Carbon Fiber Hat Stiffener

Our carbon fiber hat stiffeners are comprised of plain weave carbon fiber in both 0°/90° and ±45° orientations, with 0° uni-directional carbon fiber to add stiffness and strength along the length of the hat stiffener. To optimize the design, we have added the unidirectional only to the cap of the hat stiffener. This fiber placement lets us create a stronger and stiffer hat stiffener while minimizing hat stiffener weight. This design creates a high stiffness to weight ratio, and also creates a beam that is more torsionally rigid when bonded than an i-beam. The carbon fiber hat stiffener has a textured finish on the outside and on the flange surfaces to create an ideal bonding surface.

STANDARD SIZES

<table>
<thead>
<tr>
<th>Size</th>
<th>H</th>
<th>W</th>
<th>F</th>
<th>T_{web}</th>
<th>T_{cap}</th>
<th>Weight (lbs/ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5&quot;x2&quot;</td>
<td>1.55±0.015&quot;</td>
<td>2.00±0.015&quot;</td>
<td>0.75 -0/+0.125&quot;</td>
<td>0.025&quot; ±0.01&quot;</td>
<td>0.032&quot; ±0.01&quot;</td>
<td>0.11</td>
</tr>
<tr>
<td>1&quot;x1&quot;</td>
<td>1.00±0.015&quot;</td>
<td>1.00±0.015&quot;</td>
<td>0.50 -0/+0.125&quot;</td>
<td>0.025&quot; ±0.01&quot;</td>
<td>0.032&quot; ±0.01&quot;</td>
<td>0.07</td>
</tr>
</tbody>
</table>

Lengths: 48", 24" (-0, +.25)  Finish: Textured

TECHNICAL SPECIFICATIONS

Properties of Carbon Fiber
- Tensile Strength: 512 ksi
- Modulus of Elasticity: 33.4 msi

Properties of UNI Fiber
- Tensile Strength: 640 ksi
- Modulus of Elasticity: 34 msi

Resin
- Epoxy resin that accounts for approximately 50% of the composition

Lay Up Schedule
- Web: 2 layers of ±45° plain weave, 0°/90° plain weave
- Cap: 2 layers of ±45° plain weave, 0° uni-directional, 0°/90° plain weave