3D Printing Filaments, TPU and PLA

There are many different options of 3D printing materials on the market, each with specific benefits and characteristics. Adaptiiv has validated polylactic acid (PLA) and thermoplastic polyurethane (TPU) for use with radiation therapy accessories designed in Adaptiiv software and printed using the Raise3D Pro2 Plus.

There are multiple factors to consider when deciding to print with either PLA or TPU, such as:

- What is the required thickness?
- How large will the bolus be?
- Will a flexible bolus benefit the patient?
- What is the level of accuracy required?
- What is the treatment area?

Validated Filament Types

Fused Deposition Modeling (FDM) 3D printing filament comes in a variety of types, colors, and properties. Adaptiiv has validated two filaments, 3D-Fuel Standard PLA and Raise3D 95A Premium TPU.

Polylactic Acid (PLA)

Standard PLA is one of the most popular 3D printing materials because it is easy to print with and is durable. It is a hard plastic that quickly cools, enabling more detail than other plastics. It is derived from starches (sugar, tapioca) and prints quickly and accurately.

Adaptiiv has validated Standard PLA by 3D-Fuel in white and blue.

Key Features
Spatial fidelity accuracy
Easy and fast to print
Reproducible
Inexpensive
Validated by Adaptiiv's experts

Thermoplastic Polyurethane (TPU)

TPU is an elastic thermoplastic, making it ideal for printing objects that need flexibility and durability. The result is a printable filament across all types of desktop 3D printers at ABS and PLA speeds, many times twice the rate of other flexible materials on the market.

Adaptiiv has validated 95A Premium TPU from Raise3D in white.

Key Features
Flexible yet able to withstand wear and tear
Prints at speeds greater then 60 mm/s
Industry leading toughness and durability
Chemical resistance to many materials
Smooth to the touch
Validated by Adaptiiv's experts