Raise3D Premium ASA Technical Data Sheet

Raise3D Premium ASA is an alternative to ABS with an improved weather resistance. Its UV resistance and excellent mechanical properties make it the perfect choice for real life application.

Physical Properties

Property	Testing Method	Typical Value
Density	ISO 1183, GB/T 1033	1.10 (g/cm³ at 21.5˚C)
Glass transition temperature	DSC, 10 °C /min	98 (°C)
Vicat Softening temperature	ASTM D1525 (ISO 306 GB/T 1633)	105 (°C)
Melt index	220 °C, 10 kg	25 (g/10 min)
Heat distortion temperature	ISO 75@1.8 MPa	100
Heat distortion temperature	ISO 75@0.45 MPa	103

Note:
Tested with 3D printed specimen of 100% infill.

Mechanical Properties (Dry State)

Property	Testing Method	Typical Value
Young's modulus (X-Y)	ISO 527, GB/T 1040	2379 ± 157 (MPa)
Young's modulus (Z)	ISO 527, GB/T 1040	2062 ± 76 (MPa)
Tensile strength (X-Y)	ISO 527, GB/T 1040	44 ± 0.8 (%)
Tensile strength (Z)	ISO 527, GB/T 1040	32 ± 0.5 (%)
Elongation at break (X-Y)	ISO 527, GB/T 1040	6.7 ± 0.6 (%)
Elongation at break (Z)	ISO 527, GB/T 1040	2.7 ± 0.3 (%)
Bending modulus (X-Y)	ISO 178, GB/T 9341	3206 ± 108 (MPa)
Bending strength (X-Y)	ISO 178, GB/T 9341	73 ± 2 (kJ/m²)
Charpy impact strength(X-Y)	ISO 179, GB/T 1043	10.3 ± 0.4 (kJ/m²)
Charpy impact strength(Z)	ISO 179, GB/T 1043	6.7 ± 1.4 (kJ/m²)

Note:
All testing specimens were printed under the following conditions:
nozzle temperature = 260 °C, printing speed = 50 mm/s, build plate temperature = 80 °C, infill = 100%

Recommended printing conditions

Parameter	Recommended Setting
Nozzle temperature	240 - 260 (˚C)
Build Surface material	BuildTak®
Build surface treatment	Magigoo
Build plate temperature	75 - 95 (˚C)
Cooling fan	Turned off
Printing speed	30 - 50 (mm/s)
Raft separation distance	0.15 - 0.20 (mm)
Retraction distance	1 - 3 (mm)
Retraction speed	20 - 40 (mm/s)
Recommended environmental temperature	50 - 70 (˚C)
Threshold overhang angle	50 (˚)

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

Testing Geometries

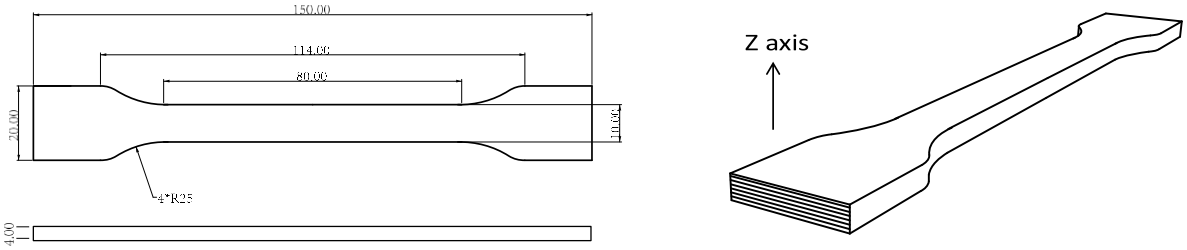

Fig 1. Tensile testing specimen

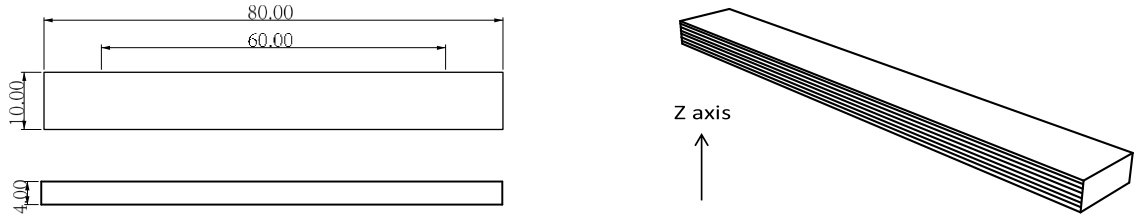

Fig 2. Flexural testing specimen

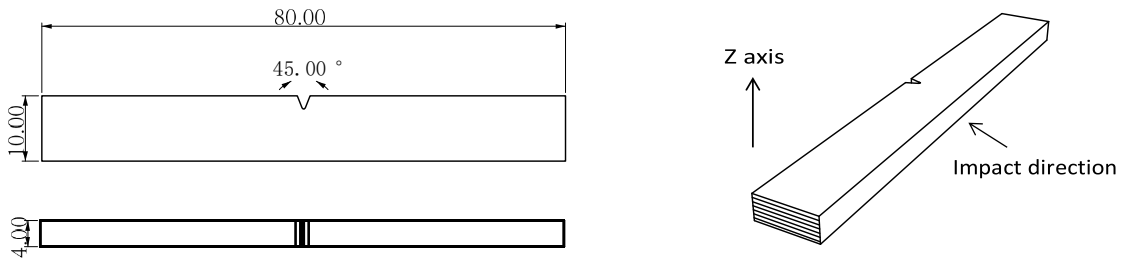

Fig 3. Impact testing specimen

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 Raise3D materials for the intended application. Raise3D makes no warranty of any kind, unless announced separately, to the fitness for any use or application. Raise3D shall not be made liable for any damage, injury or loss induced from the use of Raise3D materials in any application.