snapmaker | **PEBA 90A**

Technical Data Sheet



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1 Filament Introduction 3
2 Specifications 3
3 Recommended Printing Settings 3
4 Properties 6
5 Specimen Test 8
6 Disclaimer 9

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1 Filament Introduction

PEBA 90A is a performance filament engineered for high-rebound applications. While maintaining a soft touch, it delivers more pronounced rebound. Combining good abrasion resistance with excellent elastic recovery, it is well suited to use cases that require repeated deformation—ideal for sports, footwear, lattice structures, and wearable applications. The material also retains excellent toughness and elasticity even in low-temperature environments.

2 Specifications

Subjects	Data
Diameter	1.75 mm ± 0.1 mm
Net Filament Weight	800 g
Length	305 m
Spool Material	HIPS (Resistance: ≤ 80°C)
Spool Size	Diameter: 200 mm; Height: 64 mm

3 Recommended Printing Settings

Subjects	Data
Drying Settings Before Printing	75°C for 8 h
Printing and Storage Humidity	< 20% RH (Sealed, with Desiccant)
Nozzle Size	0.4 / 0.6 / 0.8 mm
Nozzle Temperature	220°C–250°C
Bed Type	Textured PEI Plate, Smooth PEI Plate
Bed Surface Preparation	Glue
Bed Temperature	90°C–100°C
Cooling Fan	ON

(continued)

Subjects	Data
Printing Speed	Up to 107 mm/s
Retraction Length	1 mm–1.5 mm
Retraction Speed	15 mm/s–25 mm/s
Chamber Temperature	50°C–60°C
Max Overhang Angle	30°
Max Bridging Length	≤ 10 mm
Support Material	PETG / PLA

Printing Tips

1. Drying & Storage

- **Dry Before Printing:** PEBA 90A High Rebound Filament is sensitive to moisture. Thoroughly dry the filament before printing to reduce surface bubbles, stringing, and other issues. Recommended drying setting: 75°C for 8 hours.

- **Store Properly:** After opening, store the filament in a sealed container with desiccant. Keep the humidity below 20% during printing and storage, and avoid direct sunlight. Dry the filament again before reuse.

2. Printing

- **Use Manual Loading:** As a flexible filament, PEBA 90A may experience feeding issues or nozzle clogging during automatic loading and unloading. Do not use an automatic filament feeder. Load the filament manually to improve the print success rate.

- **Choose a Suitable Nozzle Size:** Do not use a hot end with a nozzle smaller than 0.4 mm. Recommended nozzle sizes are 0.4 mm, 0.6 mm, and 0.8 mm.

- **Disable Dynamic Flow Calibration:** Before printing, turn off "Dynamic Flow Calibration" to prevent the compression and deformation of the flexible filament from affecting calibration results and print quality.

- **Reduce Bubbles and Stringing:** Bubbles or excessive stringing on the printed surface usually indicate that the filament has absorbed moisture. Thoroughly dry the filament using the recommended settings before printing again.

- **Improve Overhang Cooling**: If the surface of an overhang begins to sag, make sure the cooling fan is set to 100%. You can also orient the affected area toward the fan and move the model closer to it to improve local cooling.

- **Prevent Excessive Build Plate Adhesion**: PEBA 90A may adhere too strongly to the build plate, and removing the model directly may damage the bottom surface of the print. Apply an even layer of glue stick to the build plate before printing. After printing, spray a small amount of alcohol around the contact area between the model and the build plate. Allow it to seep underneath the model before carefully removing the print.

- **Improve Support Results**: For better overhang surface quality and easier support removal, use PETG/PLA as the support material.

4 Properties

Physical Properties

Subjects	Testing Methods	Data
Density	ISO 1183	1.01 g/cm³–1.05 g/cm³
Shore A		90 A
Melt Index	210°C, 2.16 kg	8 g–16 g/10 min
Melting Temperature	DSC, 10°C/min	125°C–165°C
Glass Transition Temperature	DSC, 10°C/min	/
Decomposition Temperature	TGA, 20°C/min	/
Crystallization Temperature	DSC, 10°C/min	/
Vicat Softening Temperature	ISO 306, GB/T 1633	≥ 105°C
Heat Deflection Temperature	ISO 75 1.8 MPa	/
Heat Deflection Temperature	ISO 75 0.45 MPa	/
Saturated Water Absorption Rate	25°C, 55% RH	/

Mechanical Properties

Subjects	Testing Methods	Data
Young's Modulus (X-Y)	ISO 527, GB/T 1040	N/A
Young's Modulus (Z)	ISO 527, GB/T 1040	N/A
Tensile Strength (X-Y)	ISO 527, GB/T 1040	≥ 16.0 MPa
Tensile Strength (Z)	ISO 527, GB/T 1040	7.0 MPa
Breaking Elongation Rate (X-Y)	ISO 527, GB/T 1040	≥ 500%
Breaking Elongation Rate (Z)	ISO 527, GB/T 1040	140%
Bending Modulus (X-Y)	ISO 178, GB/T 9341	80 MPa
Bending Modulus (Z)	ISO 178, GB/T 9341	N/A
Bending Strength (X-Y)	ISO 178, GB/T 9341	N/A

(continued)

Bending Strength (Z)	ISO 178, GB/T 9341	N/A
Impact Strength (X-Y)	ISO 179, GB/T 1043	N/A
Impact Strength (Z)	ISO 179, GB/T 1043	N/A
Maximum Resilience	ASTM D2632	65%–70%
DIN Abrasion*	ISO 4649	< 50 mm^3

*Tested on raw material, not on printed parts.

Other Physical and Chemical Properties

Subjects	Data
Odor	Odorless
Composition	Polyether Block Amide
Skin Hazards	No hazard
Chemical Stability	Long-term stable at 23 °C; chemical resistance markedly deteriorates above 100 °C, prone to hydrolysis/swelling.
Solubility	Insoluble in Water
Resistance to Acid	Weak Acids: Good
Resistance to Alkali	Excellent at RT
Resistance to Organic Solvent	Resistant to most non-polar/weakly polar organic solvents; not resistant to strongly polar solvents.
Resistance to Oil and Grease	Resistant to most kinds of oil and grease
Flammability	Flammable
Combustion Products	Water, Carbon Oxides, Nitrogen, minor nitrogen oxides (NO, NO_2)
Odor of Combustion Products	Slight Pungent Odor

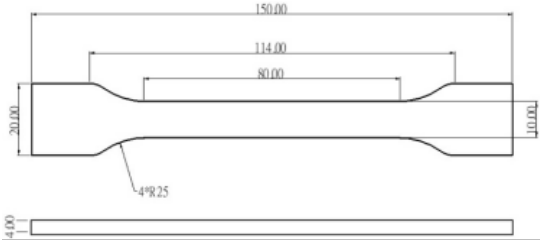
5 Specimen Test

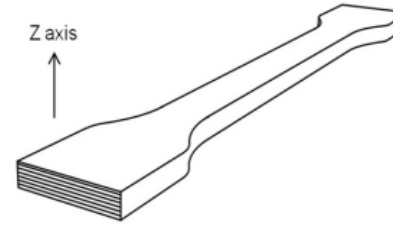
Specimen Printing Conditions

Subjects	Data
Nozzle Temperature	240°C
Bed Temperature	90°C
Printing Speed	25 mm/s
Infill Density	100%

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

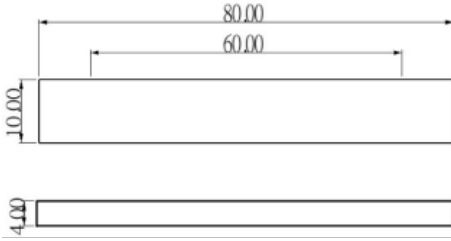
Tensile Testing Specimen

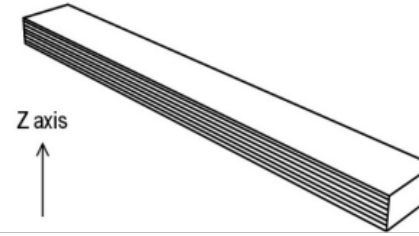




ISO 527, GB/T 1040

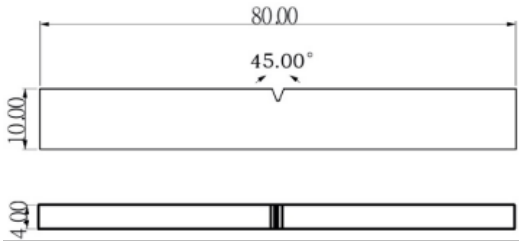
Flexural Testing Specimen

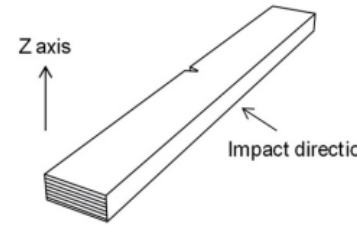




ISO 178, GB/T 9341

Impact Testing Specimen

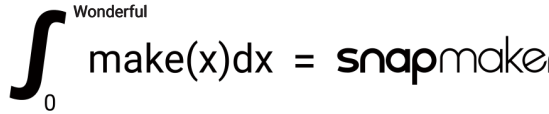




ISO 179, GB/T 1043

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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