

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

IDENTFICATION OF THE MATERIAL

Trade name ABS-CF5

Application 3D PRINTING

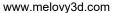
GUIDELINE FOR PRINT SETTINGS

Nozzle temperature $250-270^{\circ}$ CBed Temperature $100-110^{\circ}$ C

Bed material Glass/PEI Film/PC Film

Active cooling fan0-30%Recommend nozzle size≥0.2 mmRaft distance1-5mmPrint speed30-120mm/s

| MATERIAL PROPERTIES | Typical value | Test Method |
|--------------------------------|----------------------------------|--------------|
| Melt index | 4g/10min | 250°C 2.16kg |
| Glass-transition temperature | 101℃ | ISO11357 |
| Vicat softening temperature | / | ISO306 |
| Density | 1.06g/cm ³ | 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) | | |
| | $7.35 \pm 0.30 \; \text{KJ/m}^2$ | 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 $^{\circ}$ C,Bed temp.:100 $^{\circ}$ C, Printing speed:50mm/s,filling rate:100%,filling angle:+/-45 $^{\circ}$

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