

# Flax & Hemp Solutions

## Technical datasheets 2018

NAME OF THE COMPANY : .....

### Technical datasheet - weaves

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NAME OR REFERENCE : .....

#### Description of the fibres <sup>1</sup>

	Nature	Composition <sup>2</sup>
Warp	<input type="checkbox"/> Roving* <input type="checkbox"/> Yarn	<input type="checkbox"/> Flax <input type="checkbox"/> Hemp <input type="checkbox"/> Other, specify: .....
Weft	<input type="checkbox"/> Roving* <input type="checkbox"/> Yarn	<input type="checkbox"/> Flax <input type="checkbox"/> Hemp <input type="checkbox"/> Other, specify: .....

<sup>1</sup> More details can be found on the roving/yarn datasheets from the manufacturer given in the «additional information» section

<sup>2</sup> Multiple options can be selected in case of special commingled roving or yarn, or in other special combined yarns

\* The twist, measured according to ISO 17202, is lower as 10 twists/m

#### Description of the fabric

Property	Unit	Standard	Value
Areal weight	g/m <sup>2</sup>	ISO 3801	..... ± .....
Thickness	mm	ISO 5084	..... ± .....
Weave style			.....
Yarns/ cm	(warp yarns)	ISO 4602	..... ± .....
Picks/ cm	(weft yarns)	ISO 4602	..... ± .....
Weight distribution	%		Warp: ..... Weft: .....
Standard width	cm	ISO 5025	..... ± .....
Standard length	m	/	.....
Standard mass	kg	/	.....

**Footnote:** Density of flax and hemp fixed at 1,45 g/cm<sup>3</sup>. More details can be found in the CELC guideline.

**Footnote:** Areal volume =  $\frac{\text{areal weight}}{\text{density}} \times \frac{1}{1000}$

A glass fibre weave of 200 g/m<sup>2</sup> has an areal volume of 0,079 mm<sup>3</sup>/mm<sup>2</sup>, while a flax weave of 200 g/m<sup>2</sup> has an areal volume of 0,138 mm<sup>3</sup>/mm<sup>2</sup>

# Mechanical properties of the laminate

## With a thermoset matrix

Stacking sequence:	<input type="checkbox"/> Regular*	<input type="checkbox"/> Other, specify: .....
Process:	<input type="checkbox"/> Hand lay-up <input type="checkbox"/> Resin transfer molding	<input type="checkbox"/> Vacuum infusion <input type="checkbox"/> Other, specify: .....
Name of matrix**:	.....	

\* All layers oriented in warp direction

\*\* Matrix properties can be found on the datasheet from the manufacturer given in section "additional information"

MECHANICAL PROPERTIES OF WOVEN FABRIC COMPOSITE	TENSION	FLEXION
$V_f(\%)*$	..... ± .....	..... ± .....
Modulus in warp direction (GPa)	$E_1 = \dots \pm \dots (1)$	$E_1 = \dots \pm \dots (1)$
Modulus in weft direction (GPa)	$E_1 = \dots \pm \dots (1)$	$E_1 = \dots \pm \dots (1)$
Strength in warp (MPa)	..... ± .....	..... ± .....
Strength in weft (MPa)	..... ± .....	..... ± .....
Failure strain in warp (%)	..... ± .....	..... ± .....
Failure strain in weft (%)	..... ± .....	..... ± .....
Standards	ISO 527	ISO 14125

\* More details on the calculation of the fibre volume fraction can be found in the CELC guideline.

(1)  $E_1$  measured between 0 and 0,1% strain, adapted for natural fibres, more details can be found in the CELC guideline.

# Mechanical properties of the laminate (2)

## With a thermoplastic matrix

Stacking sequence:	<input type="checkbox"/> Regular*	<input type="checkbox"/> Other, specify: .....
Process:	<input type="checkbox"/> Compression molding	<input type="checkbox"/> Other, specify: .....
Name of matrix**:	.....	

\* All layers oriented in warp direction

\*\* Matrix properties can be found on the datasheet from the manufacturer given in section "additional information"

MECHANICAL PROPERTIES OF WOVEN FABRIC COMPOSITE	TENSION	FLEXION
$V_f(\%)*$	..... ± .....	..... ± .....
Modulus in warp direction (GPa)	E1 = ..... ± ..... (1)	E1 = ..... ± ..... (1)
Modulus in weft direction (GPa)	E1 = ..... ± ..... (1)	E1 = ..... ± ..... (1)
Strength in warp (MPa)	..... ± .....	..... ± .....
Strength in weft (MPa)	..... ± .....	..... ± .....
Failure strain in warp (%)	..... ± .....	..... ± .....
Failure strain in weft (%)	..... ± .....	..... ± .....
Standards	ISO 527	ISO 14125

\* More details on the calculation of the fibre volume fraction can be found in the CELC guideline.

(1) E1 measured between 0 and 0,1% strain, adapted for natural fibres, more details can be found in the CELC guideline.

# Additional information

Add datasheet(s) of the rovings/yarns used to manufacture the preform (mandatory)

Add datasheet(s) of the thermoset and/or thermoplastic matrix used for composite production (mandatory)

## Treatment

Treatment:  Yes  No

Purpose(s) of treatment:

Compatibilised for use with: .....

Other: .....

Sizing:  Yes  No

Purpose(s) sizing:

.....  
.....

## Recommended storage and use conditions

.....  
.....

## Suggestions for additional information

Unique properties: life cycle analysis and vibrational damping properties

Weave structure and drapability

Fatigue- and impact properties

Sales aspects