

Property	Typical Value / Specification	Standard / Notes
Product Type	Large Diameter Carbon Fiber Tube	Cylindrical CFRP composite tube
Material	100% Carbon Fiber + Epoxy Resin (T300/T700/T800 or customized)	Aerospace-grade prepreg or wet lay-up
Outer Diameter (OD)	100 mm - 1000 mm (3.94" - 39.37")	Customizable for industrial use
Inner Diameter (ID)	As required, typically 90 mm - 980 mm	Based on wall thickness
Wall Thickness	2 mm - 10 mm	Variable depending on strength/stiffness needs
Length	Up to 6000 mm (236")	Custom cutting available
Weave Type	Twill 3K / Plain / UD / Multiaxial	Outer layer can be aesthetic or functional
Surface Finish	Glossy / Matte / Natural Carbon Fiber Weave	UV-resistant coating optional
Tensile Strength	$\geq 700$ MPa	ASTM D3039
Tensile Modulus	$\geq 80$ GPa	ASTM D3039
Flexural Strength	$\geq 600$ MPa	ASTM D790
Compression Strength	$\geq 500$ MPa	ASTM D695
Impact Resistance	Excellent shock absorption, high fracture toughness	Ideal for structural applications
Thermal Stability	-50 ° C to +130 ° C	Long-term service temperature
Fire Resistance	Optional flame-retardant epoxy system	UL 94 V-0 available
Electrical Conductivity	Conductive (standard) Insulating (optional resin systems)	EMI shielding available
Corrosion Resistance	Non-metallic, excellent saltwater and chemical resistance	Ideal for marine and chemical environments
Weight	~70% lighter than steel ~50% lighter than aluminum	High strength-to-weight ratio
Connection Method	Threaded inserts, bonded joints, flange mounting	CNC-machined ends available
Manufacturing Process	Roll-wrapped / Filament-wound / Autoclave cured	For strength-critical applications
Customization Options	OD/ID, wall thickness, length, surface, resin, fiber orientation	OEM & ODM services supported
Certifications	ISO 9001 / RoHS / REACH / MSDS / ASTM Material Reports	Third-party testing on request
Applications	Aerospace components, robotics arms, industrial rollers, marine masts, camera	Large-load, corrosion-prone

Property	Typical Value / Specification	Standard / Notes
	tracks, drone launch tubes	environments