January 2024 Version 2.1

# OVERTURE PLA PRO TECHNICAL DATA SHEET

## Physical Properties

| Property | Testing method | Typical value |
|---|---|---|
| Density | ASTM D792 (ISO 1183, GB/T 1033) | 1.24 (g/cm3 at 21.5˚C) |
| Vicat Softening temperature | ASTM D1525 (ISO 306 GB/T 1633) | 63 (˚C) |
| Melt index | 210 °C, 2.16 kg | 6.0 – 7.0(g/10min) |
| Melting temperature | DSC, 10 °C/min | 151 (˚C) |

Tested with 3D printed specimen of 100% infill

## Mechanical Properties

| Property | Testing method | Typical value |
|---|---|---|
| Young's modulus (X-Y) | ASTM D638 (ISO 527, GB/T 1040) | 2681 ± 215 (MPa) |
| Tensile strength (X-Y) | ASTM D638 (ISO 527, GB/T 1040) | 35.7 ± 0.9 (MPa) |
| Elongation at break (X-Y) | ASTM D638 (ISO 527, GB/T 1040) | 2.5 ± 0.6 (%) |
| Bending modulus | ASTMD790 (ISO 178, GB/T 9341) | 2700 ± 154 (MPa) |
| Bending strength | ASTMD790 (ISO 178, GB/T 9341) | 68.1 ± 2.2(MPa) |
| Charpy impact strength | ASTM D256 (ISO 179, GB/T 1043) | 13.4 ± 1.2 (kJ/m2) |

All testing specimens were printed under the following conditions: nozzle temperature = 200 °C, printing speed = 60 mm/s, build plate temperature = 65 °C, infill = 100% All specimens were conditioned at room temperature for 24h prior to testing

## Recommended Printing Conditions

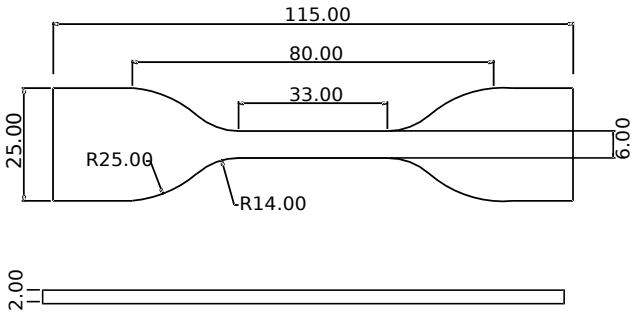
| | |
|---|---|
| **Nozzle temperature** | 190 - 220 (˚C) |
| **Build Surface material** | OVERTURE Build Surface, Glass, Blue Tape |
| **Build surface treatment** | None, Applying PVA glue to the build surface |
| **Build plate temperature** | 40-65 (˚C) |
| **Cooling fan** | Turned on |
| **Printing speed** | 50-70 (mm/s) |
| **Raft separation distance** | 0.1-0.2 mm |
| **Retraction distance** | 1-3 mm |
| **Retraction speed** | 20 - 40 mm/s |
| **Threshold overhang angle** | 60 ˚ |
| **Recommended support material** | None |

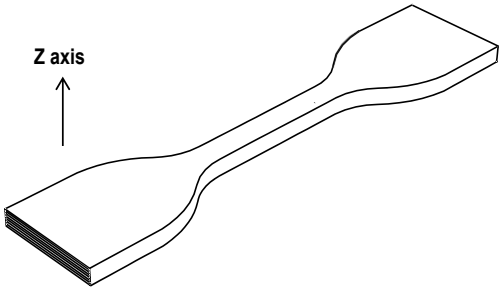
Based on 0.4 mm copper nozzle and Simplify 3D Printing conditions may vary with different nozzle diameters

**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.

Each user is responsible for determining the safety, lawfulness, technical suitability, and disposal/recycling practices of OVERTURE materials for the intended application. OVERTURE makes no warranty of any kind, unless announced separately, to the fitness for any use or application. OVERTURE shall not be made liable for any damage, injury or loss induced from the use of OVERTURE materials in any




**Tensile testing specimen; ASTM D638 (ISO 527, GB/T 1040)**