

EKOA PRE-PREGS P-SX 10.3 TECHNICAL DATA SHEETS

Lingrove Ekoa is fiber reinforced preimpregnated composite materials with high performance and low environmental impact. This product is made from D-UD 1.5 flax tape and biobased epoxy resin.

Fabric Specification

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|----------------------|--|
| Fabric Type | Flax (EU) |
| Construction | 0° |
| Fiber TEX | 954 denier (106 TEX) |
| Fabric Weight | 10.3 oz/yd ² (350 gsm +/- 5%) |
| Stitching Thread | Textured Polyester, 0.4 per inch (1/cm) |
| Standard Width | 50 inch (1270 mm) |
| Standard Roll Length | 164 ft (50 m) |

Mechanical Properties

Composite Properties: Properties measured on samples with 2 layers aligned at 90°, manufactured in a press with 5 bars pressure (57% fiber weight after process).

| | | |
|----------------------|---------|----------|
| Tensile Modulus | 23 GPa | 3.3 Msi |
| Tensile Strength | 457 MPa | 66.1 Ksi |
| Compression Modulus | 21 GPa | 3.1 Msi |
| Compression Strength | 439 MPa | 63.6 Ksi |

Fiber Properties

| | | |
|-------------------------------------|-------------------------|-----------|
| Tensile Modulus of fibers | 58.5 GPa | 8.5 Ksi |
| Specific Tensile Modulus | 700 MPa | 101.5 Ksi |
| Tensile Strength parallel to 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.

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)

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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.