

Fiberforge Carbon/PEEK Unidirectional Blank

CF/PEEK is a semi-crystalline polyetheretherketone thermoplastic composite unidirectional tape. It offers high service temperature, excellent toughness, and excellent resistance to chemicals and solvents.

Representative Material Data

Material	Fiber	AS-4 Carbon
	Matrix	Polyetheretherketone (PEEK)
	Laminate Orientation	[0]_n

Physical			
Property	Test Standard	Units	Result
Fiber Content by Weight	ASTM D 3171	%	67±3
Resin Content by Weight		%	33±3
Resin Content by Volume		%	41±3
Fiber Areal Weight		g/m ²	146
Void Content (with Fiberforge Process), RTA	ASTM D 2734	%	0.21
Ply thickness, RTA	SACMA RM10	mm	0.14
Density, RTA	ASTM D 792	g/cm ³	1.6
Moisture Content (ETW)	ASTM D 5529	%	0.16

Mechanical				
Property	Test Standard	Units	Condition Results	
			RTA	ETW
0° Tensile Strength	ASTM D 3039	GPa	2.37	2.34
0° Tensile Modulus	ASTM D 3039	GPa	141	138
0° Tensile - Poisson's	ASTM D 3039		.33	
90° Tensile Strength	ASTM D 3039	MPa	66	73
90° Tensile Modulus	ASTM D 3039	GPa	9.0	9.0
0° Compressive Strength	ASTM D 6641 ¹	GPa	1.1	1.0
0° Compressive Modulus	ASTM D 6641 ¹	GPa	72	72
In-plane Shear Strength	ASTM D 5379 ¹	MPa	87	67
In-plane Shear Modulus	ASTM D 5379 ¹	GPa	8.3	9.0
Interlaminar Shear Strength	ASTM D 5379	MPa	127	96
Short Beam Shear Strength	ASTM D 2344 ¹	MPa	91	-
Open Hole Compression	ASTM D 6484 ²	MPa	337	310
Open Hole Tension	ASTM D 5766 ²	MPa	400	-
Double Bearing Shear Strength	ASTM D 5961 ²	GPa	1.1	1.0

ETW is tested at 180°F/82°C after 14 day soaks in 160°F/71°C water.

¹ Laminate Orientation [0/90]_s

² Laminate Orientation [0/45/90/-45]_s

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.

Fiber:	Matrix:
Carbon	PA
Glass	PBT
Aramid	PEKK
	PE
	PPS
	PEEK
	PET
	TPU
	PP
	PEI
	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.



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