

AmpliTex light UD flax fabric 100 gsm

1. Product description

Non crimp unidirectional fabric with fibers oriented at 0°. Suitable for manufacturing of fiber reinforced composite products with high performance and low environmental impact.

2. Specifications

Fabric construction

Fibre type:	Flax (EU)
Construction:	0°
Yarn tex :	200 TEX
Fabric weight :	100 gsm +/- 5%

Standard width: 1150 mm

Standard roll length*: 100 m

* other length on request

3. Mechanical properties

Composite properties

Properties measured on samples with 5 layers aligned at 0°, manufactured in a press with 5 bar pressure (52% fiber weight), with Epoxy resin R&G typ L, cured at 80 °C. Fibers dried 30 min at 110 C° prior processing.

Flexural Modulus parallel to fibers	-	GPa
Flexural Modulus perpendicular to fibers	-	GPa
Flexural Strength parallel to fibers	-	MPa
Flexural Strength perpendicular to fibers	-	MPa
Flexural Yield Strength parallel to fibers	-	MPa
Tensile Modulus parallel to fibers	36	GPa
Tensile Modulus perpendicular to fibers	-	GPa
Tensile Strength parallel to fibers	410	MPa
Tensile Strength perpendicular to fibers	-	MPa
Tensile Strain to failure parallel to fibers	-	%
Tensile Strain to failure perpendicular to fibers	-	%

Fiber properties

Properties of fibers used in the fabric are:

Tensile modulus of fibers	58.5	GPa
Tensile strength fibers	700	MPa
Density of fiber	1.35	kg/dm ³

Considering that glass fibers have a density of 2.6 kg/dm³ and a tensile modulus of 70 GPa, the flax ampliTex UD 100 g/m² can replace a 160 g/m² glass fiber UD fabric to have the same stiffness in tension.

4. 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 molding (BIM), compression molding
- Sensitive to humidity: dry fabric prior impregnating at 110°C for 15 minutes in ventilated oven
- Fibre weight fraction of >50% can be reached with process pressure >5 bar. 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 amount of adhesive used for laminating and to impregnate with 50-60% resin in weight. Excess resin will be pressed out once pressure is applied.