Carbon Fiber I-Beam

DragonPlate carbon fiber I-beams are extremely strong in bending and shear loading. The combination of unidirectional and 0°/90° plain weave on the top and bottom flanges give the I-beam its high bending strength. Utilizing a 45° orientation in the webbing allows the I-beam to have exceptional shear strength, as well as properly transmitting loads between the top and bottom flanges. DragonPlate's I-beam construction allows for an extremely thin, lightweight I-beam to obtain the same effect as a thicker, heavier pultruded I-beam. Carbon fiber I-beams can offer similar properties in bending and shear as sandwich panels with the same thickness, but without the added weight from unnecessary core material. Textured finish on the top and bottom of I-beams make for bonding to thin panels to create an extremely stiff and strong structure.

**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 $W_f \approx 50\%$

**Lay Up Schedule**
- Web: 2 layers of ±45° plain weave CF
- Flanges: 2 layers of ±45° plain weave CF, 0° unidirectional CF, 0°/90° plain weave CF

**STANDARD SIZES**

<table>
<thead>
<tr>
<th>J</th>
<th>T</th>
<th>H</th>
<th>W</th>
<th>WEIGHT (lbs/ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&quot;</td>
<td>0.038&quot; ± 0.015&quot;</td>
<td>1.08&quot; ± 0.015&quot;</td>
<td>0.75&quot; +0.125&quot;/-0</td>
<td>0.06</td>
</tr>
<tr>
<td>2&quot;</td>
<td>0.038&quot; ± 0.015&quot;</td>
<td>2.09&quot; ± 0.015&quot;</td>
<td>1.50&quot; +0.125&quot;/-0</td>
<td>0.11</td>
</tr>
</tbody>
</table>

**Additional Options**
- Custom Lengths
- Custom Flange Lengths
- Custom Web Lengths
- Custom Thicknesses
- CNC Machining
- Design and Engineering Services

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