

# Flexible PLA printing

3DP-029 / REV A / 2026.09.01

Flexible PLA is sold for bendable parts that conventional rigid PLA cannot comfortably handle. Possible uses include sleeves, grips, bumpers, and compliant covers. The name does not establish its chemical formulation, hardness, elastic recovery, or equivalence to TPU 95A. Verify whether the spool is actually labeled flexible PLA, TPE, or another flexible blend before assigning a material preset. Do not use high-temperature drying without a product specification. Make two small sleeves with different wall counts: wall thickness often changes perceived flexibility more than a small infill change. Keep spool rotation easy and avoid unnecessary tube bends.

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

## TECHNICAL NOTES

Flexible PLA is sold for bendable parts that conventional rigid PLA cannot comfortably handle. Possible uses include sleeves, grips, bumpers, and compliant covers. The name does not establish its chemical formulation, hardness, elastic recovery, or equivalence to TPU 95A.

## GOAL

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

## SOURCE STATE

Starting profile-awaiting Robert's retest; exact CC3D product specifications needed

## SETTINGS / STARTING POINT

|                          |                                                                                    |
|--------------------------|------------------------------------------------------------------------------------|
| NOZZLE                   | 0.4 mm                                                                             |
| LAYER HEIGHT             | 0.20 mm                                                                            |
| NOZZLE / BED TEMPERATURE | Use the exact CC3D spool label or product datasheet; numerical values not verified |

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|                              |                                                                                              |
|------------------------------|----------------------------------------------------------------------------------------------|
| OUTER WALL / OTHER EXTRUSION | 20 / 25-30                                                                                   |
| FIRST LAYER                  | 15                                                                                           |
| PART COOLING                 | Begin with the product's recommendation; do not assume ordinary PLA settings                 |
| WALLS / INFILL               | 2-3 walls, 10-20% gyroid for a compliant sample                                              |
| RETRACTION                   | Short, conservative direct-drive setting; reduce if buckling or repeated feed failures occur |
| FEEDING                      | Short, low-resistance path; use external feed if the automatic system is not approved        |

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## PREPARATION / NOTES

Verify whether the spool is actually labeled flexible PLA, TPE, or another flexible blend before assigning a material preset. Do not use high-temperature drying without a product specification. Make two small sleeves with different wall counts: wall thickness often changes perceived flexibility more than a small infill change. Keep spool rotation easy and avoid unnecessary tube bends.

## EQUIPMENT

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

## MATERIALS

- PLA

## 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

Soft filament may buckle at the extruder or stretch in a resistant feed path. Excess retraction can worsen jams. Supports can be difficult to remove. More walls and dense infill make a flexible material feel rigid. A soft material can still tear at thin features or layer boundaries.

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## FIRST TEST / WHAT TO RECORD

A short open tube or grip sleeve at 20-30 mm/s. Check feeding, recovery after squeezing, and tearing at the seam.

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## RESULT / WHERE THIS STANDS

A short open tube or grip sleeve at 20-30 mm/s. Check feeding, recovery after squeezing, and tearing at the seam.

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## TROUBLESHOOTING

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## SPECIFICATION

|                              |                                                                                              |
|------------------------------|----------------------------------------------------------------------------------------------|
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## DEVELOPMENT HISTORY

2026.09.01 / Rev A

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

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## RELEASED MATERIAL / SOURCE LINKS

**3dp-029-public-summary.txt**

PUBLIC SUMMARY / RECOVERED NOTES

<https://u225x.com/downloads/manifest-records/3dp-029-public-summary.txt>

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## RETURN TO THE LIVING RECORD

**Flexible PLA printing**

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

<https://u225x.com/record/3DP-029>