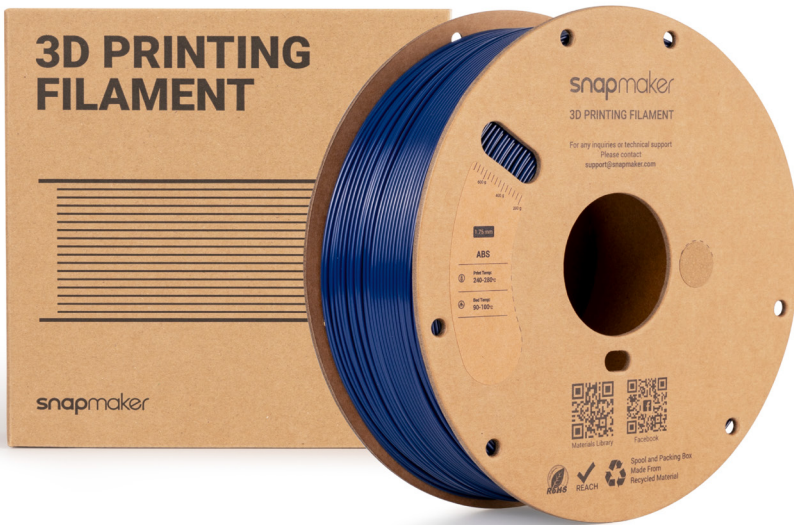


snapmaker | **ABS**

Technical Data Sheet



www.snapmaker.com

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1 Filament Introduction

Snapmaker ABS offers high impact resistance and reliable load-bearing performance for engineering applications. Outperforming PLA and PETG, it absorbs more energy, minimizing the risk of cracking or snapping. It resists embrittlement, deformation, and performance degradation under continuous loads and repeated use. It delivers reliable, heat-resistant performance required for challenging applications.

2 Specifications

Subjects	Data
Diameter	1.75 ± 0.03 mm
Net Filament Weight	1 kg
Length	328 m
Spool Material	Cardboard Spool
Spool Size	Diameter: 200 mm; Height: 66 mm

3 Recommended Printing Settings

Subjects	Data
Drying Settings Before Printing	80°C, 6 h
Printing and Storage Humidity	< 20% RH (Sealed, with Desiccant)
Nozzle Size	0.2, 0.4, 0.6, 0.8 mm
Nozzle Temperature	240–280°C
Bed Type	Textured PEI Plate, Smooth PEI Plate
Bed Surface Preparation	Glue
Bed Temperature	90–100°C
Cooling Fan	OFF
Printing Speed	50–200 mm/s
Retraction Length	0.2–0.6 mm
Retraction Speed	20–30 mm/s

Subjects	Data
Chamber Temperature	60–70°C
Max Overhang Angle	65°
Max Bridging Length	≤ 30 mm

Printing Tips

1. Drying & Storage

- **Pre-Drying:** ABS filament has low moisture sensitivity and generally does not require drying. However, pre-drying is recommended for optimal print results. The recommended setting is 80°C for 6 hours.
- **Storage:** When not in use, we recommend keeping the filament away from direct sunlight in a sealed container with desiccant.

2. Printing

- **Enclosed Printing Required:** This filament is sensitive to temperature fluctuations and may warp during printing. It can also produce a noticeable odor when melted, so enclosed printing is required throughout the process. For U1 printers, we recommend using the official top cover to help stabilize chamber temperature and support air filtration, addressing both issues in one setup. For better air quality, operate the printer in a well-ventilated area during printing.
- **Resolving Poor Layer Adhesion:** If layer bonding is insufficient, try increasing the nozzle temperature, reducing print speed, and turning off the cooling fan.
- **Resolving First-Layer Warping:** If first-layer warping occurs, apply glue to the build plate to improve print success. Avoid printing large models. Adding a brim can also help reduce the risk of warping.

4 Properties

Physical Properties

Subjects	Testing Methods	Data
Density	ISO 1183, GB/T 1033	1.04 g/cm ³ at 23°C
Melt Index	220°C, 2.16 kg	9-14 g/10 min
Melting Temperature	DSC, 10°C/min	N/A
Glass Transition Temperature	DSC, 10°C/min	101°C
Decomposition Temperature	TGA, 20°C/min	> 380°C
Crystallization Temperature	DSC, 10°C/min	N/A
Vicat Softening Temperature	ISO 306, GB/T 1633	104°C
Heat Deflection Temperature	ISO 75, 1.8 MPa	98°C
Heat Deflection Temperature	ISO 75, 0.45 MPa	100°C
Saturated Water Absorption Rate	23°C, 75% RH	0.35%

Mechanical Properties

Subjects	Testing Methods	Data
Young's Modulus (X-Y)	ISO 527, GB/T 1040	2246.6 ± 58.2 MPa
Young's Modulus (Z)	ISO 527, GB/T 1040	2080.9 ± 92.7 MPa
Tensile Strength (X-Y)	ISO 527, GB/T 1040	33.4 ± 0.6 MPa
Tensile Strength (Z)	ISO 527, GB/T 1040	29.7 ± 0.3 MPa
Breaking Elongation Rate (X-Y)	ISO 527, GB/T 1040	17.9 ± 1.3%
Breaking Elongation Rate (Z)	ISO 527, GB/T 1040	3.1 ± 0.3%
Bending Modulus (X-Y)	ISO 178, GB/T 9341	2127.2 ± 29.9 MPa
Bending Modulus (Z)	ISO 178, GB/T 9341	N/A
Bending Strength (X-Y)	ISO 178, GB/T 9341	56.2 ± 0.3 MPa
Bending Strength (Z)	ISO 178, GB/T 9341	N/A
Impact Strength (X-Y)	ISO 179, GB/T 1043	18.0 ± 0.9 kJ/m ² (Notched)
Impact Strength (Z)	ISO 179, GB/T 1043	N/A

Other Physical and Chemical Properties

Subjects	Data
Odor	Noticeable odor (distinct plastic smell during molten printing)
Composition	Acrylonitrile Butadiene Styrene (ABS) copolymer
Skin Hazards	Stable under normal conditions (contact with molten material causes skin burns)
Chemical Stability	Stable under normal conditions (not UV-resistant; prone to aging and yellowing under long-term light exposure)
Solubility	Insoluble in Water (readily soluble in acetone, ethyl acetate, and chlorinated hydrocarbons)
Resistance to Acid	Good
Resistance to Alkali	Good
Resistance to Organic Solvent	Non-Resistant
Resistance to Oil and Grease	Good
Flammability	Flammable (sustains combustion with a yellow flame)
Combustion Products	Water, Carbon Oxides, Hydrogen Cyanide, Styrene Monomer, Butadiene Monomer, Heavy Black Smoke and Soot
Odor of Combustion Products	Strong pungent odor of burnt rubber and plastic

5 Specimen Test

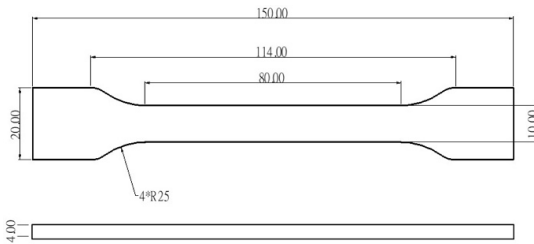
Specimen Printing Conditions

Subjects	Data
Nozzle Temperature	260°C
Bed Temperature	90°C
Printing Speed	50 mm/s
Infill Density	100%



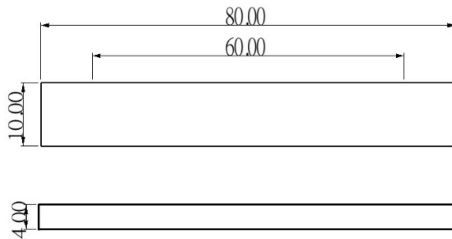
Based on 0.4 mm nozzle. Printing conditions may vary with different nozzle diameters.

Tensile Testing Specimen



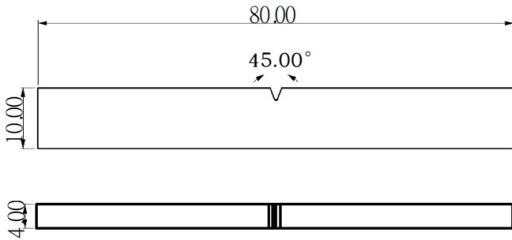
ISO 527, GB/T 1040

Flexural Testing Specimen

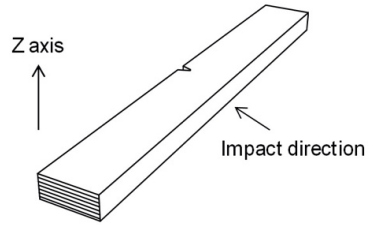


ISO 178, GB/T 9341

Impact Testing Specimen



ISO 179, GB/T 1043



6 Disclaimer

The performance and printing parameters of the aforementioned filaments are obtained by Snapmaker through testing filament samples with sample 3D printers. All data provided is for reference and comparison purposes only, and does not constitute design specifications or any warranty of quality. Actual 3D printing quality and final part performance are subject to various factors including, but not limited to, printer equipment, model design, environmental conditions, and printing parameters. Users shall independently evaluate the compliance and safety of printed models and finished parts, including legal compliance, application safety, and structural reliability. Snapmaker shall not be held liable for any direct or indirect losses arising from the use of the aforementioned filaments, including equipment damage, print failure, personal injury, and property damage.

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