

Technical Data Sheet

PPGF 30 by Innofil3D BV

Filament suitable for all commercially available leading brands 3D FDM/FFF printers

IDENTIFICATION OF THE MATERIAL

Trade name	Innofil3D PPGF 30
Chemical name	Glass Fiber Reinforced Polypropylene
Chemical family	Thermoplastic copolymer
Use	3D-Printing
Origin	Innofil3D BV

GUIDELINE FOR PRINT SETTINGS

Nozzle temperature	240 ± 10 °C
Bed temperature	30 ± 10 °C
Bed modification	Fiber reinforced PP strapping tape (e.g. Scotch Extreme)
Active cooling fan	50%
Layer height	≥ 0.2
Shell thickness	1.2mm
Print speed	30 – 80 mm/s

Additional information Hardened or Ruby nozzle, diameter ≥ 0.6 recommended

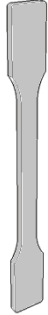

Settings are based on a 0.6 mm nozzle

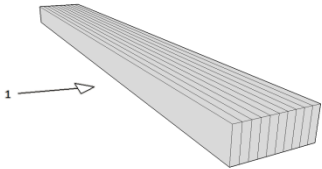
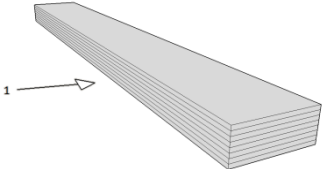
MATERIAL PROPERTIES

		Test Method
Melt temperature	~ 167 °C	ASTM D3418
Glass transition temperature	N/A	ASTM D3418
Melt Flow Rate ¹	N/A	ISO 1133
Melt Volume Rate ¹	N/A	ISO 1133
Density	0.94 g/cm ³	ASTM D1505
Odor	Odorless	/
Water solubility	Insoluble	/

¹Test conditions: T = 210 °C ; m = 2.16 kg



MECHANICAL PROPERTIES TENSILE TEST		Test Method	ISO 527	
<p>All test specimens were printed using a printer with a 0.6 mm nozzle under the following conditions: printing temperature: 240°C heated bed temperature: 30°C print speed: 40 mm/s number of shells: 2 Infill under 45°</p>				
	Printed vertical (Z-axis)	Printed horizontal (X,Y-axis)		
	Infill	100%	100%	
	Tensile strength (MPa)	14.6	35.8	
	Force at break (MPa)	14.4	33.0	
	Elongation at max force (%)	0.9	3.9	
	Elongation at break (%)	0.9	4.4	
Emodulus (MPa)	1980	3000		

MECHANICAL PROPERTIES IMPACT TEST		Test Method	ISO 179	
<p>All test specimens were printed using a printer with a 0.6 mm nozzle under the following conditions: printing temperature: 240°C heated bed temperature: 30°C print speed: 40 mm/s number of shells: 2 Infill under 45° 1 →: impact direction</p>				
	Charpy (en)	Charpy (ep)		
	Infill	100%	100%	
	Impact strength (kJ/m ²)	23.2	19.8	
	Impact energy (mJ)	983.3	811.2	



MECHANICAL PROPERTIES FLEXURAL TEST		Test Method	ISO 178
All test specimens were printed using a printer with a 0.6 mm nozzle under the following conditions: printing temperature: 240°C heated bed temperature: 30°C print speed: 40 mm/s number of shells: 2 Infill under 45° 1 →: bending direction		Normal	
	Infill	100%	100%
	Flexural modulus (MPa)	2450	4130
	Maximum force (MPa)	62.5	89.2
	Deformation (%)	5.5	3.9

FILAMENT SPECIFICATIONS		Test Method
Diameter 1.75	1.75 ± 0.05 mm	Innofil3D
Diameter 2.85	2.85 ± 0.10 mm	Innofil3D
Max. roundness deviation 1.75	0.05 mm	Innofil3D
Max. roundness deviation 2.85	0.10 mm	Innofil3D
Net weight on reel	750 g ± 2%	Innofil3D

LIST OF COLORS AND CERTIFICATIONS*						
Colour	Code	RAL nr.	Certifications/approvals			
			10/2011 ¹	FDA ²	2011/65 ³	EN 71-3 ⁴
Black	4450	N/A	-	-	-	-

* This overview is generated using information obtained from the raw material suppliers.

Certifications/approvals	Description
¹ Regulation EU No 10/2011:	Union Guidelines on Regulation (EU) No 10/2011 on plastic materials and articles intended to come into contact with food (Europe)
² FDA:	Food and Drug administration approval (U.S.A.)
³ Directive 2011/65/EU:	The restriction of the use of certain hazardous substances in electrical and electronic equipment (Europe)
⁴ Directive 2009/48/EC; EN 71-3:	Safety of toys – Part 3: Migration of certain elements (Europe)