



» PRODUCT BULLETIN

Carbon Fiber Reinforced Rods, Bars and Laminates For Strengthening, Stiffening and Lightweighting

Carbon fiber reinforced polymer (CFRP) products from Avient are continuous fiber polymer rods, bars and laminates used in a variety of structural strengthening, engineered weight reduction, and repair applications in multiple industries.

VALUE SOLUTION

Superior strength-to-weight ratio and rigidity for demanding applications

Carbon fiber reinforced products have excellent tensile strength, corrosion resistance, and light weight properties, as well as high modulus of elasticity and excellent fatigue resistance. These profiles allow for the replacement of metal, wood and other less efficient materials in order to improve overall product performance while reducing weight, cost and complexity. The highly uniform and parallel reinforcing fibers result in superior mechanical property translation, and customized profile geometries offer part consolidation and simplification of assembly. Both the laminates and the rods are flexible in the axial direction, which allows them to be contoured to curved surfaces.

KEY CHARACTERISTICS

- Exceptional strength-to-weight ratio
- Corrosion resistance
- High temperature performance
- Laminates available in continuous lengths
- Specialty surface treatments available to improve bonding
- Full machining capabilities (surface modification, drilling, shaping, waterjet, etc.)
- Custom sizes, profiles, tooling design and prototyping available for specific applications

USES AND APPLICATIONS

Transportation - Automotive chassis, automotive body panels, marine stringer systems, floor strengthening and stability reinforcement

Consumer - Watersports paddles, sporting goods sticks, tent poles, fishing rods, archery bow limbs and arrow shafts, bicycle frames, sail battens

Infrastructure & Construction - Bridge support and retrofitting repair, support beams, concrete reinforcement

Healthcare - Orthopedic external fixators

Energy - Wind turbine blades and stiffeners



TECHNICAL PROPERTIES (Typical Values)

Property	CFRP Barstock, Laminates & Pultruded Profiles	
Resin	Epoxy, Vinyl ester	
Tensile Strength	400–500 ksi	2758–3447 MPa
Flexural Strength	130–350 ksi	896–2413 MPa
Flexural Modulus	18–22 msi	124–152 GPa
Glass Transition Temperature	149–320 °F	65–160 °C
Density	0.056–0.060 lb/in ³	1.54–1.65 g/cm ³

- Maximum thickness of 0.625 in/1.59 cm
- Full machining capabilities available

To learn more about Avient carbon fiber reinforced polymer solutions, contact Avient at +1.844.4AVIENT (1.844.428.4368)

1.844.4AVIENT
www.avient.com



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