



# DragonPlate™

Material Specifications



## Carbon Fiber Hat Stiffener

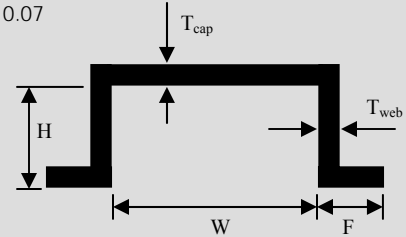
Our carbon fiber hat stiffeners are comprised of plain weave carbon fiber in both 0°/90° and ±45° orientations, with 0° uni-directional carbon fiber to add stiffness and strength along the length of the hat stiffener. To optimize the design, we have added the unidirectional only to the cap of the hat 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

Size	H	W	F	T <sub>web</sub>	T <sub>cap</sub>	WEIGHT (lbs/ft)
1.5" x 2"	1.55" ± 0.015"	2.00" ± 0.015"	0.75" -0/+0.125"	0.025" ± 0.01"	0.032" ± 0.01"	0.11
1" x 1"	1.00" ± 0.015"	1.00" ± 0.015"	0.50" -0/+0.125"	0.025" ± 0.01"	0.032" ± 0.01"	0.07

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

Finish: Textured



### Additional Options

- Custom Sizes
- Custom Lengths
- Custom Flange 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, 0°/90° plain weave  
 Cap: 2 layers of ±45° plain weave, 0° uni-directional, 0°/90° plain weave