

Polycarbonate printing

3DP-033 / REV A / 2026.09.01

Polycarbonate can provide useful toughness and heat resistance for demanding housings and prototypes. Pure PC and easier-printing PC blends can have substantially different requirements. A spool marked PC is not enough information to assign a universal profile. Dry before printing. Prusa's PC Blend drying example is 85°C for 5 hours, not a universal PC schedule. Confirm nozzle, bed, and chamber capability before slicing. If the spool requires temperatures above the machine's rating, select a verified compatible material rather than lowering the required temperature and assuming equivalent results. Use a suitable release layer where required to protect the build surface.

STATUS	Recovered/Partial
CLASSIFICATION	3DP
MATERIAL	3D PRINT / MAKER
DISPOSITION	PUBLIC / RECOVERED/PARTIAL
CATEGORY	3D Printing
RECORD TYPE	project

TECHNICAL NOTES

Polycarbonate can provide useful toughness and heat resistance for demanding housings and prototypes. Pure PC and easier-printing PC blends can have substantially different requirements. A spool marked PC is not enough information to assign a universal profile.

GOAL

Run the first test described in this guide and record the result for polycarbonate printing.

SOURCE STATE

Starting profile-awaiting Robert's retest; verify exact PC grade and machine limits

SETTINGS / STARTING POINT

NOZZLE / LAYER HEIGHT	0.4 / 0.20; 0.6 optional for larger parts
NOZZLE TEMPERATURE	275 for a compatible lower-temperature PC blend only; use exact product guidance

BED	Product-specific; Prusa's PC example calls for 110-115
OUTER WALL / OTHER EXTRUSION	25-35 / 35-50
FIRST LAYER	15-20
PART COOLING	Off initially; minimal targeted cooling where necessary
WALLS / INFILL	4-5 walls, 25-40% for the initial functional sample
ADHESION	PC-compatible plate treatment; 8-12 mm brim if geometry benefits
ENCLOSURE	Generally needed for demanding geometry; follow product requirements

PREPARATION / NOTES

Dry before printing. Prusa's PC Blend drying example is 85°C for 5 hours, not a universal PC schedule. Confirm nozzle, bed, and chamber capability before slicing. If the spool requires temperatures above the machine's rating, select a verified compatible material rather than lowering the required temperature and assuming equivalent results. Use a suitable release layer where required to protect the build surface.

EQUIPMENT

- FDM printer / slicer
- Slicer project
- Calipers or inspection method

MATERIALS

- Polycarbonate

METHOD / STEPS

1. Confirm printer, nozzle, plate, and material identity.
2. Start from the recorded profile or the slicer default for that material.
3. Print a small first-layer and geometry test before the full part.
4. Inspect adhesion, dimensions, surface, supports, and failure mode.
5. Save the successful project with temperatures, speeds, and revision notes.

THINGS TO WATCH FOR

Moisture can cause bubbles and weak extrusion. Warping and layer separation are common obstacles. A visually acceptable part can still be poorly bonded. Thick solid regions may concentrate shrinkage; more infill is not an automatic fix. Finished-part heat performance depends on formulation, geometry, loading, and processing.

FIRST TEST / WHAT TO RECORD

A short wall-and-corner sample followed by a hole-fit coupon, checking both bonding and dimensional change.

RESULT / WHERE THIS STANDS

A short wall-and-corner sample followed by a hole-fit coupon, checking both bonding and dimensional change.

TROUBLESHOOTING

- Moisture can cause bubbles and weak extrusion. Warping and layer separation are common obstacles. A visually acceptable part can still be poorly bonded. Thick solid regions may concentrate shrinkage; more infill is not an automatic fix. Finished-part heat performance depends on formulation, geometry, loading, and processing.

SPECIFICATION

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DEVELOPMENT HISTORY

2026.09.01 / Rev A

Imported as an independent manifest record; public copy keeps uncertainty visible.

REFERENCE NOTES

Prusa PC guide (https://help.prusa3d.com/article/polycarbonate-pc_165812), Prusa drying guide (https://help.prusa3d.com/article/drying-filament_332086).

HOW-TO SOURCES

Prusa PC guide

https://help.prusa3d.com/article/polycarbonate-pc_165812

Prusa drying guide

https://help.prusa3d.com/article/drying-filament_332086

RELEASED MATERIAL / SOURCE LINKS

3dp-033-public-summary.txt

PUBLIC SUMMARY / RECOVERED NOTES

<https://u225x.com/downloads/manifest-records/3dp-033-public-summary.txt>

RETURN TO THE LIVING RECORD

Polycarbonate printing

This PDF preserves the public notes at this revision. Visit the record for updates and attached images.

<https://u225x.com/record/3DP-033>