

Printed press-brake hem/round profile

3DP-039 / REV A / 2026.09.01

Use a CAD section to explore the required hem or rounded form before considering a printed tool. Hemming, air bending and bottoming have different contact conditions and force demands.

STATUS	Starting Point
CLASSIFICATION	3DP
MATERIAL	3D PRINT / MAKER
DISPOSITION	PUBLIC / STARTING POINT
CATEGORY	3D Printing
RECORD TYPE	print-profile

GOAL

Run the first test described in this guide and record the result for printed press-brake hem/round profile.

SOURCE STATE

New reference guidance; not a recovered test result

EQUIPMENT

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

MATERIALS

- Material requires confirmation

METHOD / STEPS

1. Measure the desired finished cross-section, material thickness, clearance and flange length. Distinguish an open hem from a closed hem or a rolled profile.
2. Model the sheet and tool sections together, including the approach and withdrawal path. Check for trapped geometry and interference through the entire stroke.
3. Print an unloaded profile mock-up to check fit and handling. Keep this geometry-check specimen separate from any tooling authorized to carry load.

4. For an actual forming trial, obtain a process-specific load and tooling review; document each forming stage independently.

THINGS TO WATCH FOR

A tool that performs a simple V-bend cannot be presumed suitable for flattening a hem. Contact pressure can rise sharply as a hem closes. Do not infer a machine stroke or capacity from the appearance of the print.

FIRST TEST / WHAT TO RECORD

The deliverable is a section drawing, interference review and test plan with measured outcomes if testing occurs.

RESULT / WHERE THIS STANDS

The deliverable is a section drawing, interference review and test plan with measured outcomes if testing occurs.

TROUBLESHOOTING

- A tool that performs a simple V-bend cannot be presumed suitable for flattening a hem. Contact pressure can rise sharply as a hem closes. Do not infer a machine stroke or capacity from the appearance of the print.

SAFETY / LIMITATIONS

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

SPECIFICATION

PRINTER	FDM printer / slicer
MATERIAL	Material requires confirmation
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-039-public-summary.txt

PUBLIC SUMMARY / RECOVERED NOTES

<https://u225x.com/downloads/manifest-records/3dp-039-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-039>
