

# TECHNICAL DATA SHEET

## ABS-CF5

5% Chopped carbon fiber reinforced ABS 3D Printing Material

### BRIEF INTRODUCTION

ABS-CF is a high-strength ABS-based 3D printing filament with outstanding mechanical properties. Due to the addition of chopped carbon fibers, the tensile strength of its 3D printed parts in the XY axis direction can be close to 40MPa. The carbon fiber has also improved its dimensional stability. ABS-CF is ideal for printing functional prototypes, jigs and low-volume production parts. The main raw material of ABS-CF is an ABS resin synthesized by continuous bulk polymerization technique. Thanks to this advanced production process, the residual amount of solvents and monomers used in the production process in the final ABS product is so low that the filament has a low odor during printing.

### CHARACTERISTIC

ABS-CF is an ABS-based filament specially developed for 3D printing and it is reinforced with 5% carbon fiber. Compared with other ABS filaments, it has a much lower odor and excellent dimensional stability

#### IDENTIFICATION OF THE MATERIAL

Trade name	ABS-CF5
Application	3D PRINTING

#### GUIDELINE FOR PRINT SETTINGS

Nozzle temperature	250-270° C
Bed Temperature	100-110°C
Bed material	Glass/PEI Film/PC Film
Active cooling fan	0-30%
Recommend nozzle size	≥0.2 mm
Raft distance	1-5mm
Print speed	30-120mm/s

MATERIAL PROPERTIES	Typical value	Test Method
Melt index	4g/10min	250°C 2.16kg
Glass-transition temperature	101°C	ISO11357
Vicat softening temperature	/	ISO306
Density	1.06g/cm <sup>3</sup>	ISO 1183
Tensile breaking strength(X-Y)	44.97 ± 0.46 MPa	ISO527
Young modulus(X-Y)	3450.24 ± 71.67 MPa	ISO527
Elongation at break 100% (X-Y)	2.22 ± 0.13 %	ISO527
Bending strength (X-Y)	75.54 ± 2.01 MPa	ISO178
Bending Modulus (X-Y)	3261.89 ± 49.08 MPa	ISO178
Charpy impact strength (X-Y)	7.35 ± 0.30 KJ/m <sup>2</sup>	ISO179

**Other Suggestions:**

1. Compared with PLA, PETG and other materials, ABS materials need a higher chamber temperature to help release the residual stress during the printing process. Please keep the printer chamber closed during the printing process. It can effectively avoid printed parts from warping and cracking. If the device has a heated chamber, it is recommended to set the temperature of heated chamber between 60-80°C.
2. If the ABS-CF filament has been unpacked for a long time and the printing quality starts to degrade during the printing process, please dry the filament at 70-80°C for 4-6 hours before printing.
3. Although ABS-CF5 has much less odor compared with similar products, it is still recommended to place the printer in a well-ventilated area during printing.

Settings are based on a 0.4mm nozzle.Nozzle temp.250°C,Bed temp.:100°C, Printing speed:50mm/s,filling rate:100%,filling angle:+/-45°

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