

## Description

Reents Technologies PA6-CF is a carbon fiber reinforced PA6 (Nylon 6) filament designed for industrial applications that require high stiffness and strength. The carbon fiber reinforcement provides excellent mechanical properties, heat resistance, and impact resistance, making it suitable for manufacturing mechanically stressed industrial components, fixtures, clamps, automotive parts, and various structural engineering components.

## Identification

<b>Name</b>	PA6-CF
<b>Chemical Name</b>	Polyamide 6 with Carbon Fiber Reinforcement
<b>Usage</b>	Ideal for manufacturing mechanically stressed industrial components in dry environments.

## Advantages

- High stiffness and strength
- Exceptional heat resistance
- Good impact resistance
- Suitable for structural and engineering applications in dry environments

## Properties

### Mechanical properties

Test	Value	Unit	Methode
Density	1.09	g/cm <sup>3</sup>	ISO 1183
Young's Modulus (X-Y)	4430 ± 310	MPa	ISO 527, GB/T 1040
Young's Modulus (Z)	2170 ± 230	MPa	ISO 527, GB/T 1040
Tensile Strength (X-Y)	102 ± 7	MPa	ISO 527, GB/T 1040
Tensile Strength (Z)	48 ± 6	MPa	ISO 527, GB/T 1040
Breaking Elongation Rate (X-Y)	5.8 ± 1.6	%	ISO 527, GB/T 1040
Breaking Elongation Rate (Z)	3.7 ± 0.8	%	ISO 527, GB/T 1040
Bending Modulus (X-Y)	5460 ± 280	MPa	ISO 178, GB/T 9341
Bending Modulus (Z)	2240 ± 220	MPa	ISO 178, GB/T 9341
Bending Strength (X-Y)	151 ± 8	MPa	ISO 178, GB/T 9341
Bending Strength (Z)	80 ± 7	MPa	ISO 178, GB/T 9341
Impact Strength (X-Y)	40.3 ± 2.5 13.4 ± 1.7 (notched)	kJ/m <sup>2</sup>	ISO 179, GB/T 1043
Impact Strength (Z)	15.5 ± 1.7	kJ/m <sup>2</sup>	ISO 179, GB/T 1043

### Thermal Properties

Test	Value	Unit	Methode
Melting Temperature	223	°C	DSC, 10 °C/min
Glass Transition Temperature	68	°C	DSC, 10 °C/min
Crystallization Temperature	185	°C	DSC, 10 °C/min
Vicat Softening Temperature	212	°C	ISO 306, GB/T 1633
Heat Deflection Temperature	164 (1.8 MPa)	°C	ISO 75
Heat Deflection Temperature	186 (0.45MPa)	°C	ISO 75
Saturated Water Absorption Rate	2,35	%	25 °C, 55% RH

### Certificate

<b>REACH</b>	Yes
<b>RoHS</b>	Yes
<b>FDA</b>	No