Technical Datasheet

CFS-RI

High Strength Carbon Fibre Sheet

Key Features

- 100% high strength carbon fibre
- Flat, textured bonding surface on reverse

Description

Premium quality carbon fibre sheet manufactured using 100% high-strength carbon fibre reinforcement and epoxy resin with a smooth, glossy, cosmetic quality carbon fibre finish on one side and a textured 'peel-ply' finish on the reverse.

Typical Uses

- Motorsport / marine / light aircraft
- Engineering / automation
- Displays / exhibitions / shop-fitting
- Cabinets / enclosures / high-end audio
- Further processing into sandwich panels

Specification

Quasi-Isotropic Layup

To create a more uniform distribution of strength, these sheets are manufactured using layers of 0°/90° and 45°/-45° oriented reinforcement in a quasi-isotropic fibre orientation. This offers improved stiffness across their diagonal axis and significantly improved torsional stiffness.

Laminate Composition and Tolerances

Using a high temperature cure cycle to maximise mechanical strength, the sheets also have a resultant Tg (glass transition temperature) of 80°C.

To achieve maximum stability and flatness the sheets are made with a symmetrical stack up in both fibre weight and weave.

Sheet Thickness	Layup Schedule	Thickness & Tolerance
1.0mm	210g 22 twill 300g +/-45 biax 210g 22 twill	0.9mm +/- 0.2mm
2.0mm	210g 22 twill 300g +/-45 biax 650g 22 twill 300g +/-45 biax 210g 22 twill	1.7mm +/- 0.2mm
3.0mm	210g 22 twill 300g +/-45 biax 650g 22 twill 210g 22 twill 650g 22 twill 300g +/-45 biax 210g 22 twill	2.8mm +/- 0.2mm
4.0mm	210g 22 twill 300g +/-45 biax 650g 22 twill 650g 22 twill 650g 22 twill 650g 22 twill 300g +/-45 biax 210g 22 twill	4.0mm +/- 0.2mm

Property	Units	Value*			
Sheet Thickness	**mm**	**1.0**	**2.0**	**3.0**	**4.0**
Weight	kg/m^2	1.32	2.80	4.11	5.84
Density	g/cm^3	1.15	1.02	1.27	4.46
Tensile Strength 0/90°	MPa	503	558	644	-
Tensile Strength 45°	MPa	557	622	443	-
Tensile Modulus 0/90°	GPa	37.2	43.9	47.4	-
Tensile Modulus 45°	GPa	32.3	34.5	27.1	-
Youngs Modulus 0/90° Gloss Side Compr.	GPa	32.4	35.1	10.3	-
Youngs Modulus 0/90° Gloss Side Tension	GPa	31.6	35.3	10.5	-
Elongation at Break at 0/90°	%	2.27	2.91	3.88	-
Elongation at Break at 45°	%	3.13	4.11	4.10	-

*Data measured from a typical production sheet

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