

Press-brake test dies in PP

3DP-036 / REV A / 2026.09.01

Polypropylene is a candidate for low-marking tooling experiments, but its compliance and creep make dimensional control a major question. Prototype process reference only. Exact PP grade and machine-compatible printing profile remain unconfirmed.

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

TECHNICAL NOTES

Polypropylene is a candidate for low-marking tooling experiments, but its compliance and creep make dimensional control a major question.

GOAL

Run the first test described in this guide and record the result for press-brake test dies in pp.

SOURCE STATE

New reference guidance; not a recovered test result

PREPARATION / NOTES

Prototype process reference only. Exact PP grade and machine-compatible printing profile remain unconfirmed.

EQUIPMENT

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

MATERIALS

- PP

METHOD / STEPS

1. Define whether the part is a contact pad, supported insert or complete die; these impose different stresses.
2. Measure the required working profile and design a mechanically retained, supported sample. Do not rely on a smooth PP-to-holder adhesive joint without a validated bonding method.
3. Use the exact PP manufacturer's temperature and build-surface instructions. Print a short dimensional coupon before a large die; PP adhesion and shrinkage can dominate the result.
4. Under the approved test setup, measure loaded deflection and residual deformation after unloading. Repeat only within the approved test envelope.

THINGS TO WATCH FOR

PP is not a drop-in replacement for stiff carbon-fiber nylon. A part that springs back initially may creep with repeated loading. Heated-bed settings, shrink compensation and joint designs are product-specific.

FIRST TEST / WHAT TO RECORD

Reject a tool that shifts, spreads, loses profile or cannot repeat the required angle. Record time under load as well as cycles.

RESULT / WHERE THIS STANDS

Reject a tool that shifts, spreads, loses profile or cannot repeat the required angle. Record time under load as well as cycles.

TROUBLESHOOTING

- PP is not a drop-in replacement for stiff carbon-fiber nylon. A part that springs back initially may creep with repeated loading. Heated-bed settings, shrink compensation and joint designs are product-specific.

SAFETY / LIMITATIONS

- Use qualified judgment and current manufacturer or code guidance for safety-critical work.

SPECIFICATION

PRINTER	FDM printer / slicer
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MATERIAL	PP
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FOCUS	Tooling contact, wear, load direction, and sheet gauge
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VALIDATION

Small test print before release

DEVELOPMENT HISTORY

2026.09.01 / Rev A

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

REFERENCE NOTES

Formlabs rapid-tooling research (not a rating for these FDM dies)
(<https://formlabs.com/global/white-papers/how-to-do-rapid-tooling-for-sheet-metal-forming-with-3d-printed/>).

HOW-TO SOURCES

Formlabs rapid-tooling research (not a rating for these FDM dies)
<https://formlabs.com/global/white-papers/how-to-do-rapid-tooling-for-sheet-metal-forming-with-3d-printed/>

RELEASED MATERIAL / SOURCE LINKS

3dp-036-public-summary.txt

PUBLIC SUMMARY / RECOVERED NOTES

<https://u225x.com/downloads/manifest-records/3dp-036-public-summary.txt>

RETURN TO THE LIVING RECORD

Press-brake test dies in PP

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

<https://u225x.com/record/3DP-036>