# FibreTuff® PAPC I

**The FibreTuff PAPC I is a nylon based composition with polyolefin and cellulose fiber for 3D Printing. FibreTuff PAPC I is focused on solving problems for advanced users in the medical market. The 3D Printed parts made with FibreTuff PAPC I will have the look and feel like human bone, radiopacity with excellent screw retention, laser and saw cutting ability.**

**FibreTuff PAPC can be 3D Printed in either the FDM or SLS method. The FibreTuff PAPC I is anisotropic, better to print in a Z direction versus x and y. The moisture content of FibreTuff PAPC I is minimal and doesn't require extensive drying. Please put spool back in bag after each use and seal.**

## Recommended processing conditions.

**The nozzle size should be .4 or .5mm with temps at 225 - 235C.**
**The printer bed should be heated at 70-90C.**
**Layer height .1 - .2mm**
**Printing speeds 45 mm/s**
**Printer oven is desired - temps 80C.**
**Density or infill is at 90 - 93% infill**
**Adhesive required for printing or breakaway material - PVA recommended**
**Turn Cooling fan on for building initial layers, turn fan off for printing.**

## Mechanical properties

| Mechanical Properties | Conditions | Unit | Duraform Pro X | Nylon PA11 Values | Nylon PA12 Values | FibreTuff |
|---|---|---|---|---|---|---|
| Density of laser-sintered part | EOS-Method (Polyamides PA11, PA12)ASTM D792(MJF PA12) | g/cm3 | 0.95 | 0.99 | min. 0.90 / max. 0.95 | NA |
| Tensile Modulus | ISO 527 (PA11, PA12)ASTM D638 (MJF PA12) | N/mm2 | 1770 | 1585 ± 25 | 1700 ± 150 | 1615 |
| Tensile strength | ISO 527 (PA11, PA12)ASTM D638 (MJF PA12) | N/mm2 | 50 | 48 | 45 ± 3 | 43.75 |
| Elongation at break | ISO 527 (PA11, PA12)ASTM D638 (MJF PA12) | % | 22% | 36.5 ± 8.5 | 20 ± 5 | 5% |
| Melting point | ISO 11357 & DIN53736 (PA11, PA12)ASTM D3418 (MJF PA12) | °C | 200 | 201 | min. 172 / max. 180 | 215-230C |