Property	Specification / Typical Value	Standards / Notes
Product Type	Carbon Fiber Hexagonal Tube	Hex-profile composite tubing
Material Composition	100% Carbon Fiber + Epoxy Resin (T300/T700 or customized)	High-strength aerospace-grade fiber
Outer Width (Flat-to-Flat)	8 mm – 80 mm (custom available)	Flat-side to flat-side distance
Wall Thickness	1.0 mm – 5.0 mm	Custom thickness based on load requirements
Length	500 mm – 3000 mm standardUp to 6000 mm on request	Custom cutting and tolerance control
Shape Type	Regular Hexagonal Cross-section	Symmetrical 6-sided design
Weave Type	Twill 3K / Plain / UD (unidirectional)	Outer layer can be decorative or structural
Surface Finish	Glossy / Matte / Raw Carbon Fiber Texture	Optional clear coating for UV resistance
Tensile Strength	≥600 MPa	ASTM D3039
Tensile Modulus	≥70 GPa	ASTM D3039
Flexural Strength	≥500 MPa	ASTM D790
Compression Strength	≥450 MPa	ASTM D695
Impact Resistance	High impact absorption	Durable under vibration and collision loads
Density	~1.5 – 1.6 g/cm³	Lightweight structure
Temperature Resistance	-40 °C to +120 °C (standard)Higher range optional	Long-term stable performance
Conductivity	Electrically conductive (standard)Non-conductive optional	EMI shielding available
Fire Retardancy	Optional flame-retardant resin available	UL 94 V-0 rating optional
Corrosion Resistance	Excellent – Resistant to saltwater, acids, alkalis	Suitable for outdoor and chemical environments
Connection / Assembly	Bonded joints, clamping, threaded inserts, epoxy gluing	Machining possible at both ends
Manufacturing Process	Roll-wrapped / Pultrusion / Compression Molded	Depending on size & strength specs
Customization Available	Shape size, thickness, length, weave, finish, color, prepreg type	OEM/ODM supported
Certifications	ISO 9001, REACH, RoHS, MSDS, ASTM testing available	Third-party validation upon request
Common Applications	Robotics frames, hex driveshafts, drones, RC models, sports equipment	Ideal for torque transfer, precise alignment, lightweight builds