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PET Carbon Fiber - Sample 50g / 17m / 1.75mm



Category: [3D Filaments](#)
Availability: **estimated delivery 27.01.2022**
Code: **740**

Price: 5,92 € ~~6,97 €~~

(the image is symbolic)

Technical specifications

Filament color: Black
Filament Diameter: 1.75 mm
Filament weight: 50g
Brand: AzureFilm

Short description

Made in EU, high quality Carbon, beautiful clear prints, no stringing, no warping, no clogging.

Compatible with majority of professional and industrial FDM 3D printers.

AzureFilm PET CF is the easiest to print carbon fiber filled PET material that you will be able to find on the market. Majority of the companies have grinded carbon fibers inside of the structure. Our PET CF has chopped carbon fiber reinforced structure thus making its impact toughness much stronger. This chopped carbon fiber composite is pushing existing efforts and limitations for research of an engineering-grade 3D printing filament to new frontiers. Filament has excellent mechanical properties with no warping, including extremely high z-layer strength and low water uptake. Our PET CF is filled with 15% of carbon fiber and has short term (max. 3hrs) maximum temperature up to 125°C. It can easily sustain at 100°C for 10hrs or more. Thickness of fibers inside it's ranging from 0.4mm-0.6mm that's why the nozzle diameter has to be 0.6mm.

Fiber reinforced composites offer exceptional mechanical properties. In addition to typical composite driving factors such as fiber orientation, fiber volume and way of stacking, scientist have found out that printing parameters such as infill density, nozzle speed, layer thickness, nozzle type, infill pattern, built orientation, bed temperatures have shown to influence mechanical properties.

Used for:

- Extremely smooth surface finish allows printability of functional prototypes
- Since it has exceptional mechanical properties it can be used for various fixtures, tooling, composite moulds for various manufacturing processes or self use
- In general its light weight, is key advantage for weight reduction, without losing performance-grade strength
- Compared to PLA, ABS, PETG or even other Carbon reinforced materials it can withstand significantly higher temperatures. Short term temp. (max. 3hrs) is enhanced up to 125°C
- High stiffness of the fibers themselves allow 3D printed parts to maintain their shape under high stress

Significant advantages of AzureFilm PET CF filament:

- Cost effective - since we are using chopped up carbon fibers there is significant reduction in production length, allowing us to make our material cost friendly for any customer
- Higher temperature resistance up to 125°C
- More dimensional stability - Chopped carbon fibers are extremely strong and not only give high strength and stiffness but also help prevent shrinking as the part is in the cooling down phase

Requirements to work with PET CF filaments:

- Heated print bed
- Hardened nozzle - Due to its abrasive structure, filament will wear down standard brass nozzle over a short period of time. Abrasion resistant nozzle is requirement for this type of filament. Since those type of nozzles tend to be less conductive than standard nozzles, usually higher extruder temperatures are recommended
- Heated filament chamber (optional) - Having the filament all the time in dry place, with working temp. ready is an optional thing to ensure consistently controlled environment for best product quality
- Closed environment (optional) - Ensuring consistent controlled environment is very important factor that allows better end class quality of the product although this filament has ability to be 3D printed on non-heated chamber machines

Printing Recommendations:

- Nozzle temperature: 245 - 270°C
 - Heated bed: recommended 80-90°C
 - Print speed: 40 -60 mm/s
 - Layer height: 0,2mm
 - Nozzle diameter: 0,6mm
 - Build platform: Blue tape, Kapton tape, glassbed + Dimafix spray
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