

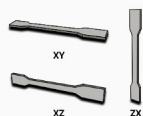
DESCRIPTION

PLA CF is a carbon-fiber-filled PLA. The carbon fibres make the material strong and lightweight while keeping the easy processing of PLA. Because it is abrasive, we recommend a hardened, abrasion-resistant nozzle.

KEY BENEFITS

- Carbon-fiber filled
- Strong & lightweight
- PLA-based
- Easy to print
- Hardened nozzle required

MECHANICAL PROPERTIES



BUILD ORIENTATION KEY

Each tensile bar was printed flat (XY), on its side (XZ) or upright (ZX). The columns below report each build orientation's measured values —ZX (across layers) is the weakest axis.

PROPERTY	STANDARD	XY	XZ	ZX	UNIT
Tensile strength	ISO 527-2	24.4	28.3	10.7	MPa
Yield strength	ISO 527-2	19.2	22.4	10.4	MPa
Tensile modulus	ISO 527-2	2500	3200	1600	MPa
Strain at yield	ISO 527-2	5.9	2.6	1.1	%
Flexural strength	ISO 178	54.1	64.1	23.0	MPa
Flexural modulus	ISO 178	4900	8100	2700	MPa

TEST SPECIMENS Printer Bambu Lab H2S Nozzle 0.4 mm Line width 0.42 mm Layer height 0.15 mm First layer 0.28 mm
Walls 2 Top / bottom layers 5 / 3 Infill 100% rectilinear Nozzle temp. 220 °C Bed temp. 45 °C Print speed 50 mm/s

PRINTING RECOMMENDATIONS

Printing temp.	220 °C	Bed temp.	45 °C
Chamber temp.	35 °C	Recommended speed	≤180 mm/s
Max printing speed	≤330 mm/s	Retraction	0.8 mm

HANDLING, STORAGE & THERMAL

Max flow rate	25 mm ³ /s	Max-flow test printer	Bambu Lab H2S
Heat deflection temp.	50 °C	Vicat softening temp.	64 °C
Glass transition temp.	60 °C	Drying temp.	50 °C
Drying time	6 h	Enclosed printer	Not recommended
Multi-material compatibility	Not recommended		

TIPS & TRICKS

- **Use a hardened steel nozzle**
A 0.4 mm hardened steel nozzle is printable, but clog risk is high. Use a 0.6 mm hardened steel nozzle for safer printing.
- **Print in a well-ventilated area**
Use ventilation for filled materials and long prints.
- **Not recommended for AMS/CFS-type systems**
Abrasive and filled filaments are risky in long multi-material paths.
- **Watch nozzle wear**
Carbon fiber fill is abrasive; inspect nozzle wear when print quality changes.
- **Dry thoroughly before printing**
Dry at 50 °C for 6 h and store sealed.
- **Recommended print speed**
Use ≤ 180 mm/s for normal PLA-CF quality printing. Max Printing Speed is the measured ceiling.

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