Bambu Lab X1C Induction

Nov 7, 2026 · @Zac

Introduction

This booklet covers what you need to use the club's Bambu Lab X1C safely, without injury and without damaging the printer. It is used for both in-person and online inductions, and doubles as a quick reference.

It is deliberately short. Tips, advanced techniques and extended information belong in a separate companion document.

Safety

Fumes and ventilation

Ventilation is required whenever the printer is running. All 3D printing releases fumes and ultrafine particles. PLA and PETG emit little; ABS and Nylon emit noticeably more.

- Keep windows and/or doors open, and use a fan if needed.
- Don't put your face into the printer when a print finishes.
- If you can clearly smell melting plastic, improve ventilation.

Before printing higher-emission materials (ABS, ASA, Nylon), make sure others in the room are comfortable and agree. Options include:

- More ventilation
- Printing while the room is empty
- A respirator with P2/P3 particulate filtration and activated carbon
- A different material
- Coming back at another time if you can't reach agreement

Be practical, communicate, and don't expose others without their agreement.

Burns

Part	Typical temperature
Nozzle	200–300 °C
Bed	60–110 °C

Don't touch hot parts. Let the bed and plate cool before handling them.

Moving parts

Belts, rods and the toolhead move fast. Keep hands, hair and loose clothing clear while the printer is running.

Fire

The X1C has several built-in safety protections, so fire risk is low, but not zero.

- Keep flammable materials away from the printer.
- Long and overnight prints are allowed, but **you remain responsible for your print**.

What is an FDM 3D printer?

The X1C is a Fused Deposition Modelling (FDM) printer: a CNC machine that builds objects by adding melted plastic, one layer at a time.

A toolhead moves on three motorised axes (X, Y and Z). Inside it, a hot end melts plastic filament and the nozzle deposits it exactly where needed. Building layer by layer makes complex shapes possible, but brings limits you'll learn with experience.

You prepare a model in **slicing software**, which converts the 3D model into instructions the printer follows.

Materials

Default to PLA. Move to PETG or ABS only when you need more heat resistance.

Filament is 1.75 mm plastic wire, usually sold on 1 kg spools. Some brands, including Bambu Lab, sell refills so you can reuse a spool. If you buy your own, check the spool fits in the AMS (Automatic Material System); if it doesn't, you'll need to feed it externally.

Choosing between the three main filaments

Material	Choose it when	Difficulty	Enclosure door	Watch out for
PLA	Almost always — the default	Easy	Slightly open	Softens in heat (cars, direct sun)

Material	Choose it when	Difficulty	Enclosure door	Watch out for
PETG	You need more heat resistance but want easy printing	Moderate	Closed	Absorbs moisture; keep it dry
ABS	You need performance and are comfortable troubleshooting	Harder	Closed	Warping, shrinkage, parts detaching

Why the door matters for PLA: a hot enclosure can cause heat creep, which clogs the nozzle.

When printing ABS, watch the first layers. If a part detaches, the printer may not stop on its own, and **you are responsible for any damage your print causes**.

Choosing by post-processing

What you want to do	Use
Flexible parts	TPU (95A or firmer)
Acetone smoothing or chemical welding	ABS
Light drilling and tapping	PLA
Drilling, tapping and machining	ABS
Sanding, priming and painting	PLA, ABS
Heat-set inserts	PLA, PETG, ABS

"Strong" and "hard" are oversimplified. Design, print orientation and slicer settings often matter more than the material.

Approved materials

- PLA, including PLA+, PLA Pro and similar
- PETG
- ABS
- ASA
- TPU, 95A or firmer (see Shore hardness below)
- Nylon (PA)
- Carbon-fibre filled: PLA-CF, PETG-CF, ABS-CF

Anything not on this list needs the team's approval first. Don't test unknown or experimental materials.

Not permitted

- PVC or other chlorine-based plastics
- Polycarbonate (PC)
- Metal-filled filaments
- Wood-filled filaments
- Glow-in-the-dark filaments
- Flexible filaments softer than 95A

These either give off hazardous fumes, wear the printer quickly, or fail too often in a shared space.

About Shore A hardness

Shore A measures how soft a flexible material is. A lower number means softer.

Rating	Feel
95A	Firm but flexible, like a phone case
90A	Softer
85A	Very soft

Most printers handle 95A well. Softer than that tends to jam and feed poorly, which is why 95A is the cut-off. More: Shore durometer (Wikipedia).

If something goes wrong

If a print is failing, stop it and report it. **If the printer clogs or jams, don't try to fix it yourself** — report it to the team.

Filament care and fair use

Moisture

Most filament is **hygroscopic**: it absorbs moisture from the air. Wet filament shows up as:

- Small blobs on the surface (water boiling as the plastic comes out)
- More stringing

- Weaker layer adhesion

To keep filament dry:

- Open only the spools you're using.
- Store spools in an airtight container with silica packs.

Only a **filament dryer** can dry filament once it's wet. Silica packs keep dry filament dry, but won't dry wet filament, and they need re-drying once saturated. The club doesn't have a filament dryer, so we don't keep filament in long-term storage. We buy PLA in small batches (about four rolls) and load it straight into the AMS. PLA and the X1C tolerate a little moisture well.

Fair use of club filament

Club filament is there to help you get by. If you print regularly, or a project uses more than about **250 g**, bring your own.

Check filament before loading

Brittle filament jams the AMS and the extruder.

- Don't load filament that cracks or snaps when bent.
- If in doubt, ask the team.

Build plates

The build plate is the removable surface your print is built on. The X1C uses 250 mm square spring-steel plates with different surface coatings. Each plate sits on the heated bed, held magnetically against alignment tabs.

Plates only fit one way round. **If a plate overhangs or doesn't sit flat, remove it and reseat it.**

The plate:

- Helps the first layer stick (how well depends on the coating)
- Gives the bottom of your print its texture or finish
- Lets you pop the print off by flexing the plate once it's cool

Always let the bed and plate cool before handling or removing the plate.

Plates available at the club

Choose a plate based on your material, your slicer settings and the finish you want on the bottom of the part. Most plates are double-sided, often smooth on one side and textured on the other.

Official Bambu plates carry markings and a QR code the printer reads to catch mismatches. Aftermarket plates may be unlabelled, so ask the team if you're unsure. More: Bambu Lab plate guide.

Care and preparation

To be written.

Model orientation, overhangs and suitability

Orient your model for strength, and so it prints without supports if possible.

Strength depends on direction

FDM prints are **anisotropic**: strong within a layer (the X–Y plane), weaker between layers (Z). Parts usually break along layer lines. When you place a model in the slicer, think about the forces it will take and orient it so they don't pull layers apart.

Overhangs and supports

The printer can't print in mid-air. An overhang is any feature that sticks out past the layer below it, and overhangs have limits. Use supports only when you must, because they:

- Add print time and material
- Can be hard to remove
- Often leave marks or a rough surface

Not every model suits FDM

If a model needs lots of supports or looks awkward to print, it may need modifying before it will print well.

Printing

1. Choose a model and decide on a sensible print orientation.
2. Choose your filament and build plate.
3. Check the filament is loaded and the plate is in good condition and seated correctly.

4. Slice the model.
5. Send the print.
6. When it's done, remove the plate and release the print. Take care: the bed and plate may still be hot.

Loading filament into the AMS

Check the filament first (see *Check filament before loading*). Then follow Bambu Lab's guide: AMS setup and filament loading.