

TP N ° 2 Forming of Flat Products (Folding Process)

1. Objective of the TP

Folding is a process of plastic deformation of flat products using a folding press or a folding press so as to form finished or semi-finished products with folds; for this purpose the objective of this practical work is:

- Describe the different steps of manufacturing the part:
 - ✓ Justification for the different calculation phases;
 - ✓ Choice of manufacturing range;
 - ✓ Control and interpretation.
- Question of reflection:
 - ✓ Material selection criteria;
 - ✓ Selection of suitable equipment.

To this end, it is necessary to determine:

- ❖ The developed length L;
- ❖ Folding sequences or order of folds;
- ❖ Positioning of folding linens;
- ❖ The J% game;
- ❖ The folding angle with consideration of the elastic return;
- ❖ The tightening pressure.

2. Need for materials and equipment:

- ✓ **Flat products:**
 - These are sheets made of high formability materials (A%)



- ✓ **Machines -mulls**



- Cutting machine tools

A guillotine shear allowing the cutting of the sheet in accordance with the desired dimensions for the finished piece (from the drawing of the piece)

- ✓ **Machine tools for folding**

A press folder ensuring the clamping of the sheet (non-deformed part) by the application of a contact pressure (table-piece-bed), compatible with the dimensions of the sheet (thickness "e" and length "L".

3. Accessories

- These are the control elements of the finished piece (the graduated ruler, point to draw, reporter, sliding foot, wedges, square).

Development of the manufacturing range

This phase integrates the determination of the developed length, the positioning of the folding lines, the calculation of the clearance, the calculation of the folding angle with account being taken of the elastic return and the determination of the sequences of production of different folds and also the determination of the tightening pressure.