



# HexTow® AS4D

## Carbon Fiber



### Product Data Sheet

HexTow® AS4D carbon fiber is a continuous, high strength, high strain, 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, and is suggested for use in prepregging, filament winding, braiding, and pultrusion.

Typical Fiber Properties	U.S. Units	SI Units
Tensile Strength	685 ksi	4729 MPa
Tensile Modulus (Chord 6000-1000)	35.0 Msi	241 GPa
Ultimate Elongation at Failure	1.8%	1.8%
Density	0.0647 lb/in <sup>3</sup>	1.79 g/cm <sup>3</sup>
Weight/Length (12K)	42.8 x 10 <sup>-6</sup> lb/in	0.765 g/m
Approximate Yield (12K)	1945 ft/lb	1.31 m/g
Tow Cross-Sectional Area (12K)	6.63 x 10 <sup>-4</sup> in <sup>2</sup>	0.43 mm <sup>2</sup>
Filament Diameter	0.265 mil	6.7 microns
Carbon Content	94.0%	94.0%
Twist	Never Twisted	Never Twisted

Typical HexPly 8552 Composite Properties (at Room Temperature)	U.S. Units	SI Units	Test Method
0° Tensile Strength	350 ksi	2,413 MPa	ASTM D3039
0° Tensile Modulus	19.6 Msi	135 GPa	
0° Tensile Strain	1.6%	1.6%	
0° Short Beam Shear Strength	18.7 ksi	129 MPa	ASTM D2344
0° Compressive Strength	232 ksi	1600 MPa	ASTM Mod. D695
Fiber Volume	60%	60%	
Open Hole Compressive Strength	51.1 ksi	352 MPa	ASTM D5766

**Carbon Fiber Certification**

This carbon fiber is manufactured to Hexcel aerospace grade specification HS-CP-4000. A copy of this specification is available upon request. A Certification of Analysis will be provided with each shipment of HS-CP-4000 fiber.

**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.

**Sizing**

Size	Compatibility	Recommended Uses
GP	Epoxy, Phenolic, Vinyl Ester, Polyurethane, Cyanate Ester, BMI	Weaving, Filament Winding, Prepreg Tape
Unsize	All Resins	Prepreg Tape

\*Compatibility with these Matrices is considered theoretically compatible. Hexcel cannot guarantee their results.

**Packaging**

Standard packaging of HexTow® AS4D is as follows:

Filament Count	Size	Nominal Weight		Nominal Length	
		(lb)	(kg)	(ft)	(m)
12K	GP (1.1%)	6.5	2.9	12,640	3,850
	Unsize	10.0	4.5	19,450	5,930

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 Safety Data Sheet (SDS) before use of this product.

**For more information**

Hexcel is a leading worldwide supplier of composite materials to aerospace and industrial markets. Our comprehensive range includes:

- HexTow® carbon fibers
- HexForce® reinforcements
- HiMax® multiaxial reinforcements
- HexPly® prepregs
- HexAM® additive manufacturing
- HexMC® molding compounds
- HiFlow® RTM resins
- HexBond® adhesives
- HexTool® tooling materials
- HexWeb® honeycomb
- Acousti-Cap® sound attenuating honeycomb
- Engineered core
- Engineered products
- Polyspeed® laminates & pultruded profiles

For U.S. quotes, orders and product information call toll-free 1-800-688-7734. For other worldwide sales office telephone numbers and a full address list, please go to:

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

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