phrozen

【Phrozen Filament User Guide】

PP - White

Outline

Before printing the perfect object, it is important to first understand the material limitations we are handling and how it can be successfully printed under various conditions. With this in mind, Phrozen provides the following design suggestions to help you better understand the properties of each material and how you can best utilize them to bring your wildest creation to life.

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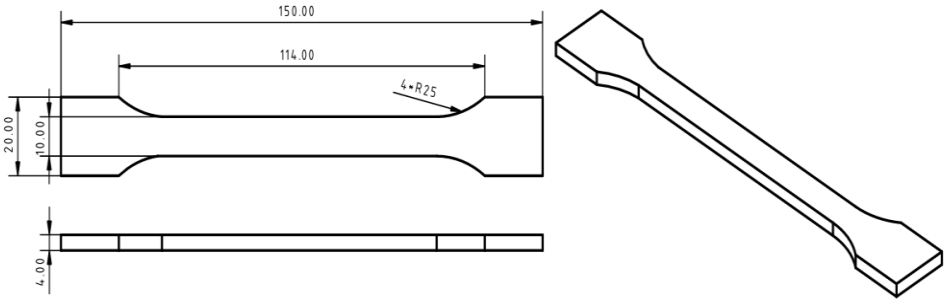
Section 1

TDS

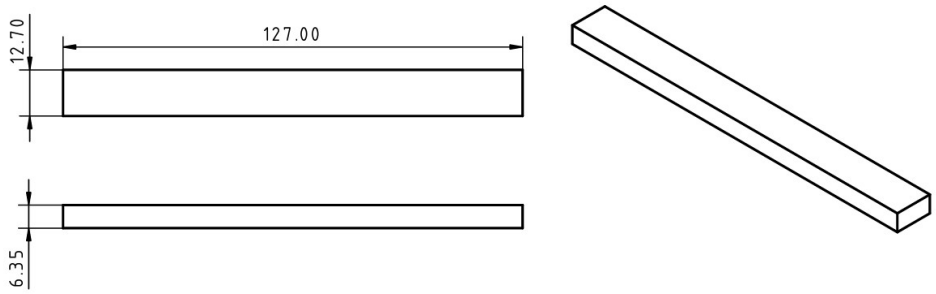
Tensile Properties	Norm	Values
		Printing Direction (X-Y)
Tensile Strength at Break	ISO 527	11.8 MPa
Elongation at Break	ISO 527	585.2 %
Thermal Properties	**Norm**	**Values**
HDT at 0.45 MPa	ASTM D648	65 °C
Hardness	**Norm**	**Typical values**
Shore D	ISO 7619-1	90 -95A
Water Absorption	**Norm**	**Typical values**
Short Term (24hr)	ISO 62	0.09%

**All test pieces were printed in an environment of 25 ± 2°C and RH55 ± 10% right after removing the vacuum bag and were set aside to cool down completely before testing.*

Performance values obtained in standard sample tests conducted by Phrozen are for design reference and comparison only. The actual performance of each 3D printed model might be impacted by other variables, including the printer, printing model, printing environment, printing parameters, etc.
Users are responsible for their legality, safety, and performance indicators when printing with Phrozen's material. Phrozen is not responsible for the materials and usage scenarios, nor is it responsible for any damage that occurs during the use of our materials.



ISO 527 Tensile Test Bar (unit: mm)



ASTM D648 HDT Test Bar (unit: mm)

Section 2

Printing

Printing Parameters

Filament Specifications

Appearance	White
Diameter	1.75 ± 0.05 mm
Density	1.03 g/cm²
HDT 0.45 Mpa	65 °C
Melt Flow Index	32-36 g / 10min (@2.16kg，250℃)
Weight	1000 g

Test Print Parameters

Nozzle Diameter	0.4 mm
Nozzle Temperature	270 °C
Heat Bed Temperature	100 °C
Printing Speed	50 mm/s
Fan Speed	100 %
Infill Percentage	100 %

Recommended Printing Parameters

Nozzle Temperature	255 ± 15 °C
Heat Bed Temperature	90 - 100 °C
Printing Speed	< 50 mm/s
Fan Speed	100 %

※ Must be used together with a 3D Printer Bed Adhesive

Drying Conditions

Drying Temperature	50–55°C
Drying Time	6–8 hours

※Be sure to bake the filament before each print to remove moisture.

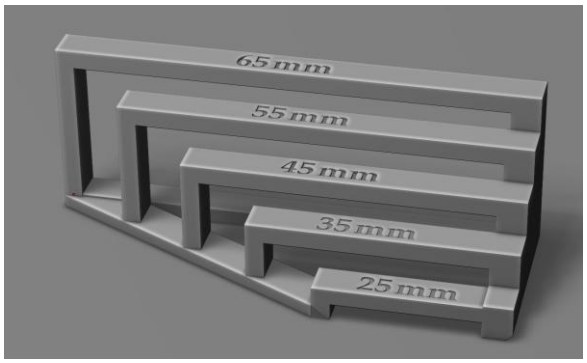
Section 3

Design Specifications

※Note: All indicators are the limit values of PP and will vary depending on the machine, parameters, operating environment, and printing model used※

Maximum Horizontal Bridge Span

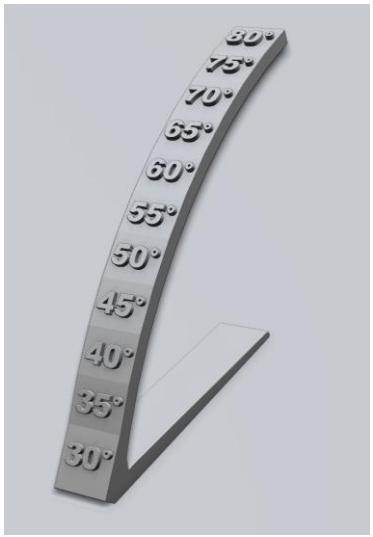
This indicator shows the maximum width between the supporting walls that can be printed without deforming the bridge.



Recommended distance: ≤ 10mm

Maximum Hanging Angle

This indicator is the maximum angle that can be printed completely without support.



Recommended angle: < 55°

Section 4

Printing Recommendations

PP is not compatible with ChromaKit multi-color printing.

Because PP tends to shrink, thin walls and corners are prone to warping during printing. We recommend enabling the "Brim" setting and using an FDM adhesive spray for better print quality.

