

3D PRINTING MATERIAL DATA SHEETS



3D PRINTING MATERIALS

This document is intended to help you choose a suitable material for your 3D printing project.

Parts can be ordered using our 3D printing quote form here: <https://forms.gle/Jxm2SXaFVmR1NBjCA>

Disclaimer: The data referenced in this document and on our website is not the property of AX3D. All data has been obtained from Bambu Lab and 3DXTech. All data referenced has been obtained using the following data sheets:

3DXTech technical data sheet:

https://www.3dxtech.com/wp-content/uploads/2021/03/FR_ABS-TDS-v03.pdf

3DXTech safety data sheet:

https://www.3dxtech.com/wp-content/uploads/2022/08/FR_ABS_SDS_v1.1.pdf

3DXTech FireWire ABS-FR UL94 Yellow card:

https://f8944b06-7e8a-462f-9a2b-f6ba1c461137.usrfiles.com/ugd/f8944b_a93cea83884345a182dd0f7c2e1c6fc8.pdf

Bambu Lab data sheet:

<https://cdn1.bambulab.com/filament/filament-guide/ng1z8qro2l9/filament-guide-en.pdf>

PLA

(POLYLACTIC ACID)

PLA is the most common and economical 3D printing material. It boasts high stiffness and strength. At just £21/kg it is perfect for prototyping and non-mechanical parts.

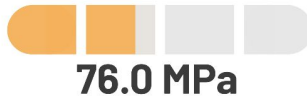
Toughness
Impact strenght XY



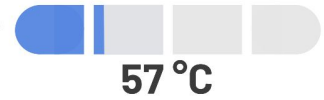
Layer adhesion
Impact strength Z



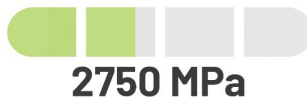
Strength
Bending strenght XY



Heat resistance
HDT, 0.45 MPa



Stiffness
Bending modulus XY



Material cost
(£/kg)



Available colours



PETG

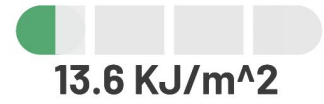
(POLYETHYLENE TEREPHTHALATE GLYCOL)

PETG is known for its high impact, water resistance and high flexibility. Ideal for tools, bottles and outdoor parts that require long-term exposure to the elements.

Toughness
Impact strenght XY



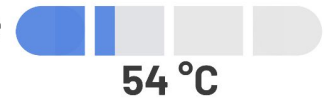
Layer adhesion
Impact strength Z



Strength
Bending strenght XY



Heat resistance
HDT, 0.45 MPa



Stiffness
Bending modulus XY



Material cost
(£/kg)



Available colours

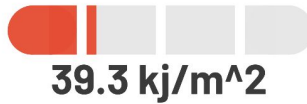


ABS

(ACRYLONITRILE STYRENE ACRYLATE)

ABS is a dependable, exceeding in stability, durability and high impact resistance. This material also boasts excellent heat resistance. Perfect for any project.

Toughness
Impact strenght XY



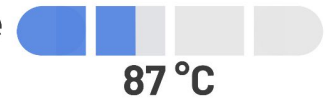
Layer adhesion
Impact strength Z



Strength
Bending strenght XY



Heat resistance
HDT, 0.45 MPa



Stiffness
Bending modulus XY



Material cost
(£/kg)



Available colours

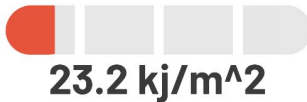


PLA-CF

(POLYLACTIC ACID, CARBON FIBER)

PLA-CF is carbon fiber reinforced PLA for improved stiffness and strength. Prints have a consistent matte finish suitable for engineering parts requiring a better finish.

Toughness
Impact strenght XY



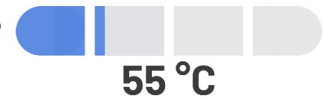
Layer adhesion
Impact strength Z



Strength
Bending strenght XY



Heat resistance
HDT, 0.45 MPa



Stiffness
Bending modulus XY



Material cost
(£/kg)



Available colours



PETG-CF

(POLYETHYLENE TEREPHTHALATE GLYCOL
CARBON FIBER)

PETG-CF is a composite material consisting of PETG and carbon fiber improving strength and toughness. PETG-CF is ideal for drone parts, racing models or any mechanical parts

Toughness
Impact strength XY



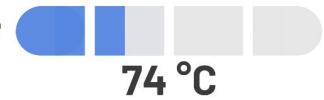
Layer adhesion
Impact strength Z



Strength
Bending strength XY



Heat resistance
HDT, 0.45 MPa



Stiffness
Bending modulus XY



Material cost
(£/kg)



Available colours



TPU-95A

(THERMOPLASTIC POLYURETHANE, 95A)

TPU is a flexible and durable material with exceptional inter-layer adhesion, impact resistance and low temperature resiliacnce. Ideal for any flexible, impact resistant parts.

Toughness
Impact strenght XY



Layer adhesion
Impact strength Z



Strength
Bending strenght XY



Heat resistance
HDT, 0.45 MPa



Stiffness
Bending modulus XY



Material cost
(£/kg)



Available colours



PA6-GF

(POLYAMIDE 6, GLASS FIBER)

PA6-GF is a Nylon variant, reinforced with glass fibres for high strength, durability and dimensional stability. PA6-GF is a cost effective alternate to top tier engineering materials.

Toughness
Impact strenght XY



Layer adhesion
Impact strength Z



Strength
Bending strenght XY



Heat resistance
HDT, 0.45 MPa



Stiffness
Bending modulus XY



Material cost
(£/kg)



Available colours



ASA

(ACRYLONITRILE STYRENE ACRYLATE)

ASA is a highly durable material that offers high UV, weather, mechanical and thermal resistance. This makes it ideal for outdoor applications that require long-term exposure.

Toughness
Impact strenght XY



Layer adhesion
Impact strength Z



Strength
Bending strenght XY



Heat resistance
HDT, 0.45 MPa



Stiffness
Bending modulus XY



Material cost
(£/kg)



Available colours

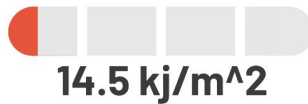


ABS-GF

(ACRYLONITRILE BUTADIENE STYRENE, GLASS FIBRE)

ABS-GF is a variant of ABS, reinforced with glass fibres for improved mechanical and aesthetic properties. ABS-GF has a smooth, matte finish ideal for any user parts.

Toughness
Impact strenght XY



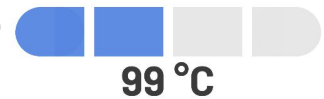
Layer adhesion
Impact strength Z



Strength
Bending strenght XY



Heat resistance
HDT, 0.45 MPa



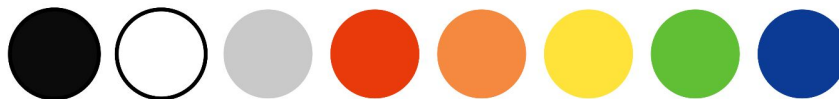
Stiffness
Bending modulus XY



Material cost
(£/kg)



Available colours



ABS-FR

(ACRYLONITRILE STYRENE ACRYLATE, UL94 V0.0)

ABS-FR is a UL94 V0.0 certified, fire retardent ABS allowing for the printing of functional, production parts. Ideal for elctrical cases, connectors or high temperature applications

Toughness
Impact strenght XY



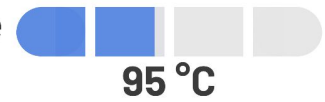
Layer adhesion
Impact strenght Z



Strength
Bending strenght XY



Heat resistance
HDT, 0.45 MPa



Stiffness
Bending modulus XY



Material cost
(£/kg)



Available colours



Technical data sheet:

https://www.3dxtech.com/wp-content/uploads/2021/03/FR_ABS-TDS-v03.pdf

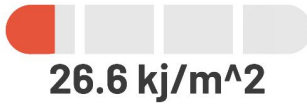
Safety data sheet: https://www.3dxtech.com/wp-content/uploads/2022/08/FR_ABS_SDS_v1.1.pdf

PLA-AERO

(POLYLACTIC ACID, LIGHTWEIGHT)

PLA-AERO is a low density, light weight foaming PLA. Perfect for UAVs and model aircraft.

Toughness
Impact strenght XY



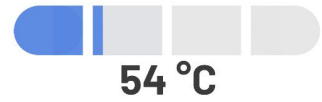
Layer adhesion
Impact strength Z



Strength
Bending strenght XY



Heat resistance
HDT, 0.45 MPa



Stiffness
Bending modulus XY



Material cost
(£/kg)



Available colours



PC

(POLYCARBONATE)

PC is an engineering-grade material that exceeds in high temperature resistance and durability. It is ideal for any project that needs a robust and resilient part.

Toughness
Impact strenght XY



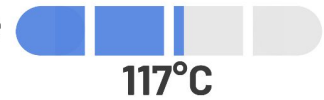
Layer adhesion
Impact strength Z



Strength
Bending strenght XY



Heat resistance
HDT, 0.45 MPa



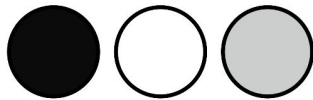
Stiffness
Bending modulus XY



Material cost
(£/kg)



Available colours



PET-CF

(POLYETHYLENE TEREPHTHALATE, CARBON FIBER)

PET-CF is a variant of the popular PETG-CF with improved hardness and mechanical strength. Due to the carbon fiber, PET-CF has excellent thermal and moisture stability.

Toughness
Impact strenght XY



Layer adhesion
Impact strength Z



Strength
Bending strenght XY



Heat resistance
HDT, 0.45 MPa



Stiffness
Bending modulus XY



Material cost
(£/kg)



Available colours



PAHT-CF

(POLYAMIDE HIGH-TEMPERATURE, CARBON FIBER)

PAHT-CF is a composite of PA12. It has low water absorption, thermal resistance and high stiffness. PAHT-CF is perfect for for prototypes, fixtures, injection molds and molds.

Toughness
Impact strenght XY



Layer adhesion
Impact strength Z



Strength
Bending strenght XY



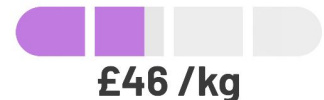
Heat resistance
HDT, 0.45 MPa



Stiffness
Bending modulus XY



Material cost
(£/kg)



Available colours

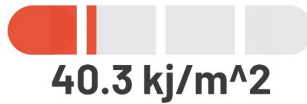


PA6-CF

(POLYAMIDE 6, CARBON FIBER)

PA6-GF is a Nylon variant, reinforced with carbon fibre for high stiffness, strength and impact resistance. This makes the material perfect for automotive or mechanical parts

Toughness
Impact strenght XY



Layer adhesion
Impact strength Z



Strength
Bending strenght XY



Heat resistance
HDT, 0.45 MPa



Stiffness
Bending modulus XY



Material cost
(£/kg)



Available colours

