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

PRODUCT DESCRIPTION
Carbon fiber reinforced polymer (CFRP) products from PolyOne Advanced Composites 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 lightweight 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
• Sanded shapes available to provide better bonding surface
• 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)

<table>
<thead>
<tr>
<th>Property</th>
<th>CFRP Rods, Bars and Laminates</th>
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<tbody>
<tr>
<td>Tensile Strength</td>
<td>400,000 psi</td>
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<tr>
<td>Modulus of Elasticity</td>
<td>22,500,000 psi</td>
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<tr>
<td>Elongation at Break</td>
<td>1.8%</td>
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<tr>
<td>Fiber Volume Content</td>
<td>&gt; 65%</td>
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<tr>
<td>Temperature Resistance</td>
<td>300°F</td>
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To learn more about PolyOne Advanced Composites carbon fiber reinforced polymer solutions, contact PolyOne at 1.866.POLYONE (1.866.765.9663)