

## Veralite® - Bending

### 1) Cold bending :

Veralite® can be bended up to angles of 90° or less. Keep in mind that internal stress is proportional to the inclination of the angle.

For example, the impact strength of a 45° angle will be lower than a 90° angle.

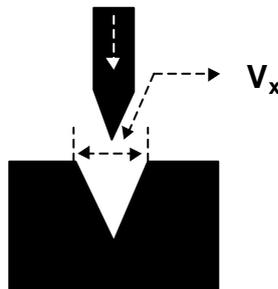
When bending you should keep the sheets at room temperature : above 15°C.

Also keep in mind that there will occur a backbend of app. 5° before stabilisation of the cold bend.

Bowing : minimum radius = 150 x the sheet thickness

Practical guidelines to obtain angles of 90° :

Bending speed in mm/sec.	Veralite <sup>o</sup> 100	Veralite <sup>o</sup> 200
Sheet thickness ≤ 1,0 mm	V <sub>12</sub> = 5-8mm/sec	V <sub>12</sub> = 5-8mm/sec
Sheet thickness ≤ 2,0 mm	V <sub>12</sub> = 2-4mm/sec V <sub>20</sub> = 3-6mm/sec	V <sub>12</sub> = 2-4mm/sec V <sub>20</sub> = 3-6mm/sec
Sheet thickness ≤ 4,0 mm	V <sub>30</sub> = 1-3mm/sec V <sub>40</sub> = 2-4mm/sec	V <sub>30</sub> = 1-3mm/sec V <sub>40</sub> = 2-4mm/sec
Sheet thickness ≤ 6,0 mm	- -	V <sub>40</sub> = 0,5-1mm/sec V <sub>50</sub> = 1-1,5mm/sec



### Remarks :

Proper testing is advised for cold bending of sheets of thickness > 2 mm. (internal stress level too high) Cold bending of shorn and diecut sheets is harder than for sawn sheets.

We don't advise to cold bend sheets that are shorn/diecut at following thicknesses :

Veralite 100 in > 1,5 mm - Veralite 200 in > 2 mm

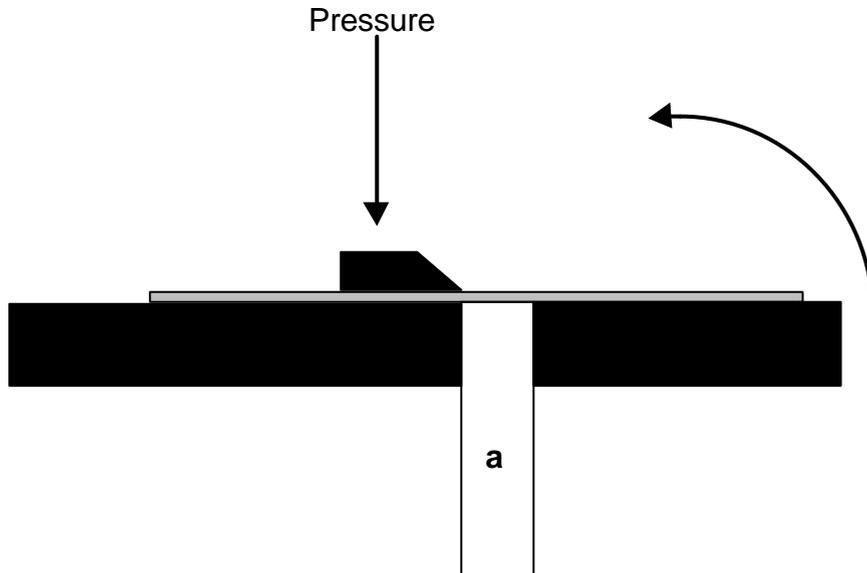
Cold bending of printed sheets requires proper testing before production.  
Cold bending of lasercut sheets is not possible.

If you use a bending table instead of bending tools, following advice :

- machine adjustment for thickness (a) is  $\pm 2,5 \times$  sheet thickness.
- bending with a bending table is less critical so thicknesses up to 4 mm can be used.
- for thicker sheets we advise proper testing.

Practical guidelines to obtain angles of 90° :

Cycle time in sec.	Veralite <sup>®</sup> 100	Veralite <sup>®</sup> 200
Sheet thickness < 2 mm	2-5 sec.	2-5 sec.
Sheet thickness < 4 mm	5-10 sec.	5-10 sec.
Sheet thickness < 6 mm	-	10-18 sec.



## 2) Hot bending :

Veralite<sup>®</sup> can be bent on a small radius by preheating one or both sides of the sheet.  
Predrying of the sheet is not required.  
Heating elements as electric strip heaters, quartz tubes, ... can be used.

Following guidelines for hot bending :

	Veralite <sup>o</sup> 100	Veralite <sup>o</sup> 200
Sheet temperature	105°C-110°C	105°C-110°C
Heating on one side possible till ...	1,5 mm	2,0 mm
Avoid heating above ...	130°C	150°C
Avoid hot bending under ...	100°C	100°C

Adapt the surface to be heated, to the thickness of the sheet and the radius of the desired angle.

Bend the sheet when you still feel some stiffness/resistance in the sheet.

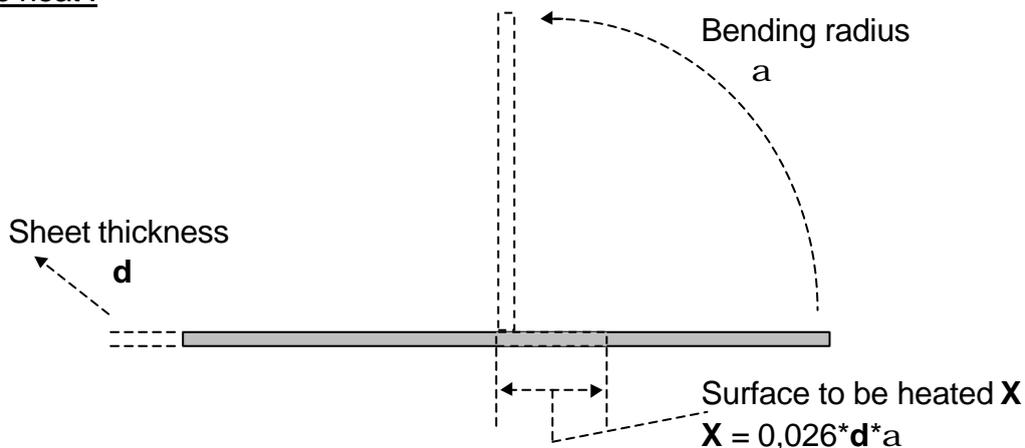
If Veralite<sup>®</sup> 100 is heated at temperatures that are too high, crystallisation will occur.

If no sandwich heating is available, turn the sheet periodically during the heating cycle.

Always bend the sheet with the heated side forming the outside radius.

If inner angles are below 45°, the masking film should be removed on the inner side.

Surface to heat :



Please calculate as follows :

For angles  $< 135^\circ$  :  $X = 4 \times$  sheet thickness

For angles  $> 135^\circ$  :  $X = 2 \times$  sheet thickness

---

*All above information is based on current knowledge and experience. The data does not imply any warranty from the manufacturer towards third parties. Users should consider the above data as a guideline and gather additional information, to make independant decisions regarding the proper use, disposal, safety towards other parties and the protection of the environment.*

*For more specific information, please feel free to contact our technical department :*

**I.P.B. nv**  
**Steenovenstraat 30**  
**8790 Waregem**  
**BELGIUM**  
**Tel.+32.56.60.79.19**  
**Fax +32.56.61.08.85**