

# Carbon Fiber Recycled PE Filament

SKU: FL605R-CF

Xtellar carbon Fiber recycled PE filament is an engineering-grade filament containing 90% recycled content sourced primarily from recycled bottle caps. This grade also contains recycled carbon fiber for added strength and durability. This environmentally friendly filament retains the water, chemical, and impact resistance as well as the lower density inherent to polyethylene and polypropylene-based materials.

## Recommended Print Settings

Parameter	Units	Range
Extruder Temperature	°C	220 - 240
*Recommended Bed Temperature / Substrate	°C / Type	60 / PP-GF bed adhesion solution stick (water soluble)
*Initial Bed Temperature / Substrate	°C / Type	110 / PP-GF bed adhesion solution stick (water soluble)
Printing Speed (First Layer)	mm/s	30 - 65 (50% speed)
Fan Speed	%	50 - 100
Extrusion Multiplier	–	0.90 – 1.10
Overlap Percentage	%	20 – 40
**Brim	Layers	≥ 5
Raft Air Gap	mm	0.1

## Printed Part Properties

Parameter	Method	Units	Value
Density	D 792	g/cm <sup>3</sup>	0.95
Hardness	D 2240	Shore D	64
Ultimate Tensile Strength <sup>a</sup>	D 638	MPa	25.0
Tensile Elongation at Break <sup>a</sup>	D 638	%	1.2
Youngs Modulus <sup>a</sup>	D 638	MPa	3900
Flexural Modulus – Chord Modulus <sup>a</sup>	D 790	MPa	2700
Charpy Impact Strength at 23°C <sup>a</sup>	ISO 179	kJ/m <sup>2</sup>	10.4
Drop Impact Puncture Energy at 23°C	D 3763	J	5.9
Drop Impact Puncture Energy at 0°C	D 3763	J	5.9
Drop Impact Puncture Energy at -20°C	D 3763	J	5.5
Deflection Temperature (at 0.455 MPa)	D 648	°C	122
Vicat Softening Temperature (at 10 N)	D 1525	°C	124

## 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.

Xtellar does not guarantee printed part conditions, these represent estimated values based on internal test methods. Properties may vary based on print conditions.