**technical datasheet**

# F3 PA Pure Lite

Dezember 2024

www.fiberthree.com

## General information

Properties

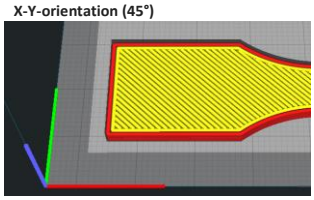
- *PA 12 blend*
- *unfilled*
- *hight tensile strength with high impact resistance*
- *low water absorption*
- *low warping effect*
- *excellent adhesion to epoxy based fiber plates*
- *chemical resistant to many oils, carburant and chemicals*
- *good hydrolysis resistance*
- *very smooth surfaces possible (bone white color)*

| Mechanical properties | Test method | Unit | Typical value | Quality grade acc. VDI 3405 Part 7 |
|---|---|---|---|---|
| Density | DIN EN ISO 1183 | g/ cm³ | 1,14 | |
| Modulus of Elasticity printed specimen x-y (0°) * | DIN EN ISO 527-2 Typ 1A * | MPa (N/mm²) | 3.300 | 6 |
| Modulus of Elasticity printed specimen x-y (90°) * | DIN EN ISO 527-2 Typ 1A * | MPa (N/mm²) | -- | -- |
| Tensile strength printed specimen x-y (0°) * | DIN EN ISO 527-2 Typ 1A * | MPa (N/mm²) | 80 | 8 |
| Tensile strength printed specimen x-y (+ 45°/-45°) * | DIN EN ISO 527-2 Typ 1A * | MPa (N/mm²) | 60 | 6 |
| Tensile strength printed specimen x-y (90°) * | DIN EN ISO 527-2 Typ 1A * | MPa (N/mm²) | 35 | 3 |
| Tensile stress printed specimen x-y (0°) | DIN EN ISO 527-2 Typ 1A* | MPa (N/mm²) | -- | |
| Elongation printed specimen (0°) | DIN EN ISO 527-2 Typ 1A* | % | -- | -- |
| Flexural modulus $E_f$ printed specimen (+ 45°/-45°) | DIN EN ISO 14125 (Method B) | GPa (kN/mm²) | 2,59 | |
| Impact strength printed specimen | DIN EN ISO 179eU | kJ/m² | 135 | |
| Impact strength printed specimen (notched) | DIN EN ISO 179eB | kJ/m² | 4,5 | |

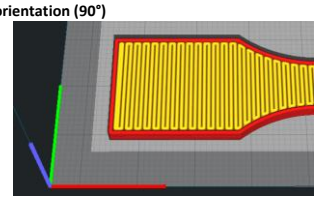
* Test specimen printed: 1.75mm filament; v=50 mm/s; Orientation layers in 0°/ 90°/ +-45°; conditioned 24h at 50% RF and 23° C
Test specimen polyamide lite: Raise3D Pro2, nozzle 0.6mm, temp. nozzle 305°C, temp print bed 70°C; layer height 0.15mm
Tensile test PA with 1mm/min. These are target values for optimal print quality. Values might vary greatly with the same settings, depending on the system Nozzle - Printer - Gcode.

## Orientation of printed specimen

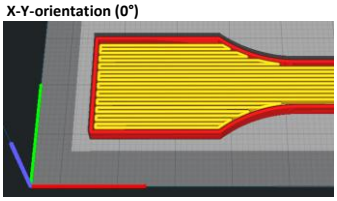
**X-Y-orientation (45°)**



**X-Y-orientation (90°)**



**X-Y-orientation (0°)**



| Thermal properties | Test method | Unit | Typical value |
|---|---|---|---|
| Glass transition temp. | DIN ISO 11357 | °C | 88 |
| Heat distortion temp. (HDT A@1,8 MPa) | DIN ISO 75 | °C | 90 °C ( Continious service temp. 120°C - IEC 60216) |
| **Electrical properties** | **Test method** | **Unit** | **Typical value** |
| Insulation resistance | IEC 60167 | Ohm*m | $>10^{12}$ |
| Surface resistance | IEC 60093 | Ohm*m | $>10^{12}$ |
| **Other properties** | **Test method** | **Unit** | **Typical value** |
| Water absorption (after 24h) | DIN ISO 62 | % | < 0,3 |
| **Recommendations** | **Test method** | **Unit** | **Typical value** |
| Temperature nozzle | Fiberthree GmbH | °C | 270 - 300 |
| Temperature build plate | Fiberthree GmbH | °C | Max. 90 |
| Nozzle diameter | Fiberthree GmbH | mm | > 0,20 |
| Fan cooling | Fiberthree GmbH | % | not recommended |
| Layer height | Fiberthree GmbH | mm | ≥ 0,10 |
| Recommended wall thickness to reduce significantly the impact of moisture | Fiberthree GmbH | mm | 2,5 |
| Printing speed | Fiberthree GmbH | mm/s | 25 |
| Infill | Fiberthree GmbH | % | 0 - 100 |
| Retraction (direct drive/ bowden system) | Fiberthree GmbH | mm (@ 50mm/sec) | direct drive min. 2mm / bowden system min. 6mm |
| Material build plate | Fiberthree GmbH | | carbon fiber, glass fiber or phenolic resins, glass, PEI |
| Recommended nozzle | Fiberthree GmbH | | all nozzles |
| Recommended parts | Fiberthree GmbH | | high strength parts with smooth surface |

## EU & REACH conformity

| | | |
|---|---|---|
| SVHC > 0,1 % (List dated December 2023) | given | no substances included |
| Regulated substances acc. 2015/863/EU (RoHS 3) | given | no substances included |

## Legal disclaimer

Technical properties or values are related to the thermoplastic base material for filament production if not mentioned differently.
Any recommendation made for use of seller's materials are made to the best knowledge and are based upon prior tests and experience of the seller. Seller does not guarantee the results to be obtained and all such recommendations are non-binding and do not constitute any representation and do not affect in any way buyer's obligation to examine and test the seller's goods with regard to their suitability for buyer's foreseen purposes.
No information given by the seller is to be construed in any way as a guarantee regarding charactaristics or duration of use, unless such information has been explicitly given as a guarantee.