

Bio-Based Polyethylene Filament

SKU: FL600PE-BIO

Xtellar Bio-Based PE filament is a bio-based high-density polyethylene (HDPE) filament, derived from raw sugar cane, providing a more sustainable alternative to traditional materials available on the market. This eco-friendly formulation, delivers a unique combination of sustainability, high elongation, light weighting, and moisture resistance for Bowden and direct drive 3D printing systems. This bio-based PE expands the availability of sustainable materials for use in 3D printing applications such as; consumer, packaging, and industrial markets.

Recommended Print Settings

Parameter	Units	Range
Extruder Temperature	°C	220 - 250
*Recommended Bed Temperature (first layer)/ Substrate	°C / Type	20-40 (90) / Magigoo PPGF adhesion solution stick
**Alternate Bed Temperature (first layer)/ Substrate	°C / Type	20 - 40 (90) / Multi-purpose polyolefin adhesive
Printing Speed	mm/s	20 - 60
Fan Speed	%	50 - 100
Extrusion Multiplier	–	0.90 - 1.10
Overlap Percentage	%	20 - 40
Brim	Layers	≥ 10
Raft Air Gap	mm	0.1

Printed Part Properties

Parameter	Method	Units	Value
Density	ASTM D 792	g/cm ³	0.95
Hardness	ASTM D 2240	Shore D	60
Tensile Strength at Break*	ASTM D 638	MPa	12
Tensile Elongation at Break*	ASTM D 638	%	574
Young's Modulus*	ASTM D 638	MPa	717
Flexural Modulus – Chord Modulus	ASTM D790	MPa	440
Vicat Softening Temperature (at 10 N)	ASTM D 648	°C	110.5
Deflection Temperature (at 0.455 MPa)	ASTM D 1525	°C	56

Notes

1. Recommended process conditions and printed part properties may be changed at any moment without previous communication from Xtellar.
2. Printed part properties obtained using test specimens printed in X-Y direction under the following conditions: printing temperature 230°C, bed temperature 20°C (90°C first layer) , print speed 20 mm/s, 100% of lines infill, 0 perimeter layers, 0.15 mm layer height, 0.4 mm brass nozzle.
3. Traditional bed adhesive solutions used for PLA & ABS (such as blue tape or hair spray) will not properly adhere PP, PE, or EVA to the build plate.
4. This resin does not contain the substance Bisphenol A (BPA, CAS: 80-05-7) in its composition.
5. For information on about safety, handling, individual protection, first aids and waste disposal, please see SDS. In case of questions regarding utilization or regulatory information, please contact our technical assistance area.