

Attribute	Specification / Typical Value	Standard / Notes
Product Name	Twill Weave Carbon Fiber Fabric	2×2 or 3×1 twill patterns
Fiber Type	PAN- based Carbon Fiber (3K / 6K / 12K tows)	Toray® T300, T700 or equivalent
Weave Pattern	2×2 Twill (standard) / 3×1 Twill (optional)	Diagonal drape for complex contours
Areal Weight	200 g/m ² , 240 g/m ² , 280 g/m ² , 300 g/m ² , 600 g/m ²	Choice depends on stiffness vs. weight
Fabric Width	1000 mm, 1200 mm, 1500 mm	Tolerance ±5 mm
Roll Length	25 m, 50 m	Custom lengths available
Fabric Thickness (dry)	0.25 mm - 0.6 mm	Varies with areal weight
Fiber Volume Fraction	≥ 60 %	Measured per ASTM D3171
Density	~ 1.55 g/cm ³	Lightweight composite
Tensile Strength (fiber)	≥ 3400 MPa	ASTM D3039 (dry fiber)
Tensile Modulus (fiber)	≥ 230 GPa	High axial stiffness
Flexural Strength	≥ 500 MPa	ASTM D790
Flexural Modulus	≥ 50 GPa	ASTM D790
Interlaminar Shear Strength	≥ 60 MPa	ASTM D2344
Compressive Strength	≥ 450 MPa	ASTM D695
Thermal Stability	Up to 180 ° C (dry); resin- dependent	Cured temp per resin system
Coefficient of Thermal Expansion	≈ - 0.5 × 10 ^{- 6} /° C (in- plane)	ASTM E228
Electrical Conductivity	Conductive (along fiber)	EMI/RFI shielding
Water Absorption	≤ 0.2 % (24 h immersion)	ASTM D570
Resin Compatibility	Epoxy, Vinyl Ester, Polyester, Phenolic	Suitable for hand lay-up, RTM, vacuum infusion
Surface Finish	Dry Fabric (standard); prepreg version on request	Prepreg available with controlled resin content
UV Resistance	Requires UV- stable resin coating	Carbon fiber itself degrades under UV
Fire Retardant Option	UL94 V- 0 resin formulation available	For aerospace & electronics
Certifications	ISO 9001:2015, RoHS, REACH compliant	Material certificates available
Applications	Aerospace panels, automotive trim,	High strength,

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	sporting goods, marine, drones, wind turbine blades	drapability, and lightweight demands