

Attribute	Specification / Typical Value	Standard / Notes
Product Name	Unidirectional Carbon Fiber Fabric (UD Carbon Fabric)	Also known as UD prepreg fabric or tape
Weave Type	Unidirectional (0° alignment of carbon tows)	No cross-weave; maximum axial strength
Fiber Type	3K / 6K / 12K / 24K PAN-based Carbon Fiber	Toray T700 / T300 / Mitsubishi / Zoltek options available
Binder Type	Epoxy-compatible binder, thermoplastic binder, or no binder	Customizable based on resin system
Areal Weight	100 gsm - 600 gsm	Typically 150, 200, 300, 600 gsm options
Fabric Width	1000 mm (39.4") / 1270 mm (50") / 1500 mm (59")	Custom widths available upon request
Roll Length	50 m - 100 m (164 ft - 328 ft)	Longer rolls for automated lay-up
Fiber Orientation	0° (100% carbon fiber in warp direction)	For high tensile load-bearing structures
Tensile Strength	≥ 4000 MPa	ASTM D3039 / ISO 527
Tensile Modulus	≥ 230 GPa	High stiffness performance
Elongation at Break	$\sim 1.5\%$	Indicates brittleness or ductility
Density	1.78 g/cm ³	Based on PAN-based carbon fiber
Thermal Conductivity	~ 8 W/m • K (in fiber direction)	Excellent heat transfer along fiber axis
Electrical Conductivity	Highly conductive in fiber direction	Useful in EMI/RFI shielding
Volatile Content	<2%	For dry fabric
Surface Finish	Dry fabric or semi-preg (resin-compatible finish)	Surface treatments available
Compatible Resins	Epoxy, Vinyl Ester, Polyester, Phenolic, BMI, Cyanate Ester	Choose resin according to final application
Thermal Stability	Up to 300° C (dry fiber); 120 - 180° C (with cured resin)	Depends on matrix compatibility
Moisture Absorption	<0.2%	Hydrophobic properties
Application Methods	Hand lay-up, filament winding, RTM, vacuum infusion, prepreg molding	Versatile manufacturing processes
Certifications Available	ISO 9001, SGS, RoHS, REACH compliant	Certificates on request
Common Applications	Aerospace, Sporting Goods, Automotive, Wind Energy, Marine, Civil Engineering	High stiffness and directional load design
Packing Method	Rolled on core tube, sealed in poly bag, Moisture-proof packaging for	

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	packed in export carton	export
Shelf Life (dry fabric)	24 months in dry, UV-protected, room temperature storage	Keep away from humidity and direct sunlight