# Carbon Fiber Polypropylene Filament

SKU: FL900PP-CF

Xtellar Carbon Fiber PP Filament is an engineering-grade composite made from 100% recycled carbon fiber (CF) and is designed to provide robust mechanical performance while maintaining a high degree of printability for complex structures. This fiber reinforced filament provides engineering level performance without compromising any of PP's inherent properties which include light weight, water resistance (no drying needed), chemical resistance, and impact resistance.

## Recommended Print Settings

| Parameter | Units | Range |
|---|---|---|
| Extruder Temperature | ℃ | 240 - 260 |
| Nozzle Size (Material) | mm | ≥0.6 (Hardened Nozzle) |
| Recommended Bed Temperature / Substrate [a] | ℃ / Type | 80 / PP bed adhesion solution stick (water soluble) |
| Alternate Bed Temperature / Substrate [b] | ℃ / Type | 20-40 / Multi-purpose adhesive spray |
| Printing Speed (First Layer) | mm/s | 35 - 65 (60% speed) |
| Fan Speed | % | 50 - 100 |
| Extrusion Multiplier | – | 0.90 – 1.10 |
| Overlap Percentage | % | 20 – 40 |
| Brim | Layers | 0 - 5 |
| Support/Raft Air Gap | mm | 0.2 or single layer thickness |

## Printed Part Properties

| Parameter | | Method | Units | Value |
|---|---|---|---|---|
| Density | | D 792 | g/cm$^3$ | 0.91 |
| Hardness | | D 2240 | Shore D | 63 |
| Ultimate Tensile Strength* | | D 638 | MPa | 41 |
| Tensile Elongation at Break* | | D 638 | % | 1.3 |
| Young's Modulus * | | D 638 | MPa | 6380 |
| Flexural Modulus – Chord Modulus * | | D 790 | MPa | 4512 |
| Charpy Impact Strength at 23℃ * | | ISO 179 | kJ/m$^2$ | 11.6 |
| Drop Impact Puncture Energy at 2.73 m/s, 3 mm | 23℃ | D 3763 | J | 5.2 |
| | 0℃, | D 3763 | J | 6.2 |
| | -20℃ | D 3763 | J | 5.4 |
| Deflection Temperature at 0.455 MPa, 12.7mm | | D 648 | ℃ | 158 |
| Vicat Softening Temperature at 10 N | | D 1525 | ℃ | 150 |

## 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.