Cu

Zn

Al

Fe

smarttray™ Roofing Systems

Installation overview

please read in conjunction with product specific specification sheets and details in the next section

plywood requirements - roofing specific

All **smart** tray™ standing seam roofing *requires a solid plywood substrate* that is fitted to the roof structure. The final finish of the roofing profile can be adversely affected by the incorrect installation of the plywood substrate.

Selected plywood substrate to be H3 treated, min 15mm. Tongue and groove or square edged grade CD (faced sanded). Allow a 3mm expansion gap between sheets if using non T&G sheets.

All plywood is to be installed in accordance with specific manufacturer's specifications.

Fixings to be recessed stainless steel screws, fixed to a minimum of 7mm and a maximum of 15mm from the edge @ 150mm centers along the perimeter and 300mm centers on intermediate line of support.

Plywood to be finished with all screw heads recessed below the ply surface and with no protruding edges.

For rafters at 900mm centre, it is recommended to use 75 x 50mm purlins on flat @ 600mm centres. All plywood edges should be fully supported.

At the gutter line plywood should overhang the fascia board by 40mm. This in conjunction with our drip-edge flashing allows for the correct 60mm runoff into an external gutter. These edges are to remain square cut.

Where the roof terminates into a membrane type gutter or roof the plywood planes should finish flush. There should be a minimum of a 50mm up-stand separating the two planes.

Please contact Architectural Metalformers office before commencement of framing for non-standard roof designs

Please consult the Carter Holt Harvey technical manual for Butynol/torch on compatibility issues with treated timber, as well as any further plywwod installation requirements. www.ecoply.co.nz

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If a membrane from an internal gutter is to wrapped up onto the roofing subtsrate , allowance needs to be made for the material buildup.

This would require the plywood to be rebated before the membrane is applied in order to render all suraces flush. Any buildup of membrane (can be up to 6mm) will be visible through the tray and could advesly effect the performance of the roof. This is particularly the case with maliable materials like coppe rand zinc.

> venting of plywood

In oder to avoid condensation buildup, it is strongly recomended that adequate ventilation be provided for to the underside of the plywood substrate. Skillion roof design in particular.

In all instances where a ventilated roof space is required we design and install suitable perforated flashings in key areas.

> venting of natural titanium Zinc

In certain circumstances, the use of specific titanium zinc products will require the use of an expanded nylon underlay called Enkavent. Please consult the technical team at Architectural Metalformers for further information if you plan to use a natural zinc product.

> underlay and fixings

We install an approved roofing underlay between the plywood substrate and our **smart** tray™ sheets. The buidling paper is fixed with 12mm 316 stainless steel staples.

We fit all trays with concealed sliding clips that are phneumatically fixed using 25mm 316 stainless steel flat head collated nails.

Clips are fixed at 400-500mm centres and have a dual function: To allow the mechanical resistance of the roof and free expansion of the metal itself.

- For copper and zinc we use marine grade 316 stainless steel clips

- For aluminium and Colorcote™ we use Colorcote™ Zincalume™ clips.

Pre formed battens used for smartray batten cap are fixed using proprietary marine grade 316 stainless steel batten cap receiving clips. These batten clips are fixed to the ply substrate using 25mm x no12 timbertite screws @ 500mm centres.

The profiled batten snaps into position over these receiving clips, providing required watertight seals.

> flashings

Robust flashing design, manufacture and installation are the key to a total waterproof solution. All these crucial steps are controlled and overseen in-house.

We use flashing methodologies that are well proven in Europe and the USA for hundreds of years and our flashings comply and often surpass E2 regulations.

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thermal expansion and contraction

By using the sliding clip system detailed above, we allow for expansion and contraction without the associated “oil canning” as seen in some tray roofs.

The following is the expansion rate of various metals over a 70°C temperature change for a 10m length of product.

Copper	11.9mm
Zinc	15.4mm
Aluminium	14.8mm
Zincalume™	7.7mm