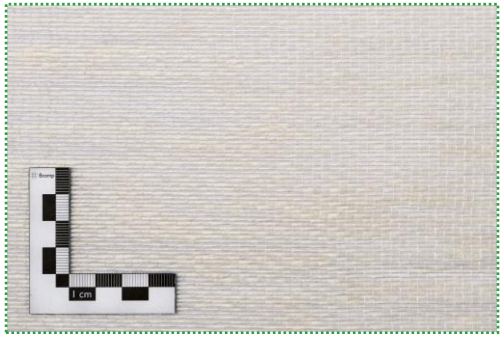
ampliTex®
Art. No. 5039 white low twist flax / unidirectional fabric 120 gsm



Product description

Non-crimp unidirectional fabric with fibres oriented at 0°, suitable for manufacturing fibre reinforced composite products with a high performance and a low environmental impact. The color after impregnation is "cream white", which avoids too much heating when exposed to the sun.

Fabric construction

Fibre type: White Flax (EU)

Construction: 0°

Yarn tex: 200 TEX

Fabric weight : 120 gsm +/- 5%

Weft thread:
textured polyester, 6 g/cm

Measurements

Standard width: 750 mm

Standard roll length: 50 m

Performance advantage

Considering that glass fibers have a density of 2600 kg/m^3 and a tensile modulus of 70 GPa, the flax ampliTex® UD 120 gsm can replace a 195 gsm glass fiber UD fabric to have the same stiffness in tension.

In compression, the performance of flax is a bit lower, thus the flax ampliTex® UD 120 gsm can replace a 160 gsm glass fiber UD fabric to have the same stiffness.

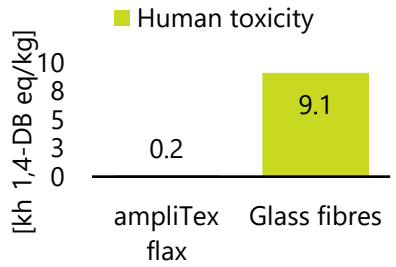
	Technical specifications	Dry fibres	Composite *
Tensile	Modulus // to fibres	60 GPa	29 GPa
	Modulus ⊥ to fibres	6.1 GPa	-
	Strength // to fibres	630 MPa	306 MPa
	Strength ⊥ to fibres	-	-
	Strain to failure // to fibres	-	1.5 %
	Strain to failure ⊥ to fibres	-	-
Flexural	Modulus // to fibres	54 GPa	26.1 GPa
	Modulus ⊥ to fibres	6.1 GPa	3.6 GPa
	Strength // to fibres	692 MPa	322 MPa
	Strength ⊥ to fibres	-	48.8 MPa
	Yield strength // to fibres	190 MPa	93 MPa
	Density	1350 kg/m^3	

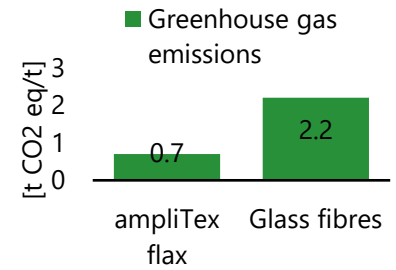
* Properties are measured on specimens with 13 layers aligned at 0°, pressed at 5 bars (50% fiber weight, 46% Vf), with Epoxy resin Huntsman LY5052 / Aradur 5052, cured at 80°C. Fibers dried 15min at 110°C prior processing.

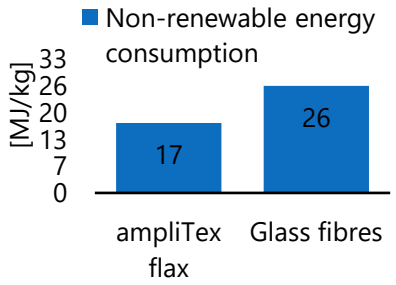
Ecological aspects

Grown in France and Belgium, flax used at Bcomp is a regional resource.

Production of flax has a negative global warming indicator because of the CO_2 sequestration by photosynthesis.







Processing guidelines

- Well compatible with epoxy and polyester
- Near-zero CTE, hence good processing compatibility with carbon fibres
- Compatible with infusion-based processes (vacuum infusion, RTM), wet layup, bladder inflation moulding (BIM) and compression moulding
- Flax fibers always contain some humidity at ambient conditions. Some resins (especially polyesters) are sensitive to moisture and may badly polymerize or create bubbles. In that case, dry the fabrics before use (110°C for 15 minutes)
- Fibre weight fraction of 50% can be reached with process pressure > 5 bars. However, the fibres absorb a lot of resin when laminating the fabric and it tends to look “dry” (unless too much resin is used) before pressure is applied. We recommend controlling the amount of adhesive used for laminating and impregnating it with 50 to 60% resin in weight. Excess resin comes out while pressing the fabric.

For further details please contact us on: t +41 (0)26 558 84 02 | email: contact@bcomp.ch