



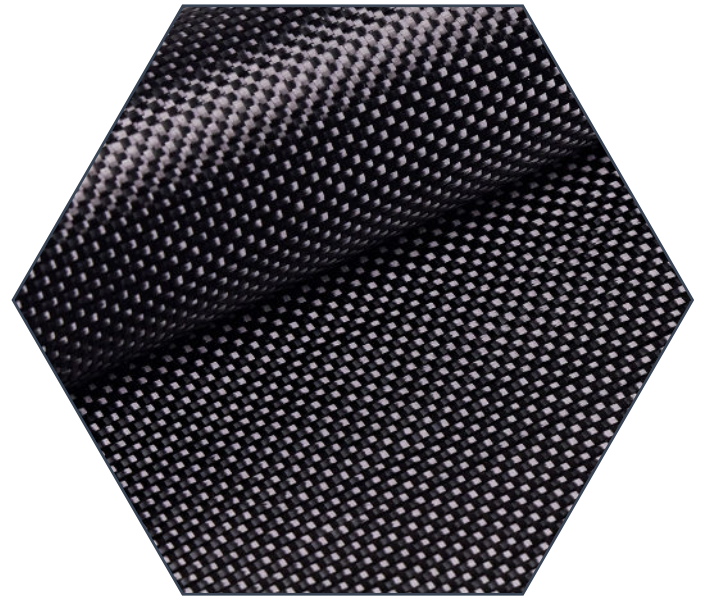
CARBON FIBER FABRIC PLAIN WEAVE INTERMEDIATE MODULUS HEXCEL IM7 MODEL #: F-1812-50

HEXTOW® IM7 CARBON FIBER

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.



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.



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YARN/TOW CHARACTERISTICS	U.S. UNITS	SI UNITS
Specific Heat	0.28 Btu/lb-°F	0.27 cal/g-°C
Electrical Resistivity	5.6 x 10 ⁻⁵ ohm-ft	1.7 x 10 ⁻³ ohm-cm
Coefficient of Thermal Expansion	-0.35 ppm/°F	-0.63 ppm/°C
Thermal Conductivity	3.95 Btu/hr-ft-°F	6.83 W/m-°K

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 ³	1.78 g/cm ³
Weight/Length 6K 12K	12.5 x 10 ⁻⁶ lb/in 25.0 x 10 ⁻⁶ 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 ⁻⁴ in ² 3.89 x 10 ⁻⁴ in ²	0.13 mm ² 0.25 mm ²
Filament Diameter	0.206 mil	5.2 microns
Carbon Content	95.0%	95.0%
Twist	Never Twisted	Never Twisted



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TYPICAL HEXPLY 8552 COMPOSITE PROPERTIES (AT ROOM TEMPERATURE)	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 Ms	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%	

Information and data included in this data sheet is considered to be accurate and reliable to the best of our knowledge however it is not guaranteed to be so. It is the user/buyer's responsibility to determine for themselves the suitability of any material for a specific purpose and to adopt such safety precautions as may be necessary. Composite Envisions make no representations or warranties as to the results to be obtained in using any material. As Composite Envisions cannot foresee all conditions under which products will be used, user/buyer waives any claim against Composite Envisions for direct, indirect, consequential, or exemplary damages including without limitation, damage which may incur as a result of user/buyer's use or misuse of the product or the product's failure to perform to any expected performance level.

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