Property	Specification / Typical Value	Standards / Notes
Product Name	Profiled Carbon Fiber Tube	Also known as Custom-Shaped Carbon Fiber Tube
Shape Options	Hexagonal, Octagonal, D-shape, Oval, Rectangular, Custom profiles	Custom geometries based on application needs
Material Composition	Carbon Fiber (T300 / T700 / T800) + Epoxy or Vinyl Ester Resin	Aerospace-grade or industrial-grade available
Outer Dimension Range	10 mm – 120 mm	Defined based on profile type (flat-to-flat or diameter)
Wall Thickness	0.8 mm – 6.0 mm	Uniform or tapered walls available
Length	Standard: 500 mm – 3000 mmMax: 6000 mm	Cut-to-length services provided
Weave Types	Twill 3K / Plain / Unidirectional (UD) / Multiaxial	Custom layering possible
Surface Finish	Matte / Glossy / Raw / Colored	UV-resistant coating optional
Manufacturing Process	Roll-wrapping / Compression Molding / Pultrusion	Process depends on shape complexity and volume
Tensile Strength	≥600 MPa	ASTM D3039
Tensile Modulus	≥70 GPa	ASTM D3039
Flexural Strength	≥500 MPa	ASTM D790
Compressive Strength	≥450 MPa	ASTM D695
Density	1.5 – 1.6 g/cm³	Up to 75% lighter than steel
Thermal Resistance	-40 ° C to +120 ° C (standard)Optional up to 180 ° C	Heat stable for most industrial uses
Corrosion Resistance	Excellent – Anti-acid, anti-saltwater, anti-UV	Suitable for marine & chemical exposure
Electrical Properties	Conductive (default)Non-conductive version available	EMI shielding possible
Bonding Compatibility	Suitable for gluing, screwing, insert-fitting	Ends can be CNC machined
Finish Tolerance	±0.1 mm for profile dimensions±0.05 mm for wall thickness	Tight tolerance possible with CNC finish
Customization Available	Shape, size, weave, color, length, surface, mechanical specs	OEM / ODM orders supported
Certifications	ISO 9001 / RoHS / REACH / ASTM Reports	3rd-party testing upon request
Typical Applications	Aerospace frames, UAV arms, drone structures, racing car components, sports equipment, medical braces	Ideal where lightweight + complex geometry is needed