

# Validated Filament Materials

There are many 3D printing materials available for use, each with specific benefits and characteristics. Adaptiiv has validated two filaments, polylactic acid (PLA) and thermoplastic polyurethane (TPU), for use with accessories designed in Adaptiiv software and printed with the Raise3D Pro2 Plus.

Below are characteristics of the 3D-Fuel Standard PLA and Raise3D 95A Premium TPU:

Filament Characteristic	Standard PLA	Premium TPU
Supplier	3D-Fuel	Raise3D
Materials	PLA	TPU
Diameter	1.75 mm	1.75 mm
Rigidity	Inflexible	Flexible
Flexibility	3.2 GPa	9.5MPa
Raw Filament Density	1.24 g/cc	1.20 - 1.24 g/cc
Ease of Printing	Easy	Medium
Surface Feel	Rough	Smooth
Colour	Blue and White	White

Below are the approximate print times for various types and sizes of accessories printed using the Raise3D Pro2 Plus:

Module	Treatment Area	PLA		TPU	
		Print Mass	Print Time	Print Mass	Print Time
Simple Bolus	Nose	38 g	3 hr 15 min	35.5 g	2 h 40 min
Simple Bolus	Chest Wall	290 g	16 h 31 min	270.6 g	19 h 22 min
MEB	Scalp	234.3 g	10 h 16 min	206.3 g	11 h 33 min
Brachytherapy <sup>1</sup>	Nose	268.1 g	10 h 46 min	-	-
Simple Bolus, Shell Mould <sup>2</sup>	Breast	1001.8 g	47 h 15 min	-	-

<sup>1</sup> Adaptiiv recommends printing brachytherapy accessories using PLA.

<sup>2</sup> Printing silicone moulds is available using PLA only.