How do you find the right bed temperature for a filament?

Asked 3D Content Team
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Abstract. Take the bed range from the data sheet's recommended print settings, for your plate (Prusament PLA: 40 to 60 °C). Raise 5 to 10 °C if the first layer won't stick.

Keywords: bed-adhesion, build-plates, slicer-settings

Table 1. The number

Data sheet	Section holding the bed figure	Label used	Bed range	Other bed numbers on the same sheet
Bambu Lab PLA Basic, V3.0	Recommended Printing Settings	Bed Temperature	35 to 45 °C, for the Cool Plate, High Temperature Plate or Textured PEI (polyetherimide) Plate	35 °C under Specimen Test; 60 to 70 °C for 12 h on an X1 heatbed under drying
Prusament PLA, version 1.1	Recommended print settings, page 1	Heatbed Temperature [°C]	40 to 60 °C, for smooth PEI, powder-coated or satin sheets	“Bed Temperature 60 °C all layers” in the test-specimen footnote
Polymaker PolyLite PLA	Recommended Printing Conditions	Build plate temperature	25 to 60 °C, on PC (polycarbonate) and textured PEI, glue when needed	50 °C under How to Make Specimens; whole block “Based on 0.4 mm nozzle”
UltiMaker PLA, version 2.00	None	None	Not listed	None; UltiMaker’s Cura material profile sets 60 °C (55 °C for the Factor 4)

1 How do you find the right bed temperature for a filament?

Find the bed figure in the recommended print settings of the filament’s data sheet, check which build plate it assumes, and start mid-range. Prusament PLA (polylactic acid), for example, lists 40 to 60 °C. If the first layer won’t stick, Prusa’s advice is to raise the bed 5 to 10 °C.

1.1 The number

The rows quote the Bambu Lab, Prusament, Polymaker and UltiMaker PLA technical data sheets as published. The UltiMaker profile figure comes from its fdm_materials file on GitHub. Per-material values for other plastics are in the bed temperature chart.

1.2 How do you read the bed temperature from a filament data sheet?

Use the block headed Recommended Printing Settings or Recommended Printing Conditions; the wording varies by maker. On the three sheets that have one, the bed figure sits beside the nozzle temperature and the plate type. Three other entries trip people up:

- **The test-specimen bed.** Bambu printed its PLA Basic test bars on a 35 °C bed, Prusa its Prusament bars at 60 °C, Polymaker its PolyLite bars at 50 °C. That is one setting used for the mechanical tests, not a recommendation.
- **The drying setting.** Bambu’s 60 to 70 °C “Heatbed” line is for drying the spool on an X1 printer’s bed for 12 hours, not for printing.
- **The plate list.** The range applies only to the plates named beside it. All three sheets that name plates list PEI, and Polymaker adds a PC plate.

1.3 What if the data sheet gives a range?

A range can stand for one plate even when the sheet lists several, so pick by plate first. Bambu’s PLA Basic sheet says 35 to 45 °C, which is the Cool Plate figure in Bambu’s own filament guide. On smooth and textured PEI the guide gives 45 to 65 °C. Bambu Studio’s PLA Basic presets follow the guide: 35 °C on the Cool Plate and 55 °C on PEI, or 65 °C on PEI for the A1, which has no enclosure.

When a preset sits outside the sheet’s range, check the plate before you decide either one is wrong.

1.4 What if the data sheet gives no bed temperature?

UltiMaker’s PLA sheet lists material properties only, with no print settings section. The setting lives in the slicer profile instead: Cura’s UltiMaker PLA profile uses 60 °C. For any sheet without a number, start from the maker’s slicer profile if one exists. Otherwise use your slicer’s generic profile for that plastic.

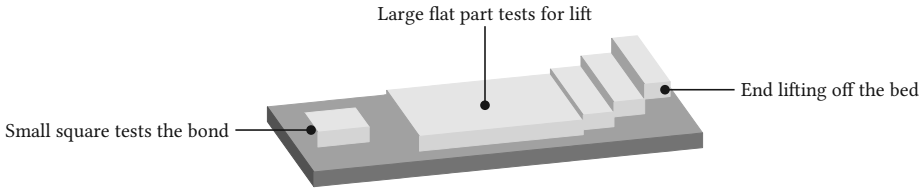


Figure 1. A small square shows whether the first layer bonds, and a large flat part in your real footprint shows whether the edges lift.

1.5 What if the spool label disagrees with the data sheet?

Use whichever figure names your build plate, then compare it with your slicer's preset for that filament. If all three disagree, start where the ranges overlap and let a test print decide.

1.6 Why the range is wide

The bed keeps the first layers warm enough to stay stuck while the rest of the part cools. Too cool and the edges lift: Bambu's warping guide names a bed set too low for the plate as one of the most common causes. Heat has a cost at the bottom edge too.

Prusa describes elephant foot, a first layer squished against the heated bed until it ends up wider than designed. The ceiling sits near the plastic's softening point: Bambu's PLA Basic sheet gives a 60 °C glass transition, and Bambu's guide tops out PLA on PEI at 65 °C.

1.7 How to check it on your own print

- **Select the plate you're printing on.** Bambu warns that the wrong plate in the slicer prints with a bed that is too cold. On a textured PEI plate the printer also lowers the nozzle 0.04 mm, so a mismatch raises the first layer.
- **Set mid-range in the filament profile, then compare with the slicer preset.** Prusa says PrusaSlicer sets the bed for the selected material, and recommends 60 °C for Prusament PLA. The fields are covered in changing bed temperature in the slicer.
- **Print a test with your real footprint.** A small square shows whether the first layer bonds. A large flat part shows whether the corners lift.
- **If it won't stick, go up 5 to 10 °C.** That's Prusa's step for new materials. Bambu adds 10 °C when the room is below 20 °C, and asks you to keep drafts away from the printer. Other lift fixes are on the warping page.
- **If the bottom edge flares, go down.** Try the low end of the range and set elephant foot compensation in the slicer.
- **Vent an enclosed printer for PLA above 45 °C.** Bambu asks you to open the door or lift the top glass, or the filament can soften in the extruder.
- **Save the value as your own preset.** Name it for the brand, plate and printer.

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