# PRO HT

Bio-polymer blend, BigRep PRO HT

Printer **BigRep ONE · BigRep VIIO**

Process **Large-format FDM**

Filament **Ø 2.85 mm**

## OVERVIEW

PRO HT is an easy-to-print bio-polymer blend that produces consistently clean, attractive large parts. It is one of the most popular large-format filaments for good reason.

It is stiff, with about twice the notched impact strength of PLX and HI-TEMP, and a Vicat softening point of 116 °C. Heat deflection under load is about 55 °C.

## KEY BENEFITS

- Consistent, attractive surfaces on big builds
- Better impact strength than other PLA-based grades
- Good stiffness (3,100 MPa tensile modulus)
- Vicat softening point of 116 °C (241 °F)

## MECHANICAL & THERMAL PROPERTIES

| Property | Test method | Typical value |
|---|---|---|
| **TENSILE & FLEXURAL** | | |
| Tensile strength | ISO 527 | 45 MPa 6,530 psi |
| Tensile modulus | ISO 527 | 3,100 MPa 450 ksi |
| Flexural strength | ISO 178 | 60 MPa 8,700 psi |
| Flexural modulus | ISO 178 | 3,000 MPa 435 ksi |
| **IMPACT** | | |
| Charpy impact, notched | ISO 179 | 8 kJ/m² |
| **THERMAL** | | |
| Heat deflection temp., 1.8 MPa (HDT A) | ISO 75 | 55 °C 131 °F |
| Heat deflection temp., 0.45 MPa (HDT B) | ISO 75 | 61 °C 142 °F |
| Vicat softening temp. | ISO 306 | 116 °C 241 °F |
| Glass transition temp. (Tg) | DSC | 60 °C 140 °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** | **1.30 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 prototypes and design models
- Jigs, fixtures and shop aids
- Display, exhibit and retail parts
- Architectural and presentation models
- Form-and-fit test parts

## GOOD TO KNOW

- **Compliance:** REACH compliant, RoHS certified; *FDA compliant except silver color
- **Heat under load:** HDT is about 55 °C. For hot environments, see ASA
- **As printed:** layer lines are visible on large-format parts

## TEST CONDITIONS & SOURCE

**Source:** BigRep PRO HT filament data sheet (bigrep.com/filaments/pro-ht, 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.

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