Flexural strength	97.4MPa	132MPa	ISO 14125
Charpy impact	28.0kJ/m <sup>2</sup>	-	ISO 179-1 U
Apparent ILSS	-	14.2MPa	ISO 14130/1

## Sizing

Biotex Flax is supplied unsized as standard. Sizings are possible on request.

## Packaging

Standard packaging details (other packaging options are possible on request):

Packaging details	
Roll width	1250mm
Roll length	50m
Net weight	31kg
Core	Cardboard tube
Wrapping	Polythene film

Orders for multiple rolls are typically packed on a standard wooden pallet and covered with stretch wrap.

## Storage

Biotex Flax should be stored in a cool dry place away from direct sunlight. Flax fibre can absorb moisture from the atmosphere so drying may be required before use, especially if exposed to excessive humidity.

## Safety

Flax fibre is a naturally occurring, non-hazardous material, but typical precautions should be taken when handling the material including using appropriate PPE and adequate ventilation. See MSDS for details.

## Disclaimer

The information provided here is believed to be accurate but should be considered indicative only. It is the responsibility of the customer to check the suitability of the product for their specific application prior to use.

