



# 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 a “bone like” look and feel with radiopacity, good screw retention and sawing and cutting ability. 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