HI-TEMP

Bio-polymer blend, BigRep HI-TEMP

Printer **BigRep ONE · BigRep VIIO**

Process **Large-format FDM**

Filament **Ø 2.85 mm**

OVERVIEW

HI-TEMP is a stiff bio-polymer blend for large, rigid and dimensionally accurate parts. It warps very little, which makes it a good fit for big flat or boxy parts that need to hold their shape.

Parts have an attractive matte surface straight off the printer. Its Vicat softening point is high at 154 °C, but its heat deflection under load is about 54 °C, so it suits rigid parts more than hot, loaded ones.

KEY BENEFITS

- High stiffness (4,400 MPa tensile modulus)
- Minimal warping for accurate large parts
- Attractive matte surface as printed
- Vicat softening point of 154 °C (309 °F)

MECHANICAL & THERMAL PROPERTIES

Property	Test method	Typical value
TENSILE & FLEXURAL		
Tensile strength	ISO 527	50 MPa 7,250 psi
Tensile modulus	ISO 527	4,400 MPa 638 ksi
Flexural strength	ISO 178	55 MPa 7,980 psi
Flexural modulus	ISO 178	4,300 MPa 624 ksi
IMPACT		
Charpy impact, notched	ISO 179	4 kJ/m²
THERMAL		
Heat deflection temp., 1.8 MPa (HDT A)	ISO 75	54 °C 129 °F
Heat deflection temp., 0.45 MPa (HDT B)	ISO 75	58 °C 136 °F
Vicat softening temp.	ISO 306	154 °C 309 °F
Melting temp. (Tm)	DSC	170 °C 338 °F

Printed parts are directional. BigRep does not state how its test specimens were made or oriented. On large-format FDM parts, strength across layers (Z) is noticeably lower than along them (XY). The values above are typical values, not guaranteed minimums. Design with margin and orient load paths in XY where you can.

GENERAL FILAMENT PROPERTIES

Material	Density	FDA compliant
Bio-polymer blend	**1.35 g/cm³**	**Yes***
Filament base	ISO 1183	Raw filament, per BigRep

DIMENSIONAL TOLERANCES

Direction	First inch (25 mm)	Each additional inch (25 mm)
XY (horizontal)	± 0.020 in · ± 0.51 mm	+ 0.003 in · + 0.08 mm
Z (vertical)	± 0.030 in · ± 0.76 mm	+ 0.003 in · + 0.08 mm

Typical IA3D tolerances for large-format FDM across our BigRep printers. Holes and bores print slightly undersize; drill or ream features that need a fit. Flatness and warp on large, thin or flat sections depend on geometry. For critical fits or tighter requirements, **talk to an engineer**.

TYPICAL APPLICATIONS

- Large rigid prototypes and design models
- Jigs, fixtures and check gauges
- Architectural and presentation models
- Display, exhibit and retail parts
- Housings and covers that need to stay flat

GOOD TO KNOW

- **Compliance:** REACH compliant, RoHS certified; *FDA compliant except silver color
- **Brittle under impact** (4 kJ/m² notched). For tough parts, see ASA
- **As printed:** matte surface with visible layer lines

TEST CONDITIONS & SOURCE

Source: BigRep HI-TEMP filament data sheet (bigrep.com/filaments/hi-temp, last updated 30.07.2025). Values are BigRep typical values tested to the ISO methods shown. BigRep does not state specimen preparation, orientation or print settings. Unit conversions and tolerances are by IA3D.

Disclaimer: Material properties are provided as a general reference to help with material selection. Actual part properties depend on geometry, orientation, wall thickness, build position, print settings and service conditions, and may differ from the values shown. This sheet does not guarantee specific properties or suitability for a particular application. Validate critical parts under real operating conditions.

Ready to make parts in HI-TEMP?

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Upload CAD files for pricing and lead time right away.
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