

Technical Datasheet: 2.0 mm Thick ECONOMY Carbon Fibre Reinforced Epoxy

Product Description

2.0 mm thick **ECONOMY** composite laminate comprising of 100% carbon fibre layers combined with Lloyds approved epoxy resin. This balanced and symmetric laminate offers excellent mechanical performance and dimensional stability with intermediate temperature performance up to 90°C. This laminate is typically available from stock in various sizes ranging from 148 x 210 mm to 2440 x 1220 mm (larger sizes available upon request). Laminates can be constructed to a designated ply count and orientation upon request. By utilising composite laminate sheets the customer can avoid hand lamination and can significantly reduce the cycle time required to produce a finished assembly.

Product Summary

- Toray T700 carbon fibre 2x2 twill weave 375g/m² – multiple layers
- Lloyds approved epoxy resin system
- 100% carbon fibre epoxy laminate
- High gloss smooth finish top side
- Surface finish; Gloss/Matte(optimum bonding)
- Removable scratch protection film on gloss side

Typical Applications

- **Marine:** Instrument and control panels, centre consoles, wall panelling, partitions.
- **Automotive:** Dashboards, door cards, racing cockpit panelling.
- **Consumer:** Advertising and signage panels. R/C modelling. Excellent for making vehicle engine mounts, back-plates, front body mounts, shock towers, upper deck chassis parts, smaller UAV's

Table 1: Mechanical Properties

Property	Condition	Test Method	Result
Flexural Strength 0°	RTD	ASTM D7264/D7264M (Procedure A)	730 MPa
Flexural Strength 90°	RTD	ASTM D7264/D7264M (Procedure A)	710 MPa
Flexural Modulus 0°	RTD	ASTM D7264/D7264M (Procedure A)	55 GPa
Flexural Modulus 90°	RTD	ASTM D7264/D7264M (Procedure A)	52 GPa
Young's Modulus 0/90	RTD	Modelled Value	65 GPa
***Interlaminar Shear Strength (ILSS) 0°	RTD	ASTM D2344/2344	54 MPa
***Interlaminar Shear Strength (ILSS) 90°	RTD	ASTM D2344/2344	52 MPa

*RTD – designates test occurred at ambient room temperature (23°C) in dry condition

**All values are actual measured values and have not been normalised/adjusted according to V_f

*** ILSS test only valid for test specimens greater than 2.0 mm

Table 2: Physical Properties

Property	Result
Glass Transition Temperature (Onset)	90°C*
Density	1480kg/m ³ (±20)
Nominal Fibre Volume Fraction (V _f)	55%
Coefficient of thermal expansion 0/90°	2.0 – 2.5 x10 ⁻⁶ K ⁻¹

*Temperature sweep conducted single frequency scan at 2°C/min.

Tg measured via DMA onset of storage modulus curve.

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