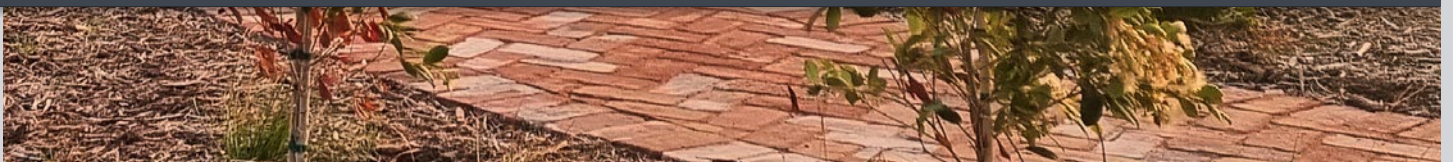




Hiland Tray™ Nailstrip

Design Guide: Roof & Wall Cladding



Hiland Tray[™] Nailstrip

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Form & Function

Stratco Nailstrip Hiland Tray[™] is a modern architectural roofing and walling profile with concealed fasteners providing a clean finish with smooth, uncluttered lines. The Nailstrip profile can be secured directly over plywood or may be used to span over timber or steel battens.

Design Considerations

The minimum recommended roof pitch for Stratco Nailstrip Hiland Tray is 2°. Care needs to be taken to ensure the minimum roof pitch is maintained to avoid rainwater ponding.

Nailstrip Hiland Tray is available in a number of sheet covers and two available rib heights. Spans, fastener allocation and roof runs specified in this document are suitable for profiles listed in Table 1.0.

Roofing is designed to withstand actions incidental to maintenance. Hiland Tray roofing is to be walked-on as little as possible.

Spans and fastener allocation have been specified for loading imposed from wind classification up to and including non-cyclonic domestic classification N3.

Stratco does not accept liability for any loss or damage suffered as a result of any errors in the interpretation of these span tables.

Light gauge steel cladding with wide pans may exhibit oil canning which can affect the aesthetics of the building design. Oil canning will vary depending on the time of day and angle of viewing and will likely be more noticeable in darker colours. Oil canning will also be more prevalent in wider pans and longer sheet runs. Building designers and homeowners should be aware of this and take this into consideration.



Profile

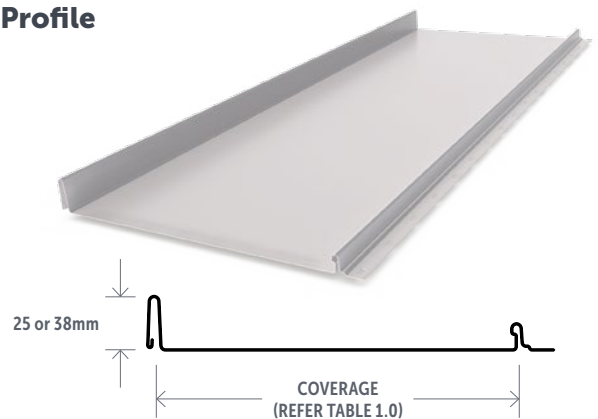


Table 1.0 - Nailstrip Profile Coverage Options

Rib Height (mm)	Sheet Cover (mm)	BMT (mm)
25	195	0.55
25	295	0.55
25	350	0.60
38	165	0.55
38	265	0.55
38	320	0.60

Material Specifications

Table 2.0

Material Properties	0.55mm BMT				0.60mm BMT	
	Girth 300mm		Girth 400mm		Girth 455mm	
	ZnAl	Colour	ZnAl	Colour	ZnAl	Colour
Min. 'AZ' Coating Mass (g/m ²)	150		150		150	
Mass (kg/linear metre)	1.35	1.36	1.80	1.82	2.22	2.25
Min. Yield Strength (MPa)	300		300		300	
Width Coverage (mm)	165/195	165/195	265/295	265/295	320/350	320/350
Sheet Tolerance (mm)	±7 ±4		±7 ±4		±7 ±4	
Min. Roof Pitch	2°		2°		2°	

Water Carrying Capacity

Table 3.0 - Maximum Roof Run For Drainage (m)

Roof Pitch	Peak Rainfall Intensity (mm)					
	150	200	250	300	350	400
2°	52	39	31	26	22	20
5°	75	56	45	37	32	28
10°	101	76	61	51	43	38
15°	122	92	73	61	52	46

The peak rainfall intensities shown represent a 100 year average recurrence interval (ARI) for a five minute rainfall duration. If roof penetrations exist, the actual roof run will typically be larger than the distance from ridge to eaves due to penetration/s interfering with the runoff. Contact Stratco if further advice is required.

Spans

Table 4.0 - Spans (mm)

Application	Span Type	Span (mm)
Roofing	End	600
	Internal	600
	Overhang	50
Walling	End	900
	Internal	900
	Overhang	100

If fixing directly over plywood, secure at maximum 450mm centres.

Compliance

Testing has been performed in accordance with AS1562.1-1992 and AS4040.0, 1 & 2-1992. Roofing and walling allowable spans and fastener allocation have been determined based on relevant pressures determined in accordance with AS4055, Wind Loads for Housing.

Spans

Pressures and spans are based on an eaves height not exceeding 6.0m, a roof pitch no greater than 35° and a total roof height of maximum 8.5m.

Roofing calculations are based on $C_{pe} = -0.9$ and $C_{pi} = 0.2$, walling is based on $C_{pe} = -0.65$ and $C_{pi} = 0.2$. A local pressure factor, $K_1 = 2.0$ has been used for all spans for both strength and serviceability limit states.

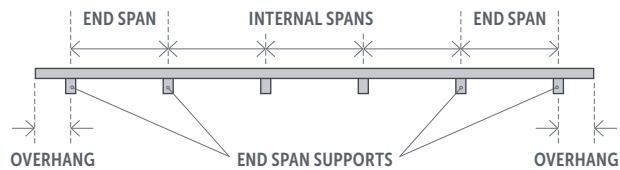
Additional engineering advice can be obtained from Stratco if any design parameters vary from those indicated above.

Stratco Nailstrip Hiland Tray is limited to minimum lengths of 1650mm and maximum lengths of 15m.

Walking On Hiland Tray

Stratco recommend any foot traffic is kept to supports for safety and to avoid damage. Do not walk on sheet overhangs. Do not walk on Hiland Tray roofing between battens. When walking on roofs wear flat, rubber soled shoes and walk flat footed spreading your weight evenly.

Span Definitions



Fixing Recommendations

It is recommended pans are turned up at the ridge and down into gutters, particularly at low pitches. Roofing should have a 50mm overhang into gutters and be laid with the overlapping rib facing away from the prevailing wind.

It is recommended that Stratco Nailstrip Hiland Tray is secured atop plywood backing.

Runs of cladding will require Stratco Hiland Tray ‘Starter’ pieces to provide an underlapping detail for the initial lap.

At each supporting member, fix sheets through the centre of a slot of the underlap and remove all swarf. If securing directly over plywood secure screws through centre of slots at a spacing not exceeding 450mm.

To lap sheets, press down on the lap over a support until the sheets clip together, continue working along the length of the sheet until the full length is secured. Hiland Tray sheeting is not suitable for end lapping.

When fixing over insulation a roof spacer system is recommended. If not used, the screw length may need to be increased with a minimum of three screw threads protruding past steel supports or minimum 23mm embedment into timber supports required.

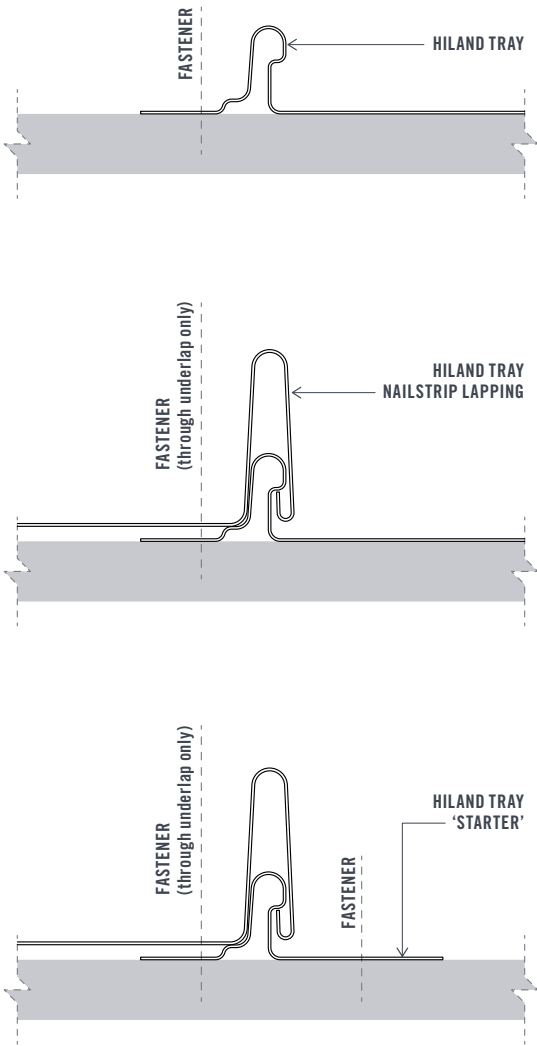
Oil canning of Nailstrip Hiland Tray can be reduced by adding a product such as Proctor GEO HC9 laid over ProctorWrap Vapour Permeable Foil. This will help to allow any condensation to pass through and dry out.

Table 5.0 - Fastener Selection

Support	Fastener
Min. 0.55mm BMT G550 steel batten	10g-15x16mm needle point flat head screw
Timber (minimum F7 softwood)	10g-12x25 type 17 wafer head screw
Min. 15mm CD grade plywood	10g-12x25 type 17 wafer head screw

All screws to have a minimum Class 3 coating.

Figure 1.0: Nailstrip Hiland Tray Fixing Details



Hiland Tray Flashings

Flashing details are indicative. Flashings must be detailed and dimensioned by the installer for each specific job.

Figure 2.0: Barge Flashing Detail (Parallel to Hiland Tray)

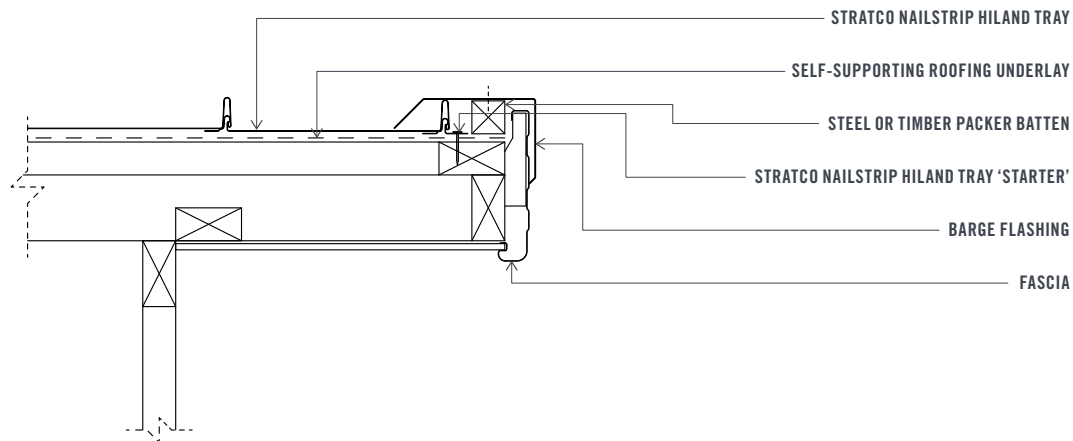


Figure 3.0: Barge Flashing Detail (Perpendicular to Hiland Tray)

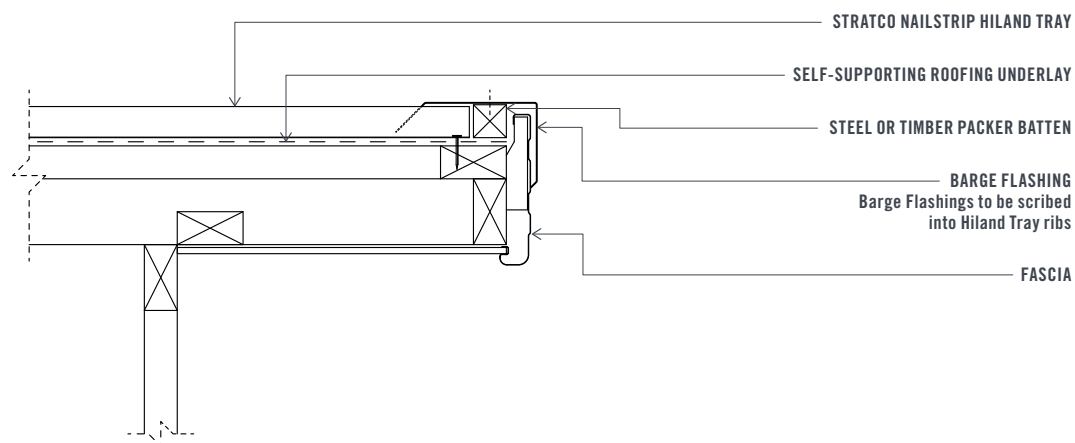
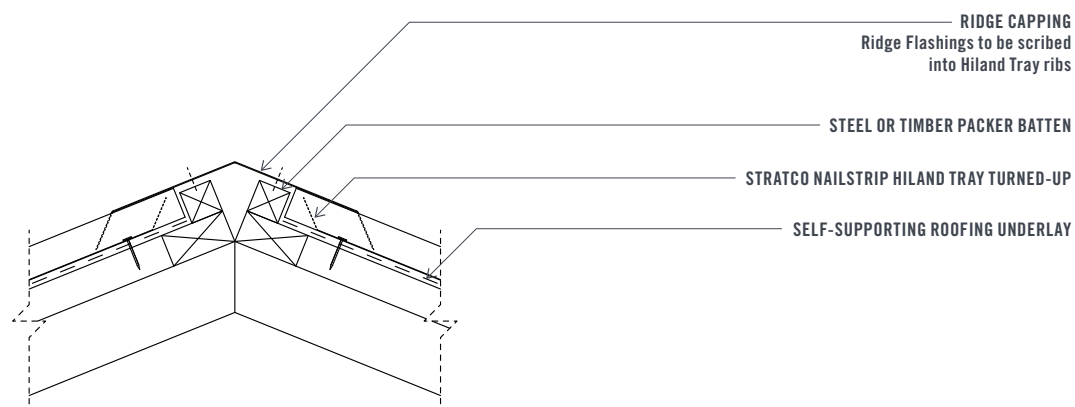


Figure 4.0: Ridge Capping Detail



Hiland Tray Flashings

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Figure 5.0: Valley Flashing Detail

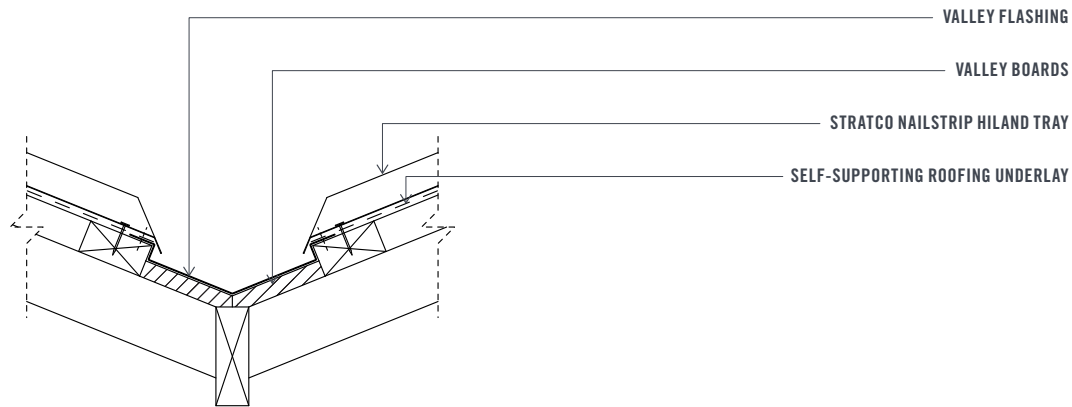


Figure 6.0: Internal Corner Wall Flashing Detail (Plan View)

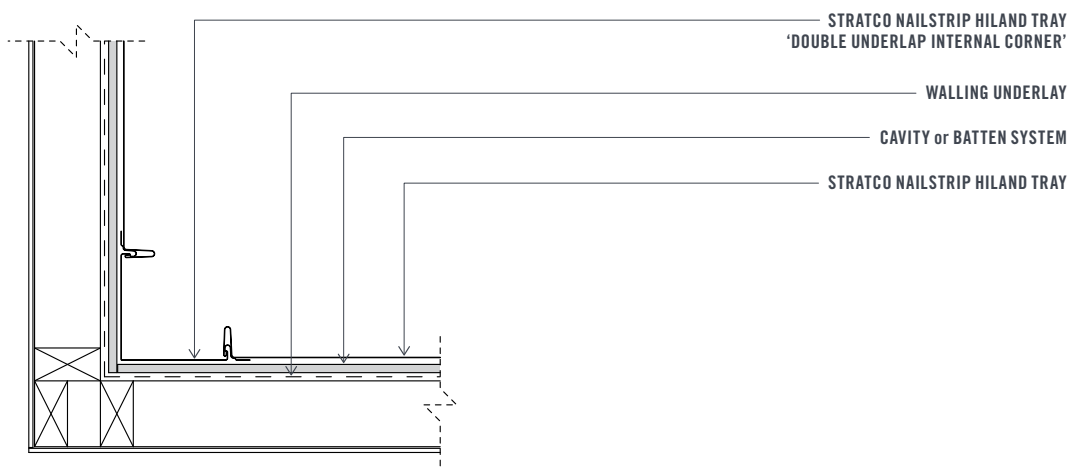
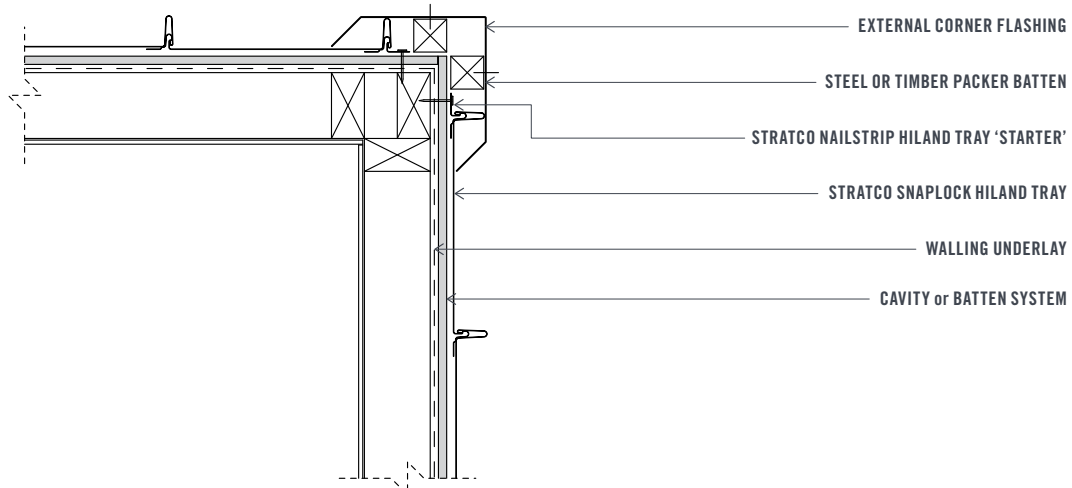


Figure 7.0: External Corner Wall Flashing Detail (Plan View)



Hiland Tray™ Nailstrip

Hiland Tray Flashings

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Figure 8.0: Footing Mould Flashing Detail

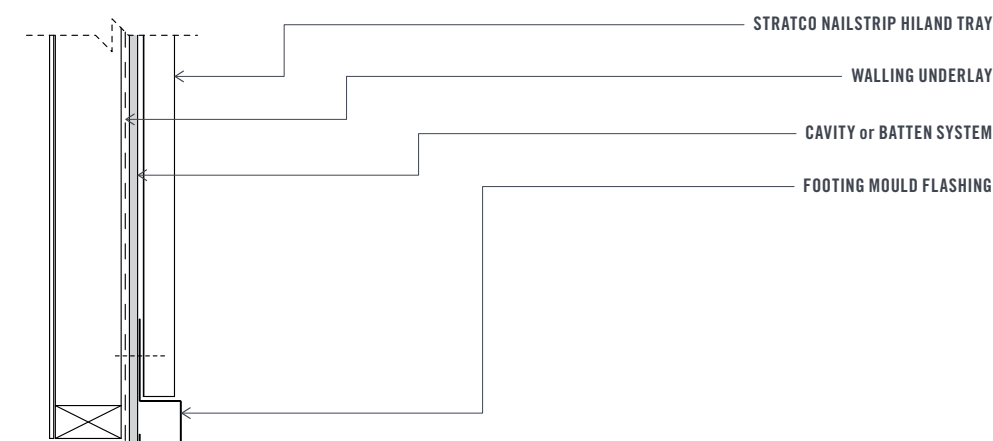
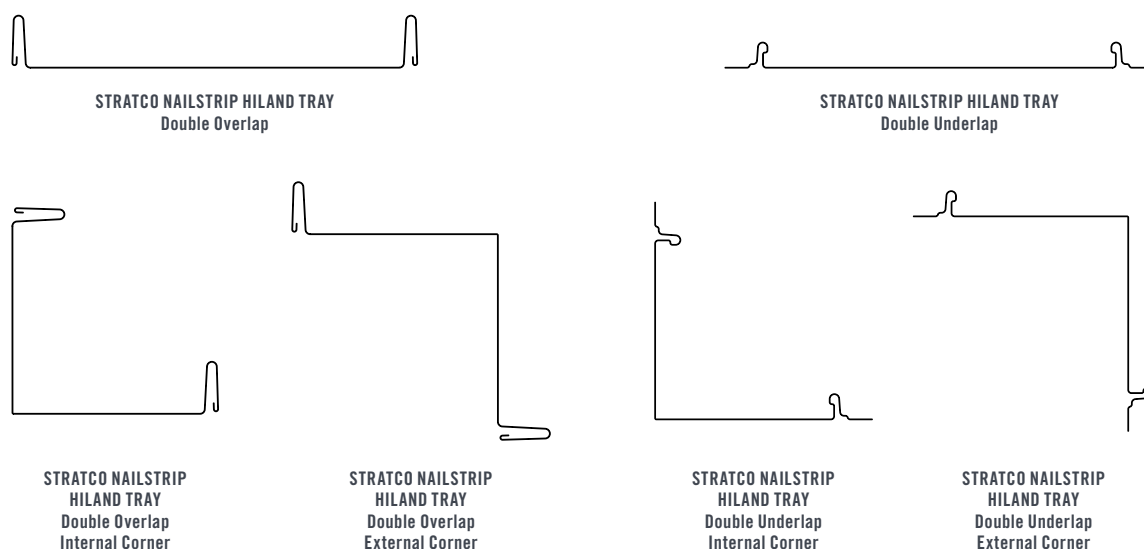


Figure 9.0: Custom Rolled Flashing Profiles



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How To.



MAINTENANCE The performance of Hiland Tray roofing and walling over time depends on its correct application and maintenance. Maintenance should be performed as often as is required to remove any dirt, salt and pollutants. Where Hiland Tray cladding is used in severely corrosive environments, cleaning should be performed more often. It is important that screws have the same life expectancy as the Hiland Tray cladding you have specified. Packs of Hiland sheeting should always be kept dry and stored above ground level on site. If the sheets have become wet, they should be separated, wiped and placed in the open to dry. Refer to the Stratco 'Selection, Use and Maintenance' brochure for more detailed information about the correct use and maintenance of this product.