



HexTow[®] IM7

Carbon Fiber

Product Data

HexTow[®] IM7 carbon fiber is a continuous, high performance, intermediate modulus, PAN based fiber available in 12,000 (12K) filament count tows. This 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 Specification (NCAMP). This allows customers to call out an industry standard, aerospace grade carbon fiber without the need to write and maintain their own specification.

Typical Fiber Properties	U.S. Units	SI Units
Tensile Strength 6K	800 ksi	5,515 MPa
12K	820 ksi	5,655 MPa
Tensile Modulus (Chord 6000-1000)	40.0 Msi	276 GPa
Ultimate Elongation at Failure 6k	1.9%	1.9%
12K	1.9%	1.9%
Density	0.0643 lb/in ³	1.78 g/cm ³
Weight/Length 6K	12.5 x 10 ⁻⁶ lb/in	0.223 g/m
12K	25.0 x 10 ⁻⁶ lb/in	0.446 g/m
Approximate Yield 6K	6,674 ft/lb	4.48 m/g
12K	3,337 ft/lb	2.24 m/g
Tow Cross-Sectional Area 6K	1.94 x 10 ⁻⁴ in ²	0.13 mm ²
12K	3.89 x 10 ⁻⁴ in ²	0.25 mm ²
Filament Diameter	0.203 mil	5.2 microns
Carbon Content	95.0%	95.0%
Twist	Never Twisted	Never Twisted

Typical HexPly 8552 Composite Properties	U.S. Units	SI Units	Test Method
0° Tensile Strength	395 ksi	2,723 MPa	ASTM D3039
0° Tensile Modulus	23.8 Msi	164 GPa	
0° Tensile Strain	1.6%	1.6%	
0° Flexural Strength	270 ksi	1,862 MPa	ASTM D790
0° Flexural Modulus	22.0 Msi	152 GPa	
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	
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%	



Yarn/Tow Characteristics	U.S. Units	SI Units
Specific Heat	0.21 Btu/lb-°F	0.21 cal/g-°C
Electrical Resistivity	4.9×10^{-5} ohm-ft	1.5×10^{-3} ohm-cm
Coefficient of Thermal Expansion	-0.36 ppm/°F	-0.64 ppm/°C
Thermal Conductivity	3.12 Btu/hr-ft-°F	5.40 W/m-°K

Carbon Fiber Certification

This carbon fiber is manufactured to Hexcel aerospace grade specification HS-CP-5000. A copy of this specification is available upon request. A Certification of Analysis will be provided with each shipment.

Available Sizing

Sizing compatible with various resin systems, based on application are available to improve handling characteristics and structural properties. Please see additional information on available Sizes on our website or contact our technical team for additional information.

Packaging

Standard packaging of HexTow® IM7 is as follows:

Filament Count	Nominal Weight		Nominal Length	
	(lb)	(kg)	(ft)	(m)
6K	4.0	1.8	26,400	8,050
12K	4.0	1.8	13,350	4,070

Other package sizes may be available on request. The fiber is wound on a 3-inch ID by 11-inch long cardboard tube and overwrapped with plastic film.

Safety Information

Obtain, read, and understand the Material Safety Data Sheet (MSDS) before use of this product.



Important

Hexcel Corporation believes, in good faith, that the technical data and other information provided herein is materially accurate as of the date this document is prepared. Hexcel reserves the right to modify such information at any time. The performance values in this data sheet are considered representative but do not and should not constitute specification minima. The only obligations of Hexcel, including warranties, if any, will be set forth in a contract signed by Hexcel or in Hexcel's then current standard Terms and Conditions of Sale as set forth on the back of Hexcel's Order Acknowledgement.

For more information

Hexcel is a leading worldwide supplier of composite materials to aerospace and other demanding industries. Our comprehensive product range includes:

- Carbon Fiber
- RTM Materials
- Honeycomb Cores
- Carbon, Glass, Aramid and Hybrid Prepregs
- Structural Film Adhesives
- Honeycomb Sandwich Panels
- Special Process Honeycombs
- Reinforced Fabrics

For US quotes, orders and product information call toll-free 1-866-556-2662 and 1-800-987-0658.

For other worldwide sales office telephone numbers and a full address list, please click here:

<http://www.hexcel.com/contact/salesoffice>