Bcomp® | ampliTex™

Technical Data Sheet
ampliTex™ Ref. 5043

ampliTex™

Art. No. 5043

twill 2/2 fabric 200 gsm

ampliTex™ 5043 is a bidirectional fabric with fibers oriented at 0° and 90°, suitable for manufacturing of high performance composite products with low environmental impact. The twill weave guarantees an ideal balance between drapability and antislip protperties, suited for the manufacturing of complex parts. The use of untwisted yarns ensures high laminate stiffness.

Fabric architecture

Fibre type : Flax (EU)

Construction : twill 2/2 weave

Yarn Tex : 300tex

Fabric weight : 200

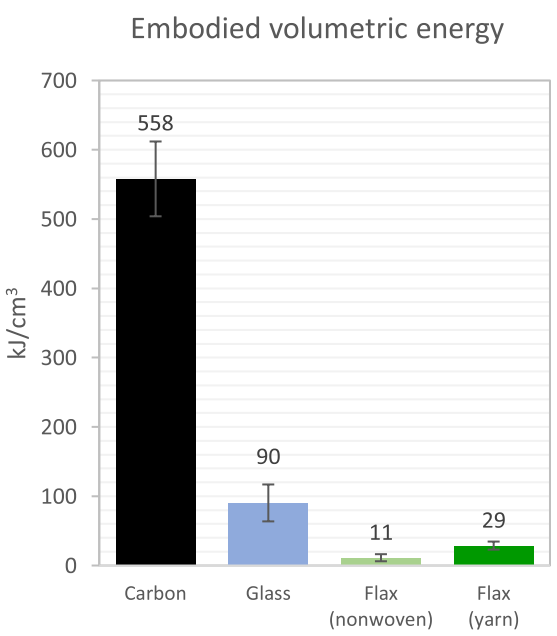
Dimensions

Standard width : 1000

Standard roll length : 50 m

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 the CO2 sequestration by photosynthesis.
Find more details on bcomp.ch .



Technical Performance

The flax fibres used in ampliTex™ fabrics have a modulus of about 60 GPa and a tensile strength of 650 MPa, which makes them a performing technical fibre.
Comparing the specific stiffness of ampliTex™ and glass fibres shows that the tensile performance of ampliTex™ fabrics is about 50% better.
Further advantages are vibration damping properties which are much greater compared to glass or carbon fibre, and less fragile fracture behavior than carbon fibre.

Tensile Properties	
Young's Modulus // to fibres (GPa)	16.6
Young's Modulus ⊥to fibres (GPa)	16.6
Strength // to fibres (MPa)	135.9
Strength ⊥ to fibres (MPa)	135.9
Strain to failure // to fibres (%)	1.07
Strain to failure ⊥to fibres (%)	1.07

Flexural Properties	
Modulus // to fibres (GPa)	11.3
Modulus ⊥to fibres (GPa)	11.3
Strength // to fibres (MPa)	155.5
Strength ⊥to fibres (MPa)	155.5
Yield strength, Rp0.2 // (MPa)	76.5

Ply Properties	
Density dry fibers (kg/m^3)	1470 ± 20
Ply thickness (mm)	0.43

* ISO 14125 flexural properties and ply properties measured on specimens manufactured from 6 layers of dry farbic infused under vacuum and cured at 60°C. Fibre volume fraction of 31%.
**Tensile properties theorised from known relationships between flexural and tensile measurements, for a fibre volume fraction of 46%

Processing Guidelines

- Excellent compatibility with epoxy and polyester
- Near-zero CTE, hence full 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 under ambient conditions. Some resins (especially polyesters) are sensitive to moisture and may poorly polymerize or create bubbles. In this case we recommend drying the fabrics prior use (110°C for 15 minutes)
- Fibre weight fraction of 60% can be achieved with process pressure > 5 bars. However, the fibres absorb a lot of resin when hand-laminating and it tends to look “dry” (unless too much resin is used) before pressure is applied. We recommend controlling the amount of resin used for laminating and impregnating with 50 to 60% resin in weight. Excess resin will be squeezed out while pressing.