

# Fiberforge Carbon/Nylon Unidirectional Blank

## Representative Material Data

<b>Material</b>	<b>Fiber</b> .....	<b>Carbon</b>
	<b>Matrix</b> .....	<b>PA6</b>
	<b>Laminate Orientation</b> .....	<b>[0]<sub>n</sub></b>

Property	Test Standard	Units	Quantity
Fiber Content by Weight .....	ASTM D 3171	%	65
Arial Weight .....		g/m <sup>2</sup>	360
Density .....	ASTM D 3173	g/cm <sup>3</sup>	1.5
Minimum Blank Thickness .....		mm	0.125

<b>Mechanical</b>				
Property	Test Standard	Units	Longitudinal	Transverse

### Tensile

Strength .....	ASTM D 3039	MPa	1,100	50
Modulus .....	ASTM D 3039	GPa	120	7.1
Elongation at Break .....	ASTM D 3039	%	0.92	0.68

### Flexural

Strength .....	ASTM D 790	MPa	1,700	84
Modulus .....	ASTM D 790	GPa	190	16

### Compressive

Strength (calculated) .....		MPa	1,000	110
Modulus (calculated) .....		GPa	87	5.4
Poisson's Ratio (calculated) .....		—	0.03	
Izod, notched .....	ASTM D 256	J/m	2,400	6.6

<b>Thermal</b>				
Property	Test Standard	Units	Longitudinal	Transverse

Heat Deflection Temperature @ 0.45 MPa .....	ASTM D 648	°C	226	208
Coefficient of Thermal Expansion .....	ASTM E 831	µm/m°C	-0.36	
Processing Temperature .....		°C	235±15	

This data sheet lists common material, mechanical, and thermal characteristics of only one possible anisotropic tailored blank. Blanks can be made:

- thicker by adding plies
- to a desired shape, including cut-outs, to reduce scrap on final forming
- with different and/or additional ply-angles to change the anisotropic nature of the material
- with variable thickness/number of lamina.

Materials available off-the shelf or by special order.

<b>Fiber:</b>	<b>Matrix:</b>
Carbon	PA
Glass	PBT
Aramid	PEKK
	PE
	PPS
	PEEK
	PET
	TPU
	PP
	Others

This representative data was tested, measured, or calculated using standard methods and is subject to change without notice; it should be used for informational purposes only. Fiberforge makes no warranties and assumes no liability in connection with the use of this information. This data is not intended to substitute for your own testing to determine suitability for your particular application. The data listed here should not be used to establish specification limits. Nothing in this publication is to be construed as a license to operate under or a recommendation to infringe upon any intellectual property right. Fiberforge's Relay™ Station and Tailored Blanks™ are protected by US patents #6,607,626; 6,939,423; 7,235,149, and patents pending.

## FIBERFORGE™

Fiberforge  
3768 Highway 82, Suite 204  
Glenwood Springs, Colorado  
81601 USA

phone 970.945.9377

fax 877.232.0292

fiberforge.com