

Press-brake test dies in polycarbonate

3DP-038 / REV A / 2026.09.01

Polycarbonate tooling experiments depend on the exact PC blend, moisture condition and layer bonding. A strong bulk-material datasheet does not certify an FDM die.

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

GOAL

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

SOURCE STATE

New reference guidance; not a recovered test result

EQUIPMENT

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

MATERIALS

- Polycarbonate

METHOD / STEPS

1. Identify the spool grade and confirm the printer can meet its nozzle, bed and chamber requirements.
2. Use 3DP-033 to print bonding and dimensional coupons. Dry and print the die only after the smaller samples are acceptable.
3. Have the tool support and force path assessed, including profile stress concentrations and the effect of layer orientation.

4. Run authorized trials with force and stroke limits defined by the tooling reviewer. Inspect the contact face, mounting and layer boundaries after each initial cycle.

THINGS TO WATCH FOR

Do not lower an incompatible product's required temperatures merely to fit the machine. Printed PC can fracture or delaminate despite an attractive outer surface. Annealing may move the working dimensions.

FIRST TEST / WHAT TO RECORD

Record blend, condition, geometry, machine setup and measured outcome together; never transfer a rating between unrelated PC products.

RESULT / WHERE THIS STANDS

Record blend, condition, geometry, machine setup and measured outcome together; never transfer a rating between unrelated PC products.

TROUBLESHOOTING

- Do not lower an incompatible product's required temperatures merely to fit the machine. Printed PC can fracture or delaminate despite an attractive outer surface. Annealing may move the working dimensions.

SAFETY / LIMITATIONS

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

SPECIFICATION

PRINTER	FDM printer / slicer
MATERIAL	Polycarbonate
FOCUS	Tooling contact, wear, load direction, and sheet gauge
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/>), Official help.prusa3d.com reference (https://help.prusa3d.com/article/polycarbonate-pc_165812).

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/>

Official help.prusa3d.com reference

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

RELEASED MATERIAL / SOURCE LINKS

3dp-038-public-summary.txt

PUBLIC SUMMARY / RECOVERED NOTES

<https://u225x.com/downloads/manifest-records/3dp-038-public-summary.txt>

RETURN TO THE LIVING RECORD

Press-brake test dies in polycarbonate

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

<https://u225x.com/record/3DP-038>