

DEPARTMENT OF ELECTRONIC AND ELECTRICAL ENGINEERING

EQUIPMENT SOP

Ensure you have a copy of the latest Manufacturers Data Sheets for the device/s,

Completed SOP should be kept locally in Red Safety Folder and made available to all persons working in the area.

SOP Title 3D Printing using Bambu printers	Version 1
Creation Date 13/04/2026	Produced by Mr Andrew Moss
Review Date 13/04/2027	Approved By Mr Gerald McBrearty

Purpose

The purpose of this document is to outline the safe procedures for 3d printers to manufacture plastic structures and parts.

Scope

The procedure provides general instructions on how to use a 3D printer.

Health and Safety precautions

Only laboratory technicians are to use the device.

The 3d printer operates using mains electrical power (240V), electric shock can occur if equipment is damaged or poorly maintained.

The 3d printer is enclosed, with filtered fume extraction and interlock on the access cover.

The 3d printer hot end can cause burns to skin if touched when printer running.

Some of the equipment is heavy requiring 2 people to carry/position. (see manual handling training).

Potential consequences of using the equipment. Electric shock. Trapped body parts in moving parts, can produce toxic fumes when plastic is in molten state.

Fume extraction must be used when in operation.

Materials

Desktop PC

Bambu 3D Printer (H2D, X1C and X1E)

Bofa Fume extraction unit (used with H2D)

Plastic Materials, 1.85mm Bambu certified filament. (PLA, ABS, PTEG, PLA-CF, Wood).

Standard Operating Procedure

Before use ensure the area and printer is clean, tidy and clear of anything which may interfere with the printer or extraction.

Visual checks must be made of the equipment for damage and has an approved/passed PAT label. (Report if damage found).

Make sure equipment is sited in a secure position and fume extraction attached.

Open the printer, wipe bed with IPA to clean and remove any waste or plastic remnants.

Turn on the printer and allow to boot and connect to WIFI.

Log on to a UCL networked PC and run the Bambu application.

Select the device and synchronise software to the printer.

Upload model, rotate model into position, set various functions. i.e. support, material type, layer thickness etc).

Slice the model, check printer is ready and send the print job to the 3d printer.

Once complete and the 3d printer returns to a home position.

Open the lid remove processed job.

Turn off the 3d printer, turn off fume extract, tidy and remove any waste material.

Othe procedures that need consideration

Some 3d prints can have rough/sharp edges which could cause small cuts to fingers.

Vigilance must be high, do not leave machine unmonitored when in use.

Printer uses high temperatures to produce the output, keep high flammable items away from the printers.

Some materials produce harmful vapours when processing. Use fume extraction.

Do not open the enclosure when machine is operating.

Any equipment failure or suspected failure to be reported/logged.

Injuries caused to be logged and investigated.

Fume extraction must be connected and fully operating.

Responsibilities

Technicians

Technician only operation

Visually inspecting area and equipment.

Supplying information and guidance as required.

PAT Testing and maintaining equipment.

Keeping area tidy.

Replacing faulty parts.

Acting upon reported issues.

Documents and References

Documents

- Bambu 3d printers, see data sheet in safety folder
- Bofa fume extraction, see safety folder laser section.
- PAT test information. See safety folder.

References\Links

Cleapss

[G276 - 3D Printing in Schools and Colleges Managing the Risks](#)

BSC

[Risk in 3D | British Safety Council](#)