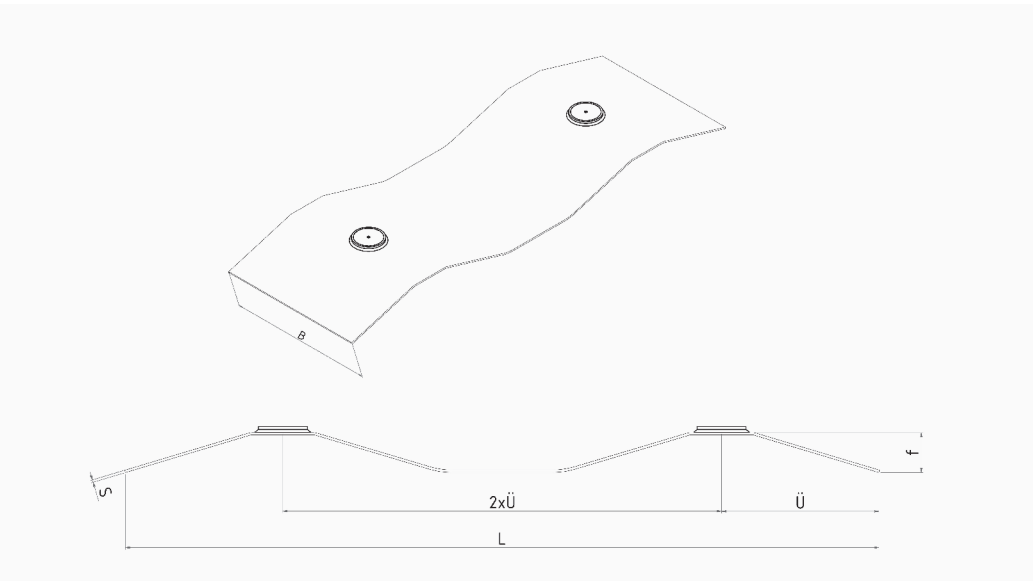


Board handling

Technical design

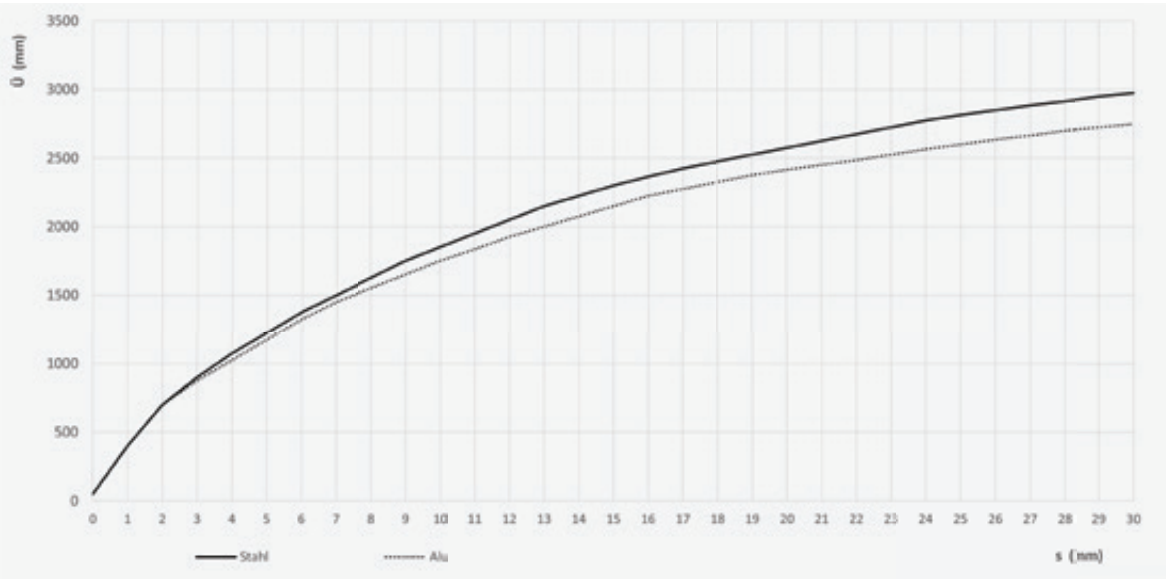
Board projection

The correct design of a vacuum lifter is crucial and ensures sufficient safety. First and foremost, the permissible overhang, especially for thin-walled workpieces, must be taken into account. If this is too large, the material will sag undesirably, which in turn can put too much strain on individual suction pads.



- 1 L = board length
- 2 B = board width
- 3 U = permitted overhang
- 4 f = sag deflection
- 5 S = board thickness

Overhang and deflection of plate material during suction



Schnellauswahltabelle für zulässige Überhänge

Board handling

Technical design

Overhang table

In some cases, the deflection of the plate material must be known exactly, e.g. to get past interfering edges or machine parts. The following table is used for this purpose, which gives approximate deflection values for steel, aluminum, wood and glass panels depending on the panel thickness and the overhang.

Deflection f as a function of plate thickness and plate overhang

| Overhang (mm) / Sheet thickness (mm) | 100 | 200 | 300 | 400 | 500 | 600 | 800 | 1.000 | 1.250 | 1.500 | 2.000 | 2.500 | 3.000 |
|--------------------------------------|-----|-----|-----|-----|-----|-----|-----|-------|-------|-------|-------|-------|-------|
| 0,5 | 5 | 25 | 75 | 250 | 500 | | | | | | | | |
| 1 | | | 5 | 10 | 20 | 50 | 200 | 500 | | | | | |
| 2 | | | | | 5 | 10 | 50 | 150 | 400 | | | | |
| 3 | | | | | | 5 | 20 | 75 | 200 | 500 | | | |
| 4 | | | | | | | 10 | 40 | 100 | 250 | | | |
| 6 | | | | | | | 5 | 20 | 45 | 125 | 500 | | |
| 8 | | | | | | | | 10 | 30 | 75 | 300 | | |
| 10 | | | | | | | | 5 | 20 | 50 | 200 | 500 | |
| 12 | | | | | | | | | 10 | 30 | 125 | 400 | |
| 15 | | | | | | | | | 7,5 | 20 | 75 | 250 | |
| 20 | | | | | | | | | 5 | 10 | 50 | 150 | 350 |
| 25 | | | | | | | | | | 5 | 30 | 75 | 250 |
| 30 | | | | | | | | | | 2,5 | 20 | 40 | 150 |

Number of suction cups

From the overhang values, the number of required suction pads can be roughly determined as follows:

Number in length $n_l = L / (2 \times U)$

Number in width $n_b = B / (2 \times U)$

Total number $n_G = n_l \times n_b$