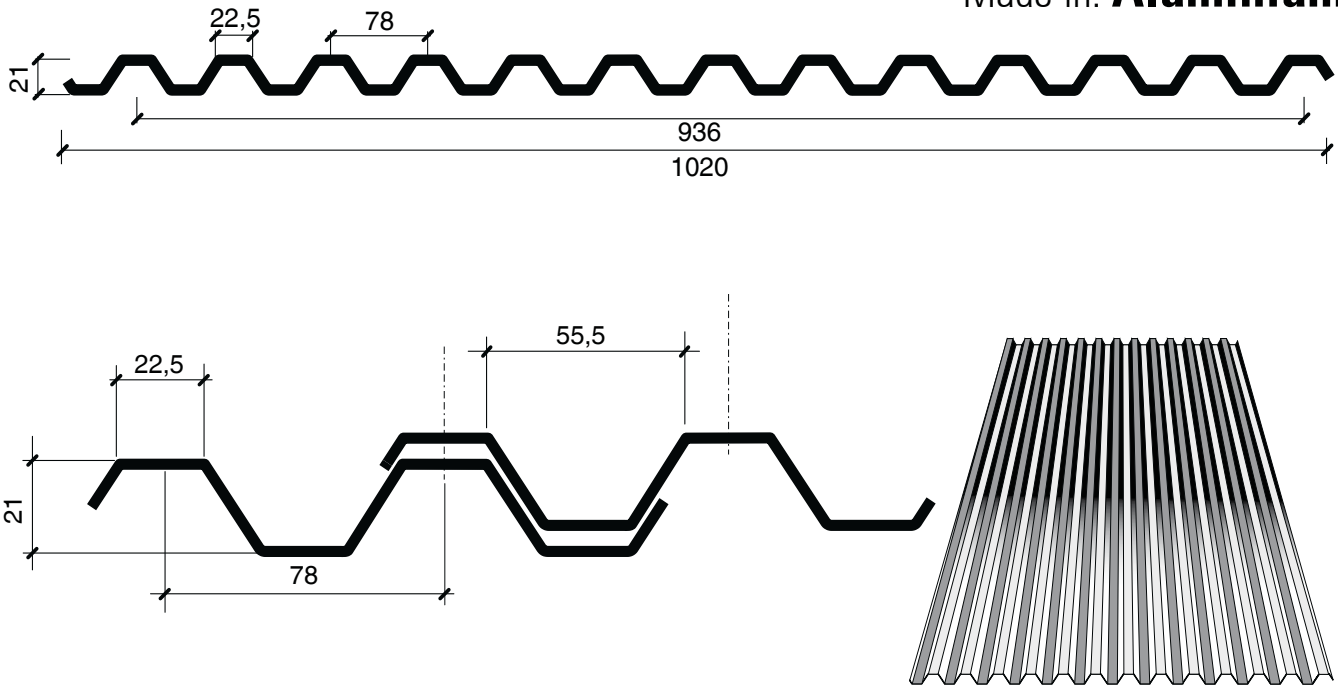


**PROFILO**  
*Alubel* **21**

# Alubel 21 profile

TECHNICAL DATA SHEET

 Made in: **Aluminium**


## TECHNICAL SPECIFICATIONS OF THE ALUBEL 21 ALUMINIUM PROFILE

| s    | p                    | J                    | W                    | EJ                      | M max     | <b>Symbols</b><br>s = sheet thickness<br>p = unit weight<br>J = moment of inertia<br>W = modulus of bending resistance<br>EJ = bending stiffness<br>M max = permitted bending moment<br>( $\sigma_{perm.} = 6,5 \text{ kN/cm}^2$ )<br>i = centre distance between supports<br>$\sigma_{perm.}$ = unit safety load<br>f perm. = maximum permitted straining |
|------|----------------------|----------------------|----------------------|-------------------------|-----------|--|
| [mm] | [kg/m <sup>2</sup> ] | [cm <sup>4</sup> /m] | [cm <sup>3</sup> /m] | [kN cm <sup>2</sup> /m] | [kN cm/m] |  |
| 0,5  | 1,72                 | 4,20                 | 3,64                 | 28.938                  | 23,66     |  |
| 0,6  | 2,07                 | 5,04                 | 4,92                 | 34.725                  | 31,98     |  |
| 0,7  | 2,41                 | 5,88                 | 5,74                 | 40.513                  | 37,31     |  |
| 0,8  | 2,75                 | 6,72                 | 6,56                 | 46.301                  | 42,64     |  |
| 1,0  | 3,44                 | 8,41                 | 8,20                 | 57.945                  | 53,30     |  |

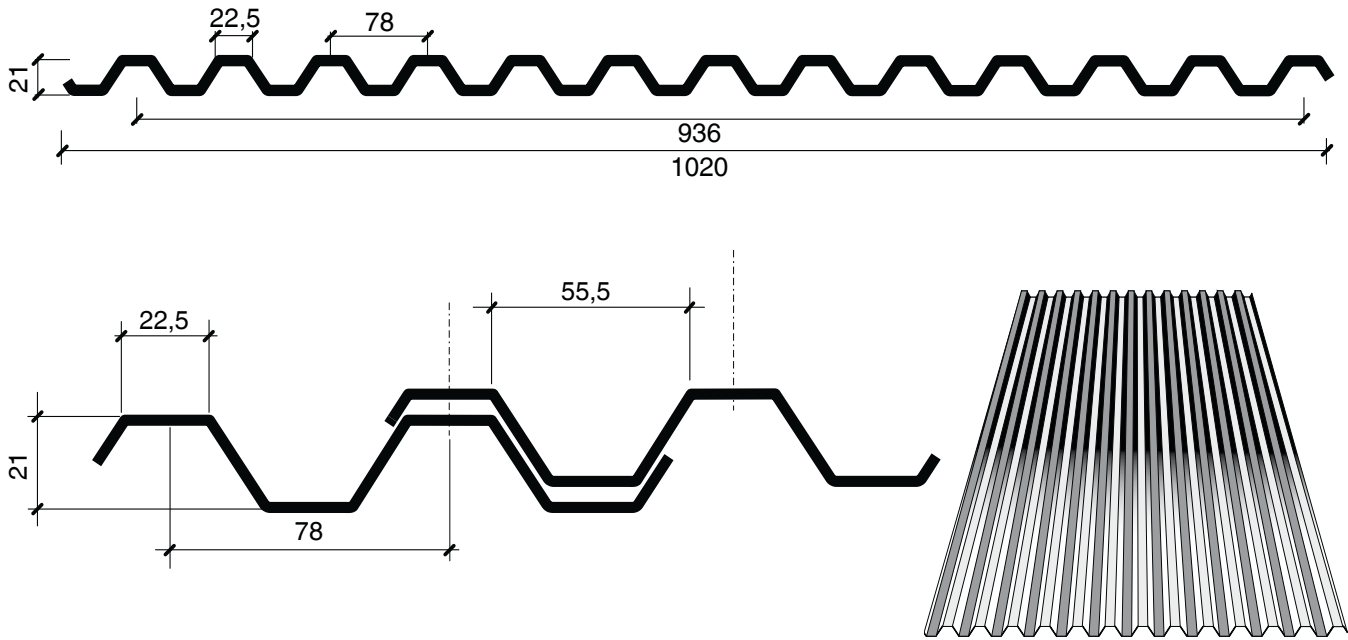
## PERMITTED UNIFORM LOAD [kg/m<sup>2</sup>] ON 4 SUPPORTS\*

| i [m] | 1,00            |            | 1,20            |            | 1,40            |            | 1,60            |            | 1,80            |            |
|-------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|
|       | $\sigma_{perm}$ | $f_{perm}$ | $\sigma_{perm}$ | $f_{perm}$ | $\sigma_{perm}$ | $f_{perm}$ | $\sigma_{perm}$ | $f_{perm}$ | $\sigma_{perm}$ | $f_{perm}$ |
| 0,5   | 241             | 189        | 167             | 109        | 123             | 69         | 94              | 46         | 74              | 32         |
| 0,6   | 326             | 227        | 226             | 131        | 166             | 83         | 127             | 55         | 101             | 39         |
| 0,7   | 380             | 264        | 264             | 153        | 194             | 96         | 148             | 65         | 117             | 45         |
| 0,8   | 434             | 302        | 302             | 175        | 222             | 110        | 170             | 74         | 134             | 52         |
| 1,0   | 543             | 378        | 377             | 219        | 277             | 138        | 212             | 92         | 167             | 65         |

\*(it is calculated in the dual hypothesis of  $\sigma_{perm.} = 6,5 \text{ kN/cm}^2$  and  $f_{perm.} = i/200$ )

The contents of this calculation table are to be considered approximate and purely indicative. The structural calculation is the task of the designer and/or user in each single case that also has to determine the application design specifications for the roofing in question

# Alubel 21 profile

 Made in: **Steel**


TECHNICAL DATA SHEET

## TECHNICAL SPECIFICATIONS OF THE ALUBEL 21 STEEL PROFILE

| s    | p                    | J                    | W                    | EJ                      | M max     | <b>Symbols</b><br>s = sheet thickness<br>p = unit weight<br>J = moment of inertia<br>W = modulus of bending resistance<br>EJ = bending stiffness<br>M max = permitted bending moment<br>( $\sigma_{perm.} = 13,73 \text{ kN/cm}^2$ )<br>i = centre distance between supports<br>$\sigma_{perm.}$ = unit safety load<br>f perm. = maximum permitted strain |
|------|----------------------|----------------------|----------------------|-------------------------|-----------|---|
| [mm] | [kg/m <sup>2</sup> ] | [cm <sup>4</sup> /m] | [cm <sup>3</sup> /m] | [kN cm <sup>2</sup> /m] | [kN cm/m] |   |
| 0,5  | 4,91                 | 4,20                 | 3,64                 | 86.520                  | 49,98     |   |
| 0,6  | 5,90                 | 5,04                 | 4,92                 | 103.824                 | 67,55     |   |
| 0,7  | 6,88                 | 5,88                 | 5,74                 | 121.128                 | 78,81     |   |
| 0,8  | 7,86                 | 6,72                 | 6,56                 | 138.432                 | 90,07     |   |
| 1,0  | 9,83                 | 8,41                 | 8,20                 | 173.246                 | 112,59    |   |

## PERMITTED UNIFORM LOAD [kg/m<sup>2</sup>] ON 4 SUPPORTS\*

| i [m]  | 1,00            |                   | 1,25            |                   | 1,50            |                   | 1,75            |                   | 2,00            |                   | 2,25            |                   | 2,50            |                   | 2,75            |                   | 3,00            |                   |
|--------|-----------------|-------------------|-----------------|-------------------|-----------------|-------------------|-----------------|-------------------|-----------------|-------------------|-----------------|-------------------|-----------------|-------------------|-----------------|-------------------|-----------------|-------------------|
| s [mm] | $\sigma_{perm}$ | f <sub>perm</sub> | $\sigma_{perm}$ | f <sub>perm</sub> | $\sigma_{perm}$ | f <sub>perm</sub> | $\sigma_{perm}$ | f <sub>perm</sub> | $\sigma_{perm}$ | f <sub>perm</sub> | $\sigma_{perm}$ | f <sub>perm</sub> | $\sigma_{perm}$ | f <sub>perm</sub> | $\sigma_{perm}$ | f <sub>perm</sub> | $\sigma_{perm}$ | f <sub>perm</sub> |
| 0,5    | 510             | 564               | 326             | 289               | 226             | 167               | 166             | 105               | 127             | 71                | 101             | 50                | 82              | 36                | 67              | 27                | 57              | 21                |
| 0,6    | 689             | 677               | 441             | 347               | 306             | 201               | 225             | 126               | 172             | 85                | 136             | 59                | 110             | 43                | 91              | 33                | 77              | 25                |
| 0,7    | 804             | 790               | 514             | 405               | 357             | 234               | 262             | 147               | 201             | 99                | 159             | 69                | 129             | 51                | 106             | 38                | 89              | 29                |
| 0,8    | 918             | 903               | 588             | 462               | 408             | 268               | 300             | 169               | 230             | 113               | 181             | 79                | 147             | 58                | 121             | 43                | 102             | 33                |
| 1,0    | 1.148           | 1.130             | 735             | 579               | 510             | 335               | 375             | 211               | 287             | 141               | 227             | 99                | 184             | 72                | 152             | 54                | 128             | 42                |

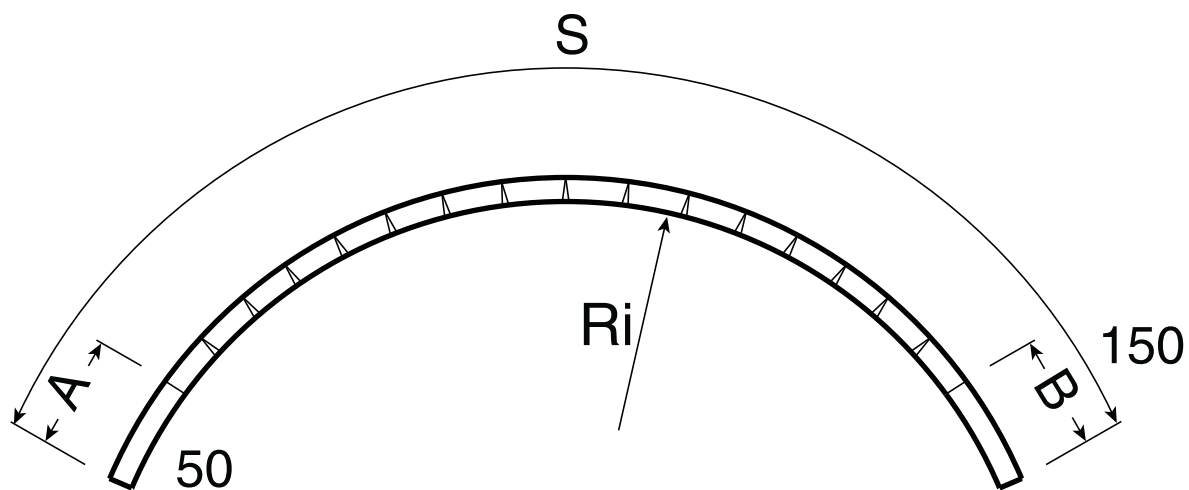
\*(it is calculated in the dual hypothesis of  $\sigma_{perm.} = 1.400 \text{ kg/cm}^2 = 13,73 \text{ kN/cm}^2$  and  $f_{perm.} = i/200$ )

The contents of this calculation table are to be considered approximate and purely indicative. The structural calculation is the task of the designer and/or user in each single case that also has to determine the application design specifications for the roofing in question

# Alubel 21 profile

SHEET TOOLING

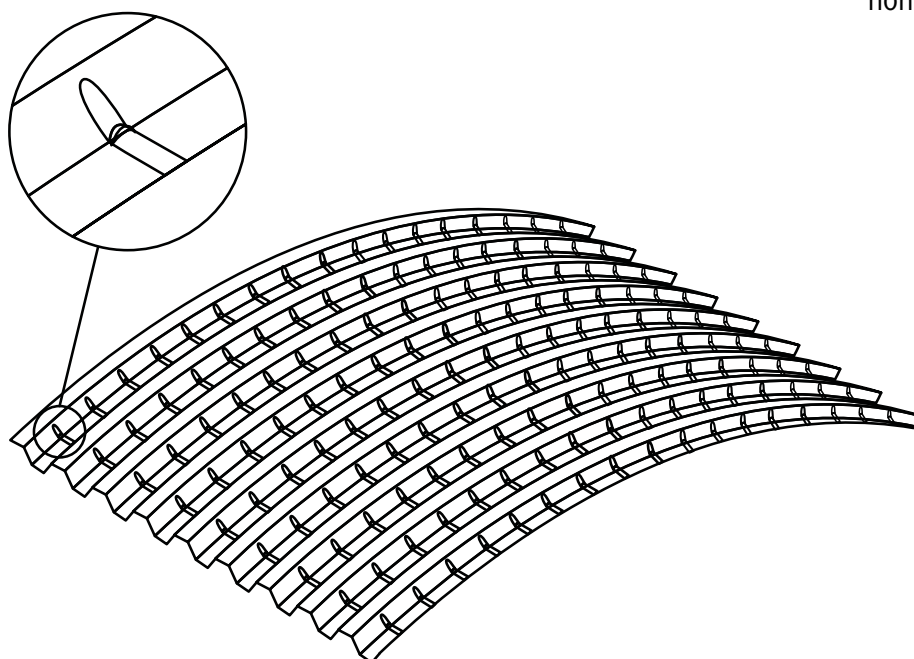
## UNIFORM CURVATURE BY NOTCHING



## UNIFORM CURVATURE BY NOTCHING

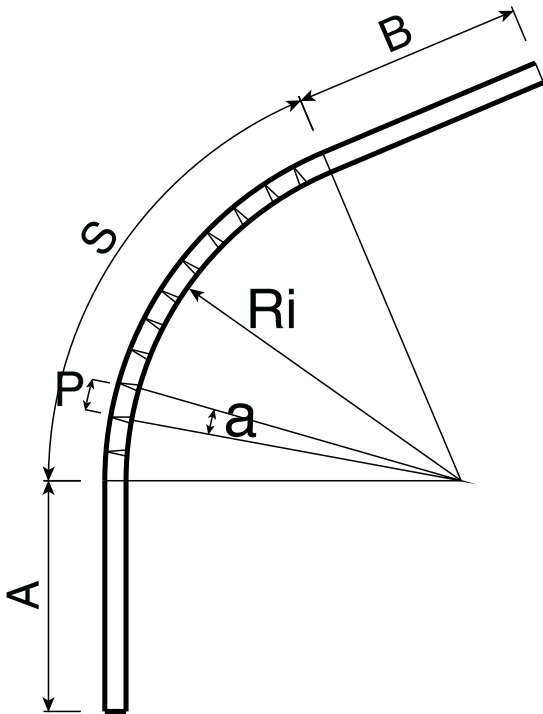
| Ri            | S max sheet length |                 |
|---------------|--------------------|-----------------|
|               | aluminium          | other materials |
| 1 m           | max 3 m            | max 3 m         |
| from 2 to 3 m | max 4 m            | max 4 m         |
| from 3 to 4 m | max 5 m            | max 5 m         |
| from 4 to 6 m | max 6 m            | max 6 m         |
| from 6 to 7 m | max 8 m            | max 8 m*        |

\* non standard toolings



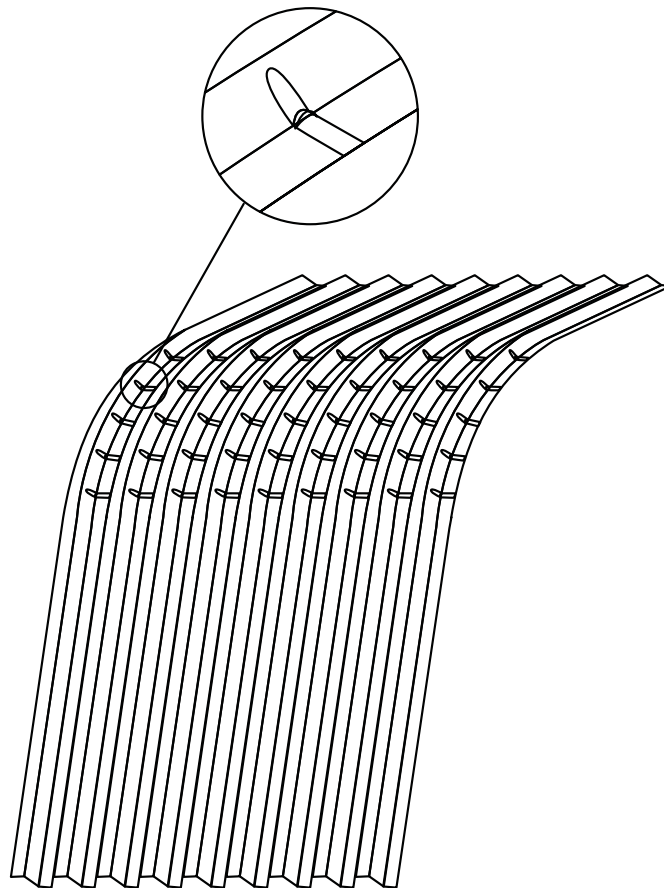
# Alubel 21 profile

## PARTIAL CURVATURE BY NOTCHING



| Symbols |                                     |                    |
|---------|-------------------------------------|--------------------|
| A       | initial section                     | min 50 max 2000 mm |
| B       | end section                         | min 50 max 2000 mm |
| S       | curve development                   | min 100 mm         |
| A+B+S   | total development (aluminium)       | max 5000* mm       |
| A+B+S   | total development (other materials) | max 5000* mm       |
| Ri      | inside radius                       | min 230 mm         |
| P       | impression distance                 | min 25 mm          |
| a       | deflection angle                    | min 1° max 6°      |

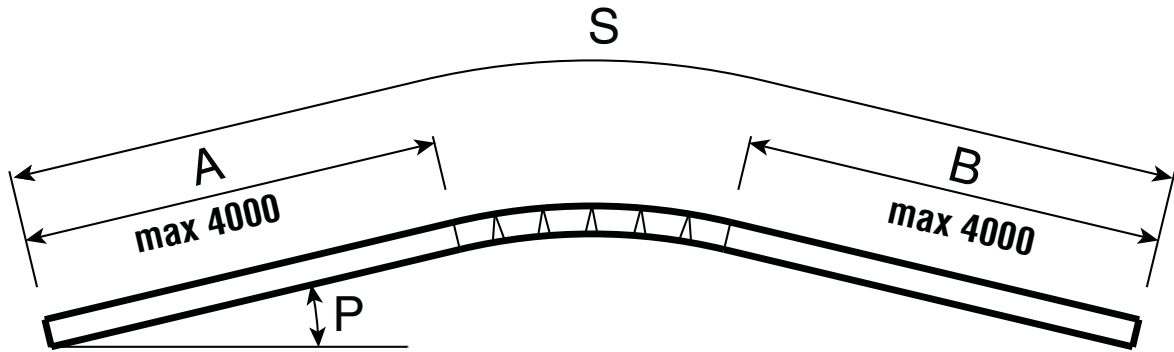
\* total variable development based on the inside radius



# Alubel 21 profile

## NOTCHING IN THE MIDDLE

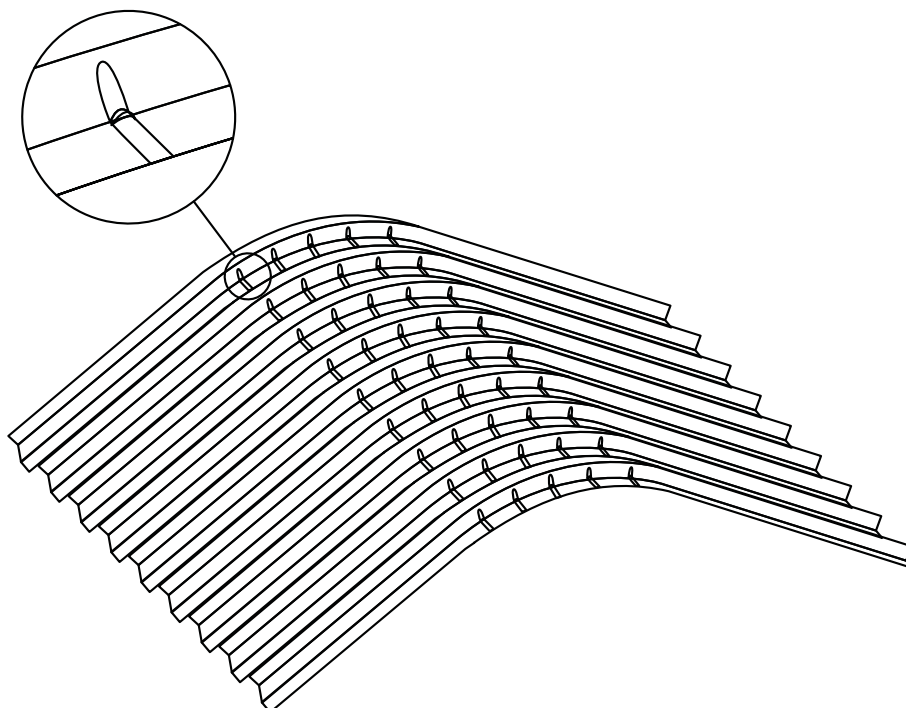
SHEET TOOLING



Sheet curved only in the centre to form the ridge and the joining of two pitches (achieved by means of a set of impressions in the middle of the sheet).

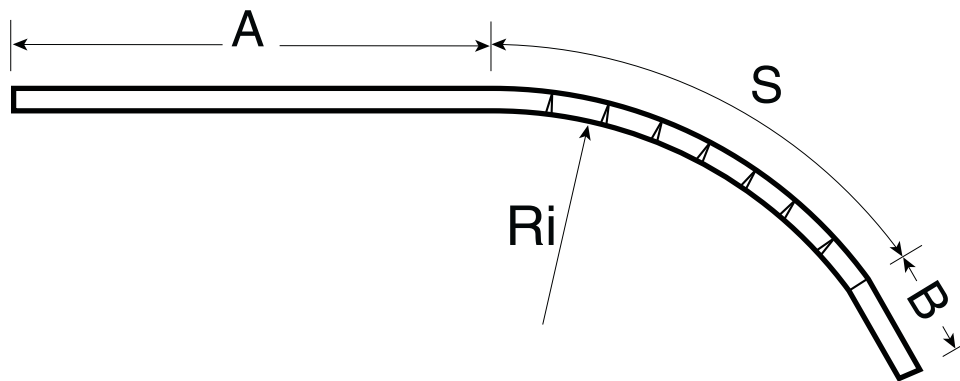
The length of the straight segments A and B varies from a minimum of 50 mm to a maximum of 4000 mm.

| P              | S max sheet length |                 |
|----------------|--------------------|-----------------|
|                | aluminium          | other materials |
| from 6 to 12%  | max 9 m            | max 6 m         |
| from 12 to 15% | max 8 m            | max 6 m         |
| from 15 to 20% | max 6 m            | max 6 m         |
| from 20 to 25% | max 4 m            | max 4 m         |



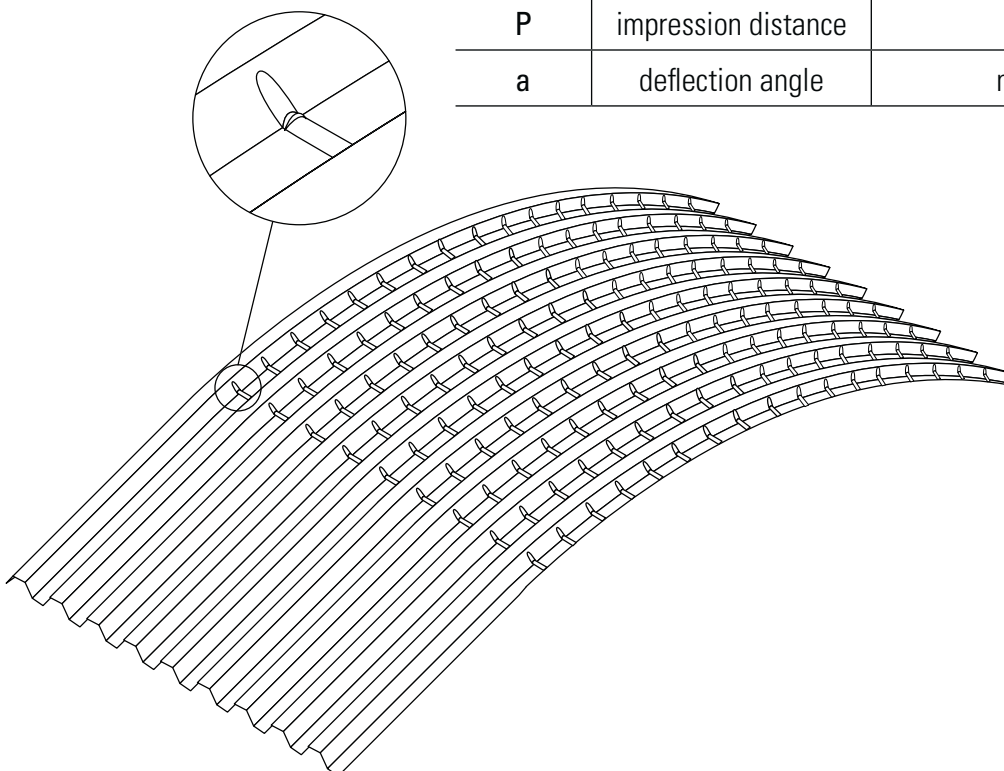
# Alubel 21 profile

## LATERAL NOTCHING



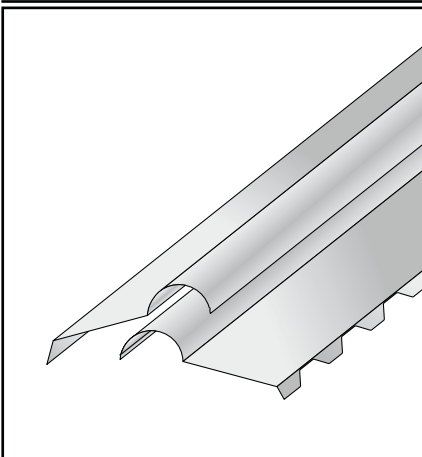
| Symbols |                                     |                                |
|---------|-------------------------------------|--------------------------------|
| A       | initial section                     | min 50 max 2000 mm             |
| B       | end section                         | min 50 max 8000 mm             |
| S       | curve development                   | min 400 mm based on the radius |
| A+B+S   | total development (aluminium)       | max 8000 mm                    |
| A+B+S   | total development (other materials) | max 8000 mm*                   |
| Ri      | inside radius                       | min 230 mm                     |
| P       | impression distance                 | min 25 mm                      |
| a       | deflection angle                    | min 1° max 6°                  |

\* non standard toolings

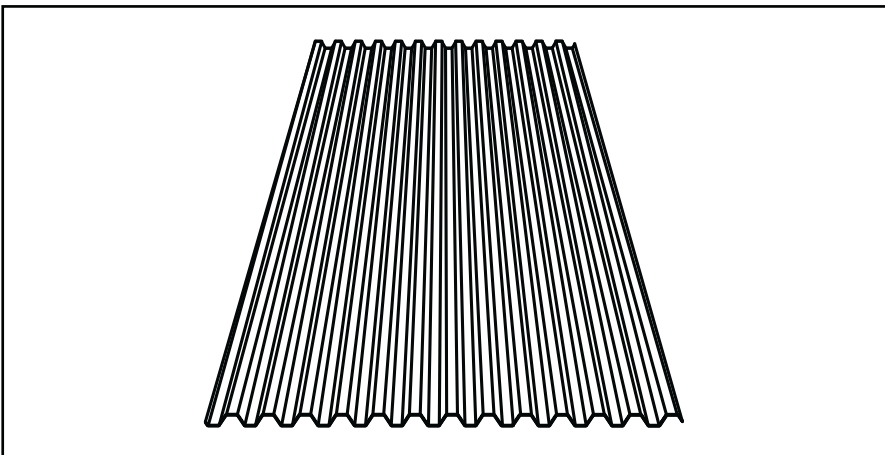
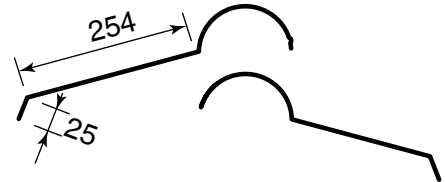


# Alubel 21 profile

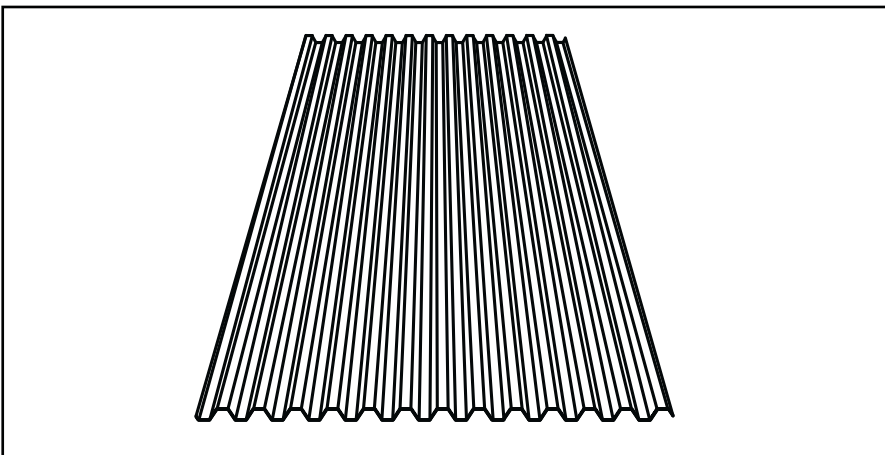
ACCESSORIES



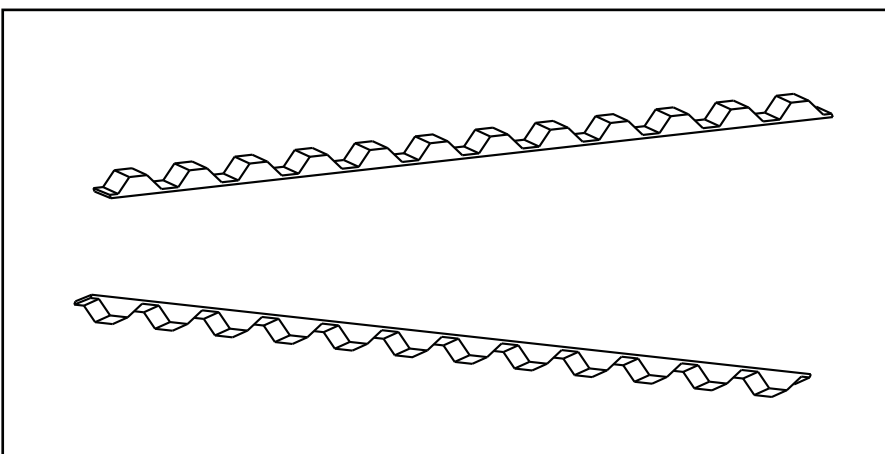
**Notched, hinged ridge**  
development 834 mm  
length 2800 mm



**Compact polycarbonate sheet**



**Translucent fibreglass sheet**

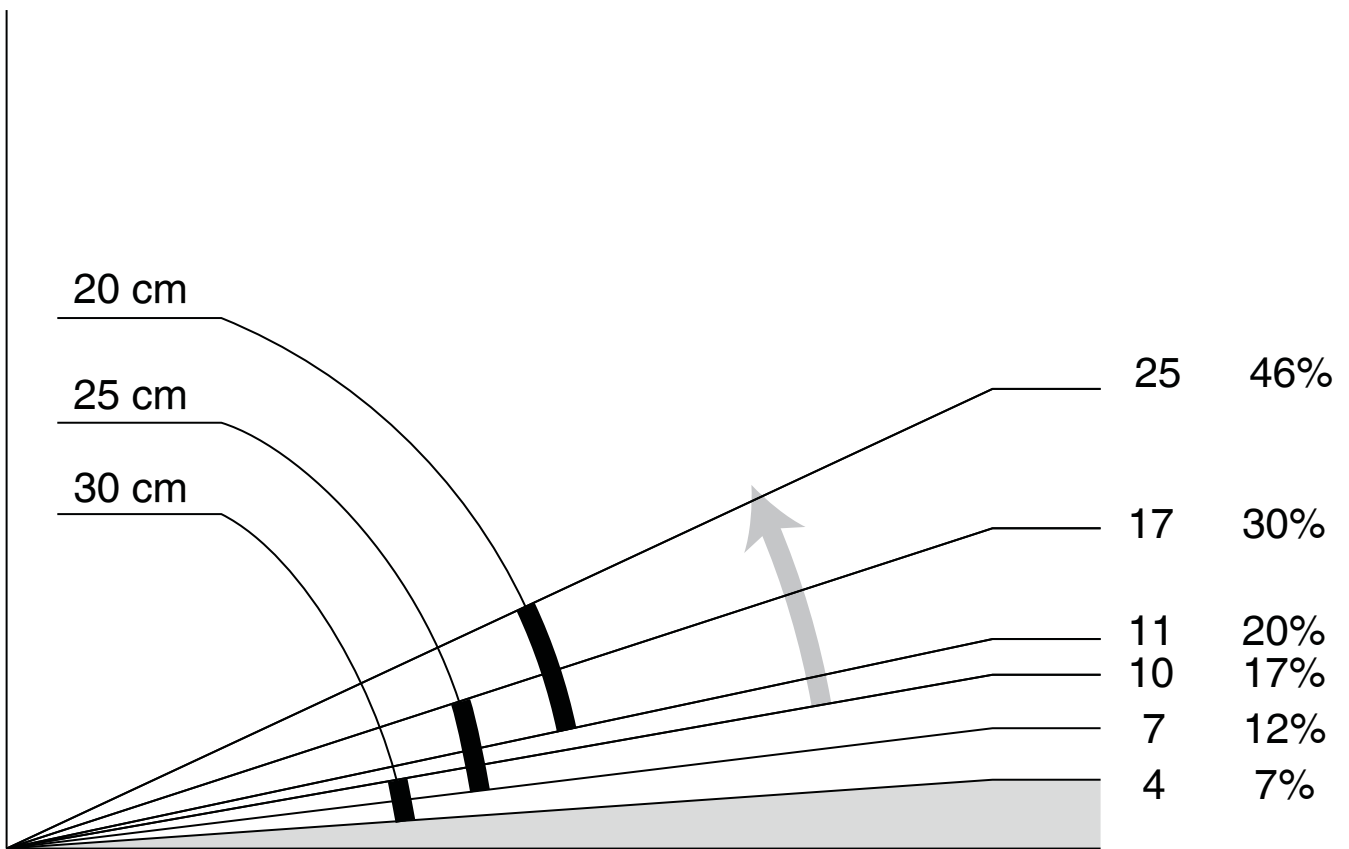


**Under/over corrugation profile**



# Alubel 21 profile

## OVERLAPPING VALUES



INSTALLATION INSTRUCTIONS