

## Raise3D Premium TPU-95A Technical Data Sheet

Raise3D Premium TPU-95A (Thermoplastic polyurethane) is a flexible and elastic 3D printing filament. Its rubber-like elasticity, resilience, and durability make it suitable for uses requiring impact-absorption and a soft-touch surface. TPU-95A printed parts are widely used in applications such as insoles, tubes, seals, and bushings.

### Physical Properties

Property	Testing Method	Typical Value
Density	ISO 1183, GB/T 1033	1.20 - 1.24 (g/cm <sup>3</sup> , at 23°C)
Melt index	185 °C, 1.2 kg	9.3 (g/10min)
Odor	/	Almost odorless
Solubility	/	Insoluble in water

Data from a newly opened filament spool;

Note: Filaments may absorb higher levels of moisture during printing, a filament drying box is recommended. Dry the filament at 70°C for over 10h before printing, especially for Hyper FFF™ L1 high speed printing profiles.

### Mechanical Properties

Property	Testing Method	Typical Value
Young's modulus (X - Y)	ISO 37, GB/T 528	13.2 ± 0.3 (MPa)
Tensile strength (X - Y)	ISO 37, GB/T 528	23.1 ± 0.6 (MPa)
Elongation at break	ISO 37, GB/T 528	462 ± 21 (%)
Shore Hardness	ISO 7619-1, GB/T 531.1	95A

All testing specimens were printed under the following conditions:

Printing temperature = 210 °C, printing speed = 30 mm/s, number of shells = 2, and 100% infill.

All specimens were conditioned at room temperature for 24h prior to testing.

### Recommended printing conditions

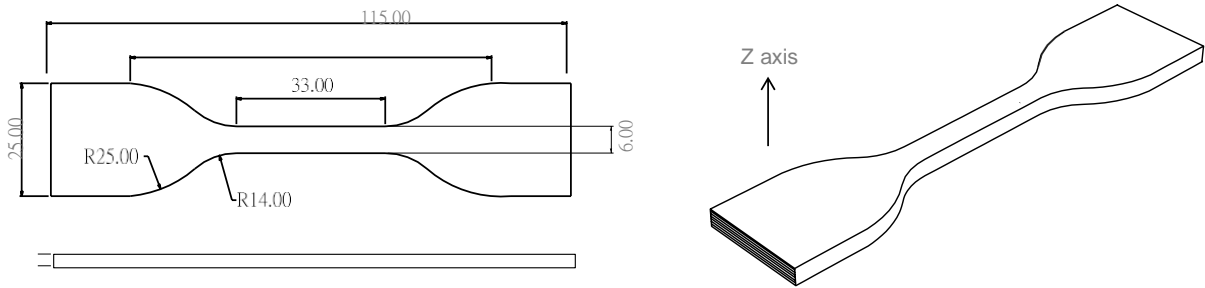
Parameter	Recommended Setting
Nozzle temperature	200 - 220 (°C)
Build Surface material	BuildTak®
Build surface treatment	Magigoo
Build plate temperature	25 - 50 (°C)

Cooling fan	Turned on
Printing speed	40 - 100 (mm/s)
Raft separation distance	0.20 (mm)
Retraction distance	3 (mm)
Retraction speed	40 (mm/s)
Recommended environmental temperature	Room temperature
Threshold overhang angle	40 (°)

**Note:**

Based on 0.4 mm nozzle and ideaMaker. Printing conditions may vary with different nozzle diameters.

**Testing Geometries**



*Tensile testing specimen; ISO 37*

**Disclaimer**

The typical values presented in this data sheet are intended for reference and comparison purposes only. They should not be used for design specifications or quality control purposes. Actual values may vary significantly with printing conditions. End-use performance of printed parts depends not only on materials, but also on part design, environmental conditions, printing conditions, etc. Product specifications are subject to change without notice.

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