



**CERAMATERIALS**

*"Your One Stop Shop for Thermal Processing"*

## **Carbon Tow-Hexcel IM-7**

HexTow® IM7 carbon fiber is a continuous, high performance, intermediate modulus, PAN based fiber available in 12,000 (12K) filament count tows. The fiber has been surface treated and can be sized to improve its interlaminar shear properties, handling characteristics, and structural properties. It is suggested for use in weaving, prepregging, filament winding, braiding, and pultrusion.

The unique properties of HexTow® IM7 fiber, such as higher tensile strength and modulus, as well as good shear strength, allow structural designers to achieve both higher safety margins for both stiffness and strength critical applications.

IM7-G 12k (0.25%) carbon fiber has been qualified to NMS 818 Carbon Fiber Specifications (NCAMP). This allows customers to call out an industry standard, aerospace grade carbon fiber without the need to write and maintain their own specifications

Typical Fiber Properties	U.S. Units	SI Units
Tensile Strength 6K 12k	800 KSI 820 KSI	5,515 MPa 5,655 MPa
Tensile Modulus (Chord 6000-1000)	40.0 Msi	276 GPa
Ultimate Elongation at Failure 6K 12K	1.9% 1.9%	1.9% 1.9%
Density	0.0643 lb/in <sup>3</sup>	1.78 g/cm <sup>3</sup>
Weight/Length 6K 12K	12.5 x 10 <sup>-6</sup> lb/in 25.0 x 10 <sup>-6</sup> lb/in	0.223 g/m 0.446 g/m
Approximate Yield 6K 12K	6,674 ft/lb 3,337 ft/lb	4.48 m/g 2.24 m/g
Tow Cross-Sectional Area 6K 12K	1.94 x 10 <sup>-4</sup> in <sup>2</sup> 3.89 x 10 <sup>-4</sup> in <sup>2</sup>	0.13 mm <sup>2</sup> 0.25 mm <sup>2</sup>
Filament Diameter	0.203 mil	5.2 microns
Carbon Content	95%	95%
Twist	Never Twisted	Never Twisted

<b>Typical HexPly 8552 Composite Properties</b>	<b>U.S. Units</b>	<b>SI Units</b>	<b>Test Method</b>
0° Tensile Strength	395 ksi	2,723 MPa	ASTM D3039
0° Tensile Modulus	23.8 Msi	164 GPa	ASTM D3039
0° Tensile Strain	1.6%	1.6%	ASTM D3039
0° Flexural Strength	270 ksi	1,862 MPa	ASTM D790
0° Flexural Modulus	22.0 Msi	152 GPa	ASTM D790
0° Short Beam Shear Strength	18.5 ksi	128 MPa	ASTM D2344
0° Compressive Strength	245 ksi	1,689 MPa	ASTM Mod D695
0° Compressive Modulus	21.2 Msi	146 GPa	ASTM Mod D695
0° Open Hole Tensile Strength	62 ksi	427 MPa	ASTM D5766
0° Open Hole Compressive Strength	48.8 ksi	336 MPa	ASTM D6484
90° Tensile Strength	16.1 ksi	111 MPa	ASTM D3039
Fiber Volume	60%	60%	