

HP 3D Filament PC

HP Industrial Filament (IF) 3D Printer 600 High Temperature (HT) Solution



Material overview

HP 3D Filament PC is an engineered polycarbonate (PC) filament combining strength, toughness, and heat resistance for the HP Industrial Filament (IF) 3D Printer 600 HT Solution. It is suited for a wide range of engineering applications where dimensional stability and mechanical performance are required.

An enclosed printer with heated chamber is required – particularly for large or dense parts – to minimize warping and delamination. Post-print annealing at 90°C for 2 h is recommended to release residual internal stress.

Typical use cases

Suited for:

- Functional prototypes and end-use parts requiring structural integrity
- Electronic housings and enclosures
- Automotive interior components
- Industrial tooling and fixtures
- Parts requiring moderate thermal resistance

Physical properties

	Testing method	Typical value
Density	ISO1183, GB/T1033	1.03 g/cm ³ at 23 °C
Melt index	260 °C, 2.16 kg	9.9 g/10min
Flame retardancy	UL 94, 1.5mm	HB
Surface resistivity	ANSI ESD S11.11	OL, >1012 Ω

Thermal properties

	Testing method	Typical value
Glass transition temperature	DSC, 10 °C/min	113 °C
Decomposition temperature	TGA, 20 °C/min	>360 °C
Vicat softening temperature	ISO 306, GB/T 1633	116.9 °C
Heat deflection temperature	ISO 75 1.8MPa	99.3 °C
Heat deflection temperature	ISO 75 0.45MPa	114.1 °C

Mechanical properties

	Testing method	Typical value
Young's modulus (X-Y)	ISO 527, GB/T 1040	2435 ± 63 MPa
Young's modulus (Z)	ISO 527, GB/T 1040	2149 ± 119 MPa
Tensile strength (X-Y)	ISO 527, GB/T 1040	53.44 ± 0.60 MPa
Tensile strength (Z)	ISO 527, GB/T 1040	41.43 ± 1.50 MPa
Elongation at break (X-Y)	ISO 527, GB/T 1040	4.53 ± 0.45 %
Elongation at break (Z)	ISO 527, GB/T 1040	2.7 ± 0.21 %
Bending modulus (X-Y)	ISO 178, GB/T 9341	2050 ± 79 MPa
Bending modulus (Z)	ISO 178, GB/T 9341	N/A
Bending strength (X-Y)	ISO 178, GB/T 9341	81.29 ± 1.53 MPa
Bending strength (Z)	ISO 178, GB/T 9341	N/A
Charpy impact strength (X-Y)	ISO 179, GB/T 1043	21.28 ± 1.69 kJ/m ²
Charpy impact strength (Z)	ISO 179, GB/T 1043	N/A

Recommended printing conditions

Nozzle temperature	250-270 °C
Build surface material	BuildTak®, Glass, PEI
Build plate temperature	90 - 105 °C
Printing speed	30-50 mm/s
Raft separation distance	0.2 mm
Retraction distance	1 mm
Retraction speed	20 mm/s
Environmental temperature	70-100 °C (recommended)
Threshold overhang angle	50°

Material specifications

Product name	Weight supply	Diameter filament
HP 3D Filament PC Black	1 kg	1.75 mm
HP 3D Filament PC White	1 kg	1.75 mm

Process compatibility

Support material compatibility	HP 3D Filament SM10 White
Compatible printer modules	HP IF 3D Printer 360 Module

Safety Data Sheet (SDS)*

A general Safety Data Sheet covering HP 3D printing materials is available here: hp3dfilaments.com/safetydatasheets

This document provides guidance on safe handling, storage, and disposal. For material-specific questions, please contact your HP AM representative.

1. Typical values provided by Filament Provider. These results have not been validated on the HP Industrial Filament (IF) 3D Printer 600 HT Solution. Values are indicative; actual results may vary depending on print profile and process conditions. Contact HP to develop customized print profiles optimized for your application.