

Technical Data Sheet

BFI3D Premium PLA

Filament Specification

| | |
|----------------------------|----------------|
| Diameter 1.75 | 1.75 ± 0.05 mm |
| “Verify your spool” option | YES |

Material properties

| | | |
|------------------------------|------------------------------------|------------|
| Melt Flow Rate ¹ | 6 g/10 min | ASTM D1238 |
| Melt temperature | 150-180°C | - |
| Density | 1.24 g/cm ³ | ASTM D792 |
| Glass transition temperature | 55-60°C | ASTM E2092 |
| Water solubility | insoluble | - |
| Odor | odorless | - |
| Storage | at temperatures not exceeding 50°C | - |



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


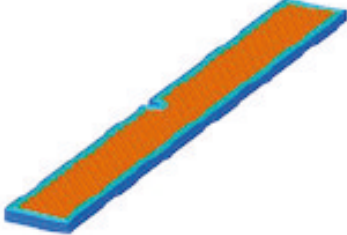
Guideline for print settings*


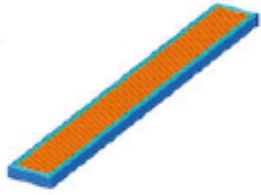
| | |
|--------------------|------------------|
| Nozzle temperature | 185-215°C |
| Bed temperature | 0-45°C |
| Active cooling fan | YES (up to 100%) |
| Layer height** | 0.05 - 0.35 mm |
| Shell thickness** | 0.40 – 2.4 mm |
| Print speed** | 40 – 150 mm/s |

*Settings are based on a 0,4 mm nozzle.

** The range depends on the geometrical complexity

| Mechanical properties | Tensile test | | Test Method ASTM D638 | |
|--|--|-------|---|-------|
| | Printed vertical (Z-axis) | | Printed horizontal (X, Y-axis) | |
| Infill | 50 % | 100 % | 50 % | 100 % |
| Tensile strength (MPa) | 12,6 | 16,2 | 15,8 | 23,8 |
| Force at break (MPa) | 12,6 | 16,2 | 15,7 | 23,6 |
| Elongation at max force (%) | 4,0 | 3,9 | 8,8 | 5,3 |
| Elongation at break (%) | 4,0 | 3,9 | 11,0 | 13,3 |
| E modulus (MPa) | 313,3 | 428,7 | 307,8 | 453,8 |
| <p>All specimens were printed using the BLIXET B100 Multi 3D printer using following parameters: Nozzle temperature: 210°C Bed temperature: 60°C Printing speed: 45mm/s Number of shells: 4 Infill type: lattice Infill under: 45°</p> | | | | |
| |  | |  | |

| Mechanical properties | Impact test | | Test Method ISO 179 | |
|--|---|------|---|------|
| | Charpy - Printed vertical (Z-axis) | | Charpy - Printed horizontal (X, Y-axis) | |
| Infill | 50% | 100% | 50% | 100% |
| Impact strength (J/cm ²) | 2,59 | 4,61 | 1,38 | 1,70 |
| Impact energy (mj) | 1000 | 1900 | 600 | 700 |
| <p>All specimens were printed using the BLIXET B100 Multi 3D printer using following parameters: Nozzle temperature: 210°C Bed temperature: 60°C Printing speed: 45mm/s Number of shells: 4 Infill type: lattice Infill under: 45°</p> | | | | |
| |  | |  | |

| Mechanical properties | Flexural test | | Test Method ISO 178 | |
|--|--|-------|--|-------|
| | Printed vertical (Z-axis) | | Printed horizontal (X, Y-axis) | |
| Infill | 50% | 100% | 50% | 100% |
| Flexural modulus (MPa) | 1429 | 1490 | 1682 | 2157 |
| Maximum bending stress (MPa) | 2,39 | 23,48 | 43,75 | 63,64 |
| Deflection (mm) | 0,8 | 11 | 1,5 | 10,5 |
| <p>All specimens were printed using the BLIXET B100 Multi 3D printer using following parameters:</p> <p>Nozzle temperature: 210°C Bed temperature: 60°C Printing speed: 45mm/s Number of shells: 4 Infill type: lattice Infill under: 45°</p> |  | |  | |

Preparation date: 08-05-2019

All shown data are typical properties. Users should confirm results by their own tests.