

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

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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
$V_f(\%)^*$ ± ±
Modulus in MD** (GPa)	E1 = ± (1)	E1 = ± (1)
Modulus in CD** (GPa)	E1 = ± (1)	E1 = ± (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) E1 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)	E1 = ± (1)	E1 = ± (1)
Modulus in CD** (GPa)	E1 = ± (1)	E1 = ± (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) E1 measured between 0 and 0,1% strain, adapted for natural fibres, more details can be found in the CELC guideline.

Additional information

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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:

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.....

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