

Continuous Carbon Fiber / Nylon

CCF/PA

Continuous fiber-reinforced composite - material properties

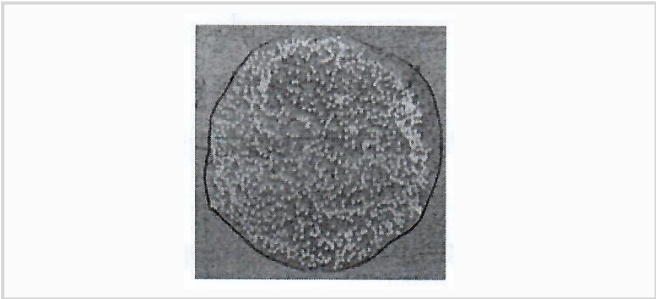
CFSYS Composites

CONTINUOUS FIBER REINFORCEMENT

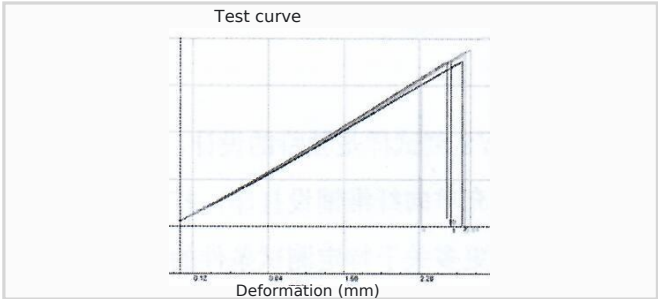
ASTM / 5 June 2025

1. Continuous Carbon Fiber Filament (CCF/PA) Specifications

Item	Value	Item	Value
Carbon fiber	1K	Printing temperature	250-270 °C
Resin	Nylon	Filament tensile strength	1300 MPa
Filament diameter	~0.4 mm	Fiber content by mass	>40 %



1K fiber filament microscopic cross-section, 1:100



Filament tensile performance

2. Mechanical Properties of Test Specimens

Property	ASTM standard	Continuous fiber (CCF)
Tensile strength	D3039	825 MPa
Flexural strength	D790	420 MPa
Compressive strength	D6641	250 MPa

3. Specimen Dimensions and Test Conditions

Type	Tensile	Flexural	Compressive
Dimensions (mm)	250 × 15 × 1	115 × 10 × 3	140 × 12.7 × 2
Test conditions	Printing temperature: 260 °C; layer height: 0.125 mm; infill: 100 %		

- The test specimens used for these data are reinforced with unidirectional fibers (0° plies).
- CFSYS test specimens are specially designed to maximize test performance. Continuous fiber specimens are printed with full unidirectional fiber infill and no walls.
- For more information about specific test conditions, or to request test parts for in-house testing, contact CFSYS. All customer parts should be tested to the customer’s specifications.
- Part and material properties vary with fiber layup design, part design, specific loading conditions, test conditions, manufacturing conditions and other factors.