



Tech Lab

Prusa Printer Usage Notes

Some general notes and tips about using the Prusa printers.

Filaments

Things to remember about printer filaments:

- Prusa printers use 1.75mm diameter filament.
- It should be kept tightly wound on the spool.
- It should be stored in a dry location.

Main Filament Types

- PLA - easy to print, hard, lower-temperature, corn-starch based
- PETG - good for mechanical parts, less brittle, can be a little stringy
- TPU - flexible, sticks too well to beds so **use glue stick**

Secondary Filament Types

- Phosphorescent - abrasive on brass nozzle, use on hardened-nozzle printer
- ABS/ASA - strong, higher temperature, but needs ventilation and slower cooling
- Wood-filled: use only Hatchbox brand on 0.4mm nozzles, prefer hardened-nozzle.
- Carbon Fiber-filled: very abrasive on nozzle, use on hardened-nozzle printer.
- Nylon: use satin sheet beds at this time with glue interface

Further Information

For further info, consult [Prusa Materials Guides](#)

Some brands we've liked:

- Hatchbox, eSun, Prusa, tty3D, 3DSoluTech, Polymaker, Matterhackers, Protopasta, AmazonBasics (sometimes)

Current Printer Logistics

- Come in during Open Studio time
- Select an available printer
- Remove and stow any completed job on that printer
 - Printed object, filament, and SD Card
- Job submission is by SD-Card - BYO or use ours
 - TBD: or via OctoPrint if installed on the available printer.
- Stay around for 1st layer adhesion
 - Or convince someone to watch it for you
- Leave a card with your name and contact info

Caveats

- Start with a clean prepared bed for your material
- Do not arbitrarily swap the steel sheet with another printer
 - each printer has a named profile for the sheets its calibrated for
 - any change means switching to a different profile too
- Do not adjust Z-height settings w/o recording it in the log
 - But really ask why you need to do this in the first place?
 - (see Troubleshooting tips below)

Printer Bed Sheets

Care and maintenance of print bed sheets

Bed Sheet Usage Tips

- Smooth - good for PLA, usually too sticky for PETG
 - use Windex to clean it, or use glue stick interface layer
- Textured - good for PETG, okay for PLA (but more sensitive)
- Satin - good for all (use glue stick with PC or PA)
- All - for TPU use glue stick for ease of removal

Cleaning Tips

- Avoid fingerprints and other greases
- Clean sheet while cool
 - Isopropyl alcohol if printing with PLA
 - Windex™ if printing with PETG
 - Especially on smooth sheets!
 - Can use dish soap and water but must immediately dry
 - Sparingly on textured sheets
- never use acetone on non-smooth sheets
 - and even then only sparingly

Troubleshooting

- If a job fails - change something before trying it again.
 - Most commonly it's first layer adhesion.
 - Try cleaning the sheet first
 - Check first layer thickness, is it at least 0.2mm?
 - Temperature, filament, speed, or supports can also contribute.
 - reduce speed for 1st layer to 85%
 - increase bed temperature by 5°C
 - is it old filament?
 - is the filament coming off the spool correctly?

Checklists

Things to remember when using the printers

Removing a print job

- remove printed parts carefully when bed has cooled, set aside.
- preheat for the type of filament currently loaded, and unload it when hot.
- thread end of filament through holes in spool to keep it wound
- place part, filament, and user's card (if any) on the shelf by the window

Starting a print job

- ensure printer sheet is clean, and ready for printing
- visually inspect printer: is the hot end clear, any other issues?
- preheat for selected filament, load into extruder when it's ready
- keep letting it extrude more until your filament is extruding cleanly
- load part to be printed via SD-Card, USB stick, or OctoPrint (depending on printer)
- select part and start it printing
- observe and wait for print to start, be prepared to catch stray threads at start
- do not leave until the first layer has been successfully printed