

ampliTex[®]
 Art. No. 5057
 UD fabric
 150 gsm



Product description

Non-crimp unidirectional flax fabric with fibres oriented at 0°, suitable for manufacturing fibre reinforced composite products with high performance and low environmental impact.

Fabric construction

Fibre type: Flax (EU)

Construction: 0°

Fibre tex: 300 TEX

Fabric weight: 150 gsm +/- 5%

Stitching thread: textured polyester. 4/cm

Measurements

Standard width: 1000 mm

Standard roll length: 50 m

Performance advantage

Considering that glass fibres have a density of 2600 kg/m³ and a tensile modulus of 70 GPa, the flax ampliTex UD 150 gsm can replace a 250 gsm glass fibre UD fabric to have the same stiffness in tension.

In compression, the performance of flax is lower, so that the flax ampliTex UD 150 gsm can replace a 220 gsm glass fibre UD fabric to have the same stiffness.

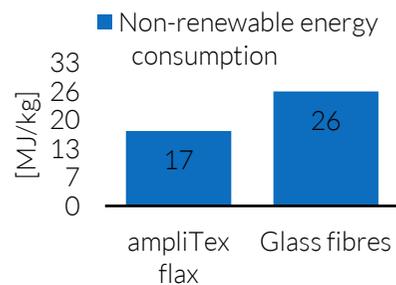
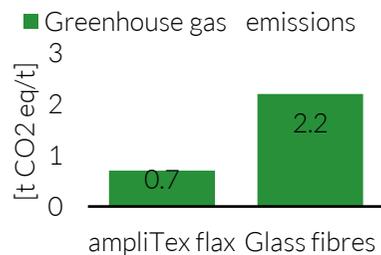
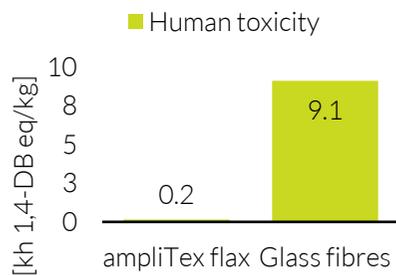
| | Technical specifications | Composite * |
|----------|---|------------------------|
| Tension | Modulus // to fibres | - |
| | Modulus ⊥ to fibres | - |
| | Strength // to fibres | - |
| | Strength ⊥ to fibres | - |
| | Strain to failure // to fibres | - |
| | Strain to failure ⊥ to fibres | - |
| Flexural | Modulus // to fibres | 33.3 GPa |
| | Modulus ⊥ to fibres | 3.6 GPa |
| | Strength // to fibres | 315 MPa |
| | Strength ⊥ to fibres | 43.4 MPa |
| | Yield strength R _{p0.2} // to fibres | 191 MPa |
| | Density of fibres | 1430 kg/m ³ |
| | Ply thickness | 0.20 mm |

*Measured on specimens made by vacuum infusion and then pressed at 6 bars, 12 layers of fabric, resin 5052 from Huntsman, 52%Vf

Ecological aspects

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

Production of flax has a negative global warming indicator because of CO₂ sequestration by photosynthesis



Processing guidelines

- Good compatibility 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 fibres 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 60% can be reached with process pressure > 5 bars. However, the fibres absorb a lot of resin when hand-laminating the fabric and it tends to look “dry” (unless too much resin is used) before pressure is applied. We recommend controlling amount of adhesive used for laminating and to impregnate with 50 to 60% resin in weight. Excess resin comes out while pressing the fabric. Please refer to my comments in the other documents, since the corrections are the same

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