

TECHNICAL DATA SHEET



PET-G CF

The Smart Print PETG CF 3D printing filament has been developed through advanced composite material engineering to provide enhanced rigidity, dimensional stability, and professional surface quality.

Compared to standard PETG, it offers increased stiffness, reduced shrinkage, and improved structural strength thanks to carbon fiber reinforcement. The material also features a refined matte technical finish that minimizes visible layer lines and surface reflections, making it ideal for functional and engineering applications.

Smart Print PETG CF combines excellent mechanical durability, thermal stability, and reliable printability, ensuring consistent performance even in demanding printing environments.

Product features

Carbon Fiber Reinforcement

The addition of carbon fiber significantly improves rigidity, dimensional stability, and structural strength while reducing warping and material shrinkage during printing.

Superior Print Performance

Developed for precision and reliability, Smart Print PETG CF provides smooth extrusion and excellent layer adhesion, ensuring stable printing even in technically demanding and geometrically complex models. Its optimized formulation minimizes stringing and improves surface consistency.

Matte Technical Finish

Unlike standard glossy PETG, PETG CF features a professional matte finish that reduces reflections and visible layer lines, giving printed parts a clean engineering appearance.

Exceptional Strength and Stability

PETG CF combines high stiffness with strong impact resistance, making it suitable for functional prototypes, structural parts, brackets, housings, and mechanical applications requiring enhanced durability.

Thermal and Chemical Resistance

The material maintains dimensional stability under moderate thermal loads and offers strong resistance to chemicals such as acids, alkalis, alcohols, and oils, ensuring reliable long-term performance.

Professional Applications

Ideal for engineering prototypes, technical components, automotive parts, tools, drone elements, and industrial applications where strength, rigidity, and dimensional accuracy are essential.

Printing guidelines

Based on a 0.4 mm nozzle. Printing conditions may vary with different nozzle diameters.

Nozzle temperature 230 - 250°C	Build surface material PEI, textured PEI, glass	Build surface treatment glue / adhesive spray
Build plate 80 - 90°C	Cooling fan 0.3 - 0.5	Printing speed: 30 - 80 mm/s
Raft separation distance 0.2 mm	Retraction distance 4 - 6 mm	Retraction speed 20 - 35 mm/s

Drying guidelines

For optimal printing results, PETG CF filament should be dried before use, as the material absorbs moisture from the air.

Excessive humidity may cause: bubbling, rough surface finish, poor layer adhesion, unstable extrusion.

Recommended drying parameters: Temperature: 65–75°C, Time: 4–6 hours.

Use a filament dryer or a temperature-controlled oven. Once dried, use immediately or store in a tightly closed container with desiccant.

Available colors



Precautions

Printer Compatibility

Ensure that the printer supports carbon fiber reinforced materials and maintains stable extrusion. Hardware variations may affect final print quality.

Nozzle Wear

Carbon fiber reinforced materials are abrasive and may accelerate nozzle wear. Standard brass nozzles are not recommended for prolonged use.

Shrinkage Control

Maintain the print temperature between 240–260°C to ensure proper flow and adhesion.

Too low → poor extrusion and weak layer bonding.

Too high → degradation, bubbling, discoloration.

The build plate temperature should be maintained between 80–90°C to improve adhesion and dimensional stability.

Cooling Settings

Enable moderate cooling after the first 2–3 layers. Excessive cooling may reduce layer adhesion and increase internal stress, especially in functional parts and complex geometries.

Filament Storage

Store the filament in a cool, dry place, in a tightly closed container, with desiccant. Improper storage may lead to moisture absorption, causing print defects such as bubbling or uneven extrusion.

Disclaimer

The data provided in this document is for reference and comparison only and should not be used as a basis for design specifications or quality control.

Actual performance may vary depending on printing parameters, printer configuration, model geometry, and environmental conditions.

Users are responsible for verifying the suitability of the material for their intended application, including safety, compliance, and disposal.

Smart Print assumes no liability for damage, loss, or injury resulting from improper use of the material. Always follow the parameters provided on the product packaging.