



# DragonPlate™

Material Specifications



## Carbon Fiber I-Beam

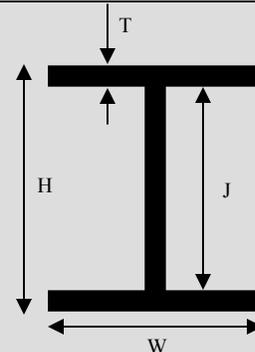
DragonPlate carbon fiber I-beams are extremely strong in bending and shear loading. The combination of uni-directional and 0°/90° plain weave on the top and bottom flanges give the I-beam its high bending strength. Utilizing a 45° orientation in the webbing allows the I-beam to have exceptional shear 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.

### STANDARD SIZES

J	T	H	W	WEIGHT (lbs/ft)
1"	0.038" ± 0.015"	1.08" ± 0.015"	0.75" +0.125"/-0	0.06
2"	0.038" ± 0.015"	2.09" ± 0.015"	1.50" +0.125"/-0	0.11

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

Finish: Web: Matte  
Flanges: Matte Inside  
Textured Top/Bottom



### Additional Options

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

### 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° uni-directional CF, 0°/90° plain weave CF