

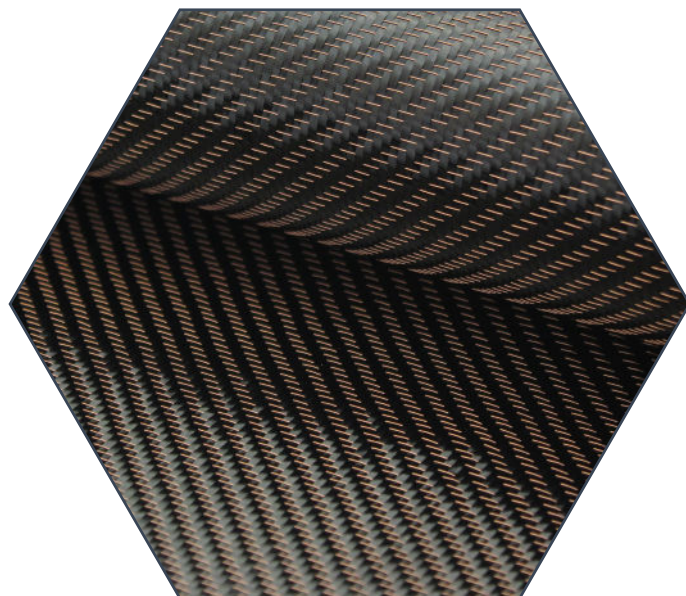


## COPPER MIRAGE CARBON FIBER FABRIC 2X2 TWILL 3K HIGH DENSITY MODEL #: F-1254-50

### HEXTOW® AS4 CARBON FIBER

HexTow® AS4 carbon fiber is a continuous, high strength, high strain, PAN based fiber available in 3,000 (3K), 6,000 (6K) and 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, and is suggested for use in weaving, prepregging, filament winding, braiding, and pultrusion.

AS4-GP 3k (1%), AS4-GP 12k (0.9%), and AS4 12k carbon fibers have 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.

YARN/TOW CHARACTERISTICS	U.S. UNITS	SI UNITS
Specific Heat	0.28 Btu/lb-°F	0.27 cal/g-°C
Electrical Resistivity	$5.6 \times 10^{-5}$ ohm-ft	$1.7 \times 10^{-3}$ 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



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TYPICAL FIBER PROPERTIES	U.S. UNITS	SI UNITS
Tensile Strength 3K 6K 12K	670 ksi 640 ksi 640 ksi	4,620 MPa 4,410 MPa 4,410 MPa
Tensile Modulus (Chord 6000-1000)	33.5 Msi	231 GPa
Ultimate Elongation at Failure 3K 6K 12K	1.8% 1.7% 1.7%	1.8% 1.7% 1.7%
Density	0.0647 lb/in <sup>3</sup>	1.79 g/cm <sup>3</sup>
Weight/Length 3K 6K 12K	11.8 x 10 <sup>-6</sup> lb/in 23.9 x 10 <sup>-6</sup> lb/in 48.0 x 10 <sup>-6</sup> lb/in	0.210 g/m 0.427 g/m 0.858 g/m
Approximate Yield 3K 6K 12K	7,086 ft/lb 3,485 ft/lb 1,734 ft/lb	4.76 m/g 2.34 m/g 1.17 m/g
Tow Cross-Sectional Area 3K 6K 12K	1.82 x 10 <sup>-4</sup> in <sup>2</sup> 3.70 x 10 <sup>-4</sup> in <sup>2</sup> 7.43 x 10 <sup>-4</sup> in <sup>2</sup>	0.12 mm <sup>2</sup> 0.24 mm <sup>2</sup> 0.48 mm <sup>2</sup>
Filament Diameter	0.280 mil	7.1 microns
Carbon Content	94.0%	94.0%
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	320 ksi	2,205 MPa	ASTM D3039
0° Tensile Modulus	20.5 Msi	141 GPa	
0° Tensile Strain	1.55%	1.55%	
0° Flexural Strength	274 ksi	1,889 MPa	ASTM D790
0° Flexural Modulus	18.4 Msi	27 GPa	
0° Short Beam Shear Strength	18.5 ksi	128 MPa	ASTM D2344
0° Compressive Strength	222 ksi	1,530 MPa	ASTM Mod. D695
0° Compressive Modulus	18.6 Msi	128 GPa	
0° Open Hole Tensile Strength	64 ksi	438 MPa	ASTM D5766
90° Tensile Strength	11.7 ksi	81 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 quaranteed 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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