

Press-brake test dies in PA6-CF

3DP-035 / REV A / 2026.09.01

Use this record to plan and document experimental nylon-composite tooling. A printed die needs a defined load case and supported geometry; the material name alone does not establish capacity. Material profile: 3DP-034. No universal wall count, infill percentage or print temperature is specified for a load-bearing die.

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

TECHNICAL NOTES

Use this record to plan and document experimental nylon-composite tooling. A printed die needs a defined load case and supported geometry; the material name alone does not establish capacity.

GOAL

Run the first test described in this guide and record the result for press-brake test dies in pa6-cf.

SOURCE STATE

New reference guidance; not a recovered test result

PREPARATION / NOTES

Material profile: 3DP-034. No universal wall count, infill percentage or print temperature is specified for a load-bearing die.

EQUIPMENT

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

MATERIALS

- PA6-CF

METHOD / STEPS

1. Define actual sheet alloy, measured thickness, bend length, opening, punch radius and desired angle. Record the roughly 3-inch-tall concept as a design input, not a rating.
2. Have the load path, machine setup and restraint reviewed by a qualified tooling person. Support the plastic against lateral spreading and keep layer interfaces out of the principal splitting direction where possible.
3. Prepare PA6-CF using 3DP-034 and the exact spool datasheet. Print dimensional and bonding coupons before the die. Document orientation, walls, internal structure and drying history.
4. Conduct any authorized machine trial under the shop's guarded test procedure. Log force, stroke, angle, permanent deformation and cycle count; stop on cracking, delamination or shifting.

THINGS TO WATCH FOR

SUNLU PA6-CF 20% was recovered from purchase context, but successful die tests were not. Follow the current exact-product guidance in 3DP-034 and verify the spool label. No tonnage or 16-10 gauge capability has been established.

FIRST TEST / WHAT TO RECORD

A usable record includes before/after measurements and the actual tested load case. A single successful bend is not a production life rating.

RESULT / WHERE THIS STANDS

A usable record includes before/after measurements and the actual tested load case. A single successful bend is not a production life rating.

TROUBLESHOOTING

- SUNLU PA6-CF 20% was recovered from purchase context, but successful die tests were not. Follow the current exact-product guidance in 3DP-034 and verify the spool label. No tonnage or 16-10 gauge capability has been established.

SAFETY / LIMITATIONS

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

SPECIFICATION

PRINTER	FDM printer / slicer
MATERIAL	PA6-CF
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/>).

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-035-public-summary.txt

PUBLIC SUMMARY / RECOVERED NOTES

<https://u225x.com/downloads/manifest-records/3dp-035-public-summary.txt>

RETURN TO THE LIVING RECORD

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

<https://u225x.com/record/3DP-035>
