

METAL CLADDING DESIGN AND INSTALLATION TECHNICAL GUIDES

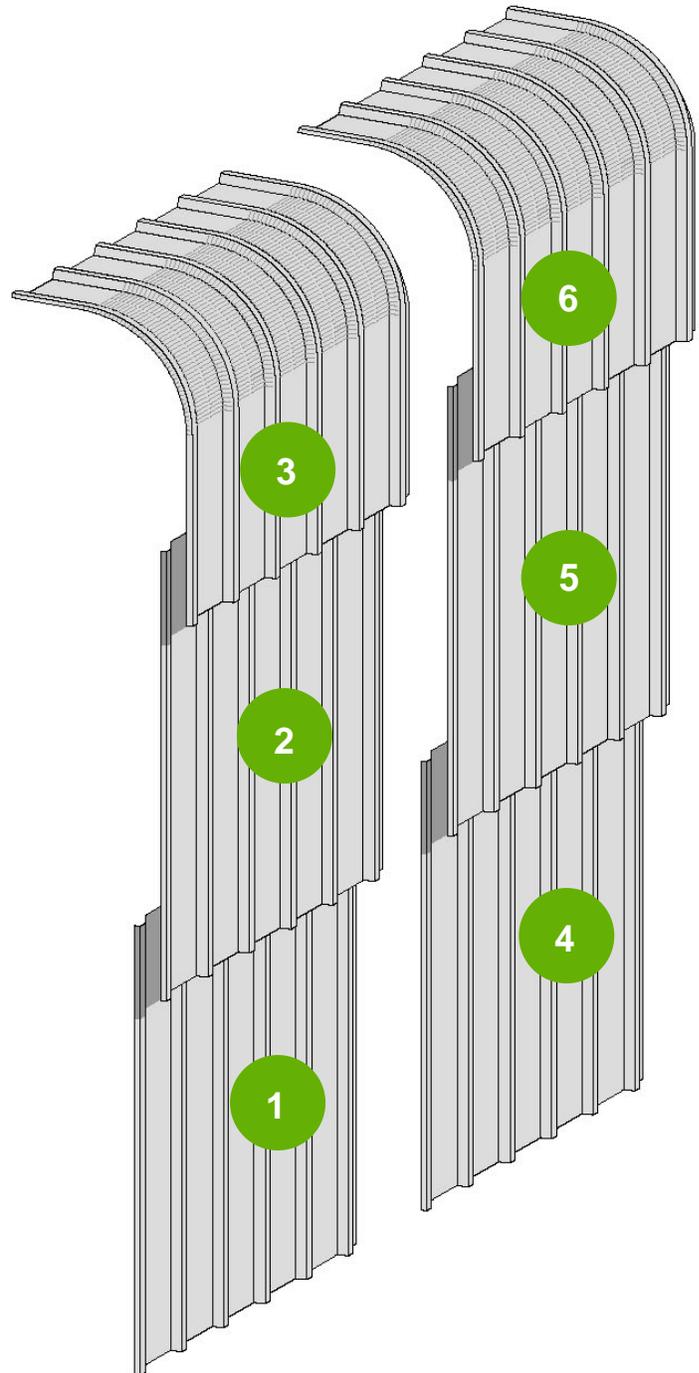
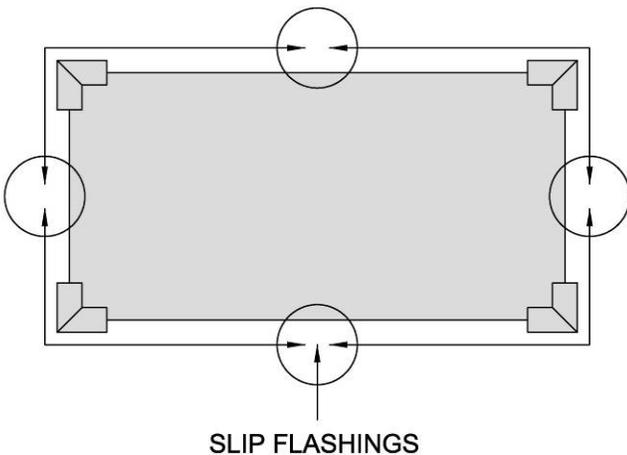
GUIDE 015: CURVED SHEETING

Factory Curves

Crimp curving sheet produces a rigid cover width. Therefore, sheets cannot be stretched or squeezed to fit. As a result it is recommended that installers measure the exact cover width of the curved sheet and stretch/squeeze the more flexible straight sheet to suit. Never install all the curved sheets first, instead progress one tier at a time as shown in the illustration opposite. This principle also relates to barrel vault roofs and pitched roofs with cranked ridge sheets.

To prevent possible expansion/contraction issues created by long continuous lengths of cladding it is recommended that the vertical elevation and roof cladding are kept separate by breaking up with a suitable junction detail, e.g. concealed gutter.

Where mitred corners are utilised, the cladding sheets should be laid away from the corners and a slip flashing installed at a convenient point in the elevation. The slip flashing will provide the necessary tolerance adjustment.



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On-Site Self Curving

Subject to the radius required, profiled sheeting may not need to be factory crimp curved. It is possible to install sheeting to a smooth curve by 'stressing' the sheet around the structure it is being fixed to. Self curved sheets are regularly chosen for large barrel vault roof applications where factory crimp centres would be too far apart and therefore give the impression of a faceted roof as opposed to curved.

However, whilst many projects are successfully undertaken using this form of installation, it must be pointed out that self curving is not always a viable option. This site process can induce stress marking in the sheet; undulations that become more visible the tighter the radius. These markings are not detrimental to the performance of the sheeting but they will determine the finished aesthetic quality and therefore govern its acceptability.

Choice of gauge, material section and coating finish are all criteria that need to be carefully considered. Thicker gauges, tighter profile sections and less reflective embossed coatings all serve to hide the stresses better than less resistant, thinner gauges and reflective finishes.

Whilst aesthetics is subjective, experience has shown that for typical 32mm deep roof profiles, satisfactory results using 0.70mm thick plastisol coated steel material can be obtained at radii of 40m and above. For smoother finishes such as Prisma this would need to be increased to at least 50m.

The basic recommendations when undertaking site self curving are:

- Ensure accuracy of support steelwork
- Use long sheets to reduce end laps
- If end laps are necessary ensure they occur where the theoretical roof pitch exceeds 4°.
- Reduce purlin centres, allowing a greater concentration of fixings and reducing the stress effect on each individual element.
- Place EPDM tape across the top flange of the support. This can help prevent pressure marking that can be caused by the resisting support edge.
- Commence installation of sheet at one end and progressively work along.