

Sheet-metal material template and K-factor 0.44/0.5

CAD-046 / REV A / 2026.09.01

Treat 0.44 and 0.5 as previously discussed candidate K-factors, not universal material constants. Work on a copy first. Record application version, units and active document/configuration. Names below identify the catalogued workflow; they do not claim a particular button layout or verified implementation.

STATUS	Recovered/Partial
CLASSIFICATION	CAD
MATERIAL	CAD / AUTOMATION
DISPOSITION	PUBLIC / RECOVERED/PARTIAL
CATEGORY	CAD / Scanning / Automation
RECORD TYPE	how-to

TECHNICAL NOTES

Treat 0.44 and 0.5 as previously discussed candidate K-factors, not universal material constants.

GOAL

Run the first test described in this guide and record the result for sheet-metal material template and k-factor 0.44/0.5.

SOURCE STATE

Operational reference/specification; original rule or add-in source not inspected

PREPARATION / NOTES

Work on a copy first. Record application version, units and active document/configuration. Names below identify the catalogued workflow; they do not claim a particular button layout or verified implementation.

EQUIPMENT

- CAD / automation tool
- Representative test model
- Measurement or inspection method

METHOD / STEPS

1. Set actual material thickness, bend radius, relief style and units in the sheet-metal rule/template.
2. Select a K-factor or bend table based on the shop's measured process. For the neutral-axis model, bend allowance equals angle in radians times (inside radius + $K \times$ thickness).
3. Make a test coupon and compare measured formed dimensions to the predicted flat.
4. Adjust the process-specific rule from evidence and label its material, tooling and revision.

THINGS TO WATCH FOR

Changing K affects developed length but cannot correct every bend-process error. Air bending, bottoming, thickness variation and tooling affect calibration.

FIRST TEST / WHAT TO RECORD

A documented coupon reproduces the required finished dimensions; preserve separate rules when processes differ.

RESULT / WHERE THIS STANDS

A documented coupon reproduces the required finished dimensions; preserve separate rules when processes differ.

TROUBLESHOOTING

- Changing K affects developed length but cannot correct every bend-process error. Air bending, bottoming, thickness variation and tooling affect calibration.

SPECIFICATION

TOOL PATH	CAD / automation tool
DELIVERABLE	HOW-TO
VALIDATION	Representative model / known dimension
STATUS	Recovered/Partial

DEVELOPMENT HISTORY

2026.09.01 / Rev A

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

REFERENCE NOTES

Autodesk reference (<https://aps.autodesk.com/developer/overview/inventor-api>).

HOW-TO SOURCES

Autodesk reference

<https://aps.autodesk.com/developer/overview/inventor-api>

RELEASED MATERIAL / SOURCE LINKS

cad-046-public-summary.txt

PUBLIC SUMMARY / RECOVERED NOTES

<https://u225x.com/downloads/manifest-records/cad-046-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/CAD-046>