

Flax & Hemp Solutions

Technical datasheets 2018

NAME OF THE COMPANY :

Technical datasheet – random mat

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NAME OR REFERENCE :

Description of the fibres

	Type	Fibre length	Mass fraction in non-woven/ random mat
Primary reinforcing fibre	<input type="checkbox"/> Flax <input type="checkbox"/> Hemp	<input type="checkbox"/> 10-20 cm <input type="checkbox"/> > 20 cm	/
<input type="checkbox"/> Secondary reinforcing fibre*	<input type="checkbox"/> Flax <input type="checkbox"/> Hemp	<input type="checkbox"/> 10-20 cm <input type="checkbox"/> > 20 cm	.....
<input type="checkbox"/> Other fibre*	..... Brand name: .....	/	.....
<input type="checkbox"/> Woody particles*	..... Brand name: .....	/	.....

* Only in case a combination of fibres and/or woody particles are used for the production of the non-woven/random mat

Description of the fabric

Property	Unit	Standard	Value
Areal weight	g/m ²	ISO 3801 ±
Placement method (carding, airlay, ...)			..... .....
Binding style (needle punched, spunlaced)			..... .....
Standard width	cm	ISO 5025 ±
Standard length	m		.....
Standard mass	kg		.....

Footnote: Density of flax and hemp fixed at 1,45 g/cm³. 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 non-woven/ random mat of 200 g/m² has an areal volume of 0,079 mm³/mm², while a flax non-woven/ random mat of 200 g/m² has an areal volume of 0,138 mm³/mm²

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 of non-woven/random mats oriented in machine direction

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

MECHANICAL PROPERTIES OF NON-WOVEN/ RANDOM MAT COMPOSITE	TENSION	FLEXION
$V_f(\%)^*$ \pm \pm
Modulus in MD** (GPa)	$E_1 =$ \pm (1)	$E_1 =$ \pm (1)
Modulus in CD** (GPa)	$E_1 =$ \pm (1)	$E_1 =$ \pm (1)
Strength in MD (MPa) \pm \pm
Strength in CD (MPa) \pm \pm
Failure strain in MD (%) \pm \pm
Failure strain in CD (%) \pm \pm
Standards	ISO 527	ISO 14125

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

** MD: machine direction

** CD: cross direction

(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

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 of non-woven/random mats oriented in machine direction

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

MECHANICAL PROPERTIES OF NON-WOVEN/ RANDOM MAT COMPOSITE	TENSION	FLEXION
$V_f(\%)*$ ± ±
Modulus in MD** (GPa)	$E_1 = \dots \pm \dots (1)$	$E_1 = \dots \pm \dots (1)$
Modulus in CD** (GPa)	$E_1 = \dots \pm \dots (1)$	$E_1 = \dots \pm \dots (1)$
Strength in MD (MPa) ± ±
Strength in CD (MPa) ± ±
Failure strain in MD (%) ± ±
Failure strain in CD (%) ± ±
Standards	ISO 527	ISO 14125

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

** MD: machine direction

** CD: cross direction

(1) E_1 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 thermoset and/or thermoplastic matrix used for composite production (mandatory)

Certification

European Flax® certified Yes No

Other:

Additives

No additives

Appearance: Powder Other, specify:

Type & brandname:

Purpose of additive*:

*For example: odour or matrix material

Mass fraction in non-woven/random mat:

Treatment

Treatment: Yes No

Purpose(s) of treatment:

Compatibilised for use with:

Other:

Sizing: Yes No

Purpose(s) sizing:

.....
.....

Recommended storage and use conditions

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.....

Suggestions for additional information

Unique properties: life cycle analysis and vibrational damping properties

Impact properties

Sales aspects

