



# FibreTuff® I



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

FibreTuff can be 3D Printed in either the FDM or SLS method. The FibreTuff I is anisotropic, better to print in a Z direction versus x and y. The moisture content of FibreTuff 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 235 - 240C.

The printer bed should be heated at 70-90C.

Layer height .1 - .2mm

Printing speeds 45 mm/s

Printer oven is desired - temps 90C.

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 at 90C, 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