

EKOA PRE-PREGS P-SU 8.1 TECHNICAL DATA SHEET

Lingrove Ekoa is fiber reinforced preimpregnated composite materials with high performance and low environmental impact. This product is made from D-SU 8.1 uni-directional fabrics and biobased resin.

Fabric Specification

Fabric Type	Flax (EU)
Construction	0°
Fiber TEX	954 denier (106 TEX)
Fabric Weight	8.1 oz/yd ² (275 gsm +/- 5%)
Stitching Thread	Textured Polyester, 0.4 per inch (1/cm)
Standard Width	13.78 inch (350 mm)
Standard Roll Length	164 ft (50 m)

Mechanical Properties

Composite Properties: Properties measured on samples with 6 layers aligned at 0°, manufactured in a press with 5 bars pressure (57% fiber weight after process).

Flexural Modulus parallel to fibers	26GPa	3.77 Msi
Flexural Modulus perpendicular to fibers	3.7 GPa	536 Ksi
Flexural Strength parallel to fibers	330 MPa	47.8 Ksi
Flexural Strength perpendicular to fibers	42 MPa	6.1 Ksi
Flexural Yield Strength parallel to fibers	209 MPa	30.3 Ksi
Tensile Modulus parallel to fibers	32 GPa	4.6 Msi
Tensile Modulus perpendicular to fibers	3.2 GPa	464 Ksi
Tensile Strength parallel to fibers	383 MPa	55.5 Ksi
Tensile Strength perpendicular to fibers	22 MPa	3.2 Ksi
Tensile Strain to failure parallel to fibers	1.7%	
Tensile Strain to failure perpendicular to fibers	0.6%	

Fiber Properties

Considering that glass fibers have a density of 2.6 kg/dm³ and a tensile modulus of 70GPa, the flax ampliTex UD 275 g/m² can replace a 480 g/m² glass fiber UD fabric to have the same stiffness in tension. In compression, the performance of flax is a bit lower, so that the flax ampliTex UD 275 g/m² can replace a 350 g/m² glass fiber UD fabric to have the same stiffness.

Tensile Modulus of fibers	58.5 GPa	8.5 Ksi
Tensile Strength of fibers	700 MPa	101.5 Ksi
Density of fibers	1.35 kg/dm ³	

Processing Guidelines

Near-zero CTE, hence good processing compatibility with carbon fibers. Compatible with vacuum molding, autoclave molding, bladder inflation molding (BIM), compression molding.

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Pre-preg Specifications

Lingrove® Pre-preg Systems are manufactured with Entropy Resins' biobased resins and are available in CORAL, a traditional high temperature cure (250°F, 120°) pre-preg resin system, or SHARK, a lower activation temperature (220°F, 100°C), faster curing pre-preg resin system. Both systems exhibit excellent mechanical properties and improved impact resistance over conventional epoxy based pre-preg systems. CORAL is our standard system

Recommended Cure Cycles

For best results, a heat ramp of 1-2°/min with a dwell at 180°F (80°C) for 30 minutes and an additional dwell at the minimum activation temperature for 30 minutes is recommended.

Typical fiber weight ratio: 50% (+/- 3%)

Out Life at 68°F (20°C): 15 days (Shark), 30 days (Coral)

Storage

The material should be kept frozen at -18°C. It must be kept in sealed plastic bags which must not be opened until fully thawed to room temperature. Shelf life at -18°C is no less than 12 months.

Health & Safety

Despite their natural derivation, exposure to these materials represents hazards typical to all epoxy resins. Exposure should be minimized and avoided through the use of proper protective clothing and equipment and appropriate manufacturing controls. All persons who use, store, or transport these materials should properly understand the handling precautions and recommendations as stated in the MSDS. Please refer to the MSDS for the most up to date Safety and Handling information.

Processing Guidelines

Near-zero CTE, hence good processing compatibility with carbon fibers.

Suitable for: Vacuum molding, autoclave molding, bladder molding (BIM), and compression molding.