



### Maximum Support Spacing (in millimetres)

The maximum recommended support spacings are based on tests conducted in accordance with AS1562.1-1992, AS4040.1-1992 & AS4040.2-1992. Roof spans consider both resistance to wind pressure and light roof traffic (traffic arising from incidental maintenance). Wall spans consider resistance to wind pressure only.

The pressure considered (in accordance with IS 875.3) is based on buildings up to 10m high, Zone 3 (Basic wind speed  $V_b=47$  m/s), Class A, Terrain category 3,  $k_1=1.0$ ,  $k_2=0.91$ ,  $k_3=1.0$ , with the following assumptions made.

Clip Lock Optima 730 : Limit state wind pressure capacities (KPa)												
Span Type	Limit State	Span (mm)										
		900	1200	1500	1800	2100	2400	2700	3000	3300	3600	3900
Clip Lock Optima 730 mm Base Metal Thickness (0.47 mm Total Coated Thickness)												
SINGLE	Serviceability	1.63	1.32	1.03	0.77	0.56	0.41	0.31	0.23	0.18	-	-
	Strength*	3.05	2.56	2.09	1.68	1.36	1.14	1.01	0.93	0.88	-	-
END	Serviceability	1.43	1.43	1.36	1.19	0.96	0.74	0.58	0.47	0.39	0.34	-
	Strength*	2.86	2.34	1.91	1.62	1.44	1.31	1.18	1.03	0.88	0.72	-
INTERNAL	Serviceability	1.57	1.40	1.23	1.07	0.93	0.81	0.70	0.61	0.53	0.45	0.38
	Strength*	2.51	2.26	2.01	1.78	1.58	1.40	1.24	1.11	0.99	0.89	0.78
Clip Lock Optima 730 mm Base Metal Thickness (0.50 mm Total Coated Thickness)												
SINGLE	Serviceability	2.17	1.81	1.46	1.14	0.88	0.68	0.52	0.40	0.30	-	-
	Strength*	3.68	3.06	2.47	1.98	1.62	1.42	1.35	1.35	1.35	-	-
END	Serviceability	2.20	1.84	1.51	1.23	1.00	1.82	0.67	0.55	0.45	0.35	-
	Strength*	3.36	2.87	2.41	2.02	1.69	1.42	1.20	1.02	0.87	0.73	-
INTERNAL	Serviceability	2.00	1.96	1.89	1.74	1.50	1.22	0.95	0.74	0.67	0.67	0.67
	Strength*	3.10	2.75	2.43	2.13	1.88	1.67	1.49	1.35	1.23	1.14	1.05

\* A capacity reduction factor of  $\phi=0.9$  has been applied to strength capacities. Support must be not less than 1 mm BMT

## INSTALLATION



### Preparation

Before starting work ensure that:

- The support for your cladding is truly in the same plane
- The minimum roof slope conforms to our recommendation
- The overhang of sheets from the top and bottom supports don't exceed our recommendations

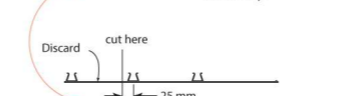
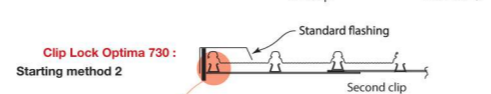
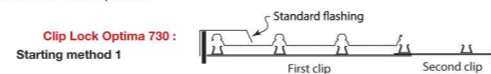
### Orientation of Sheet before Lifting

Consider which end of the building is best to start from. For maximum weather-tightness, start laying sheets from the end of the building that will be downwind of the worst-anticipated or prevailing weather. It is much easier and safer to turn sheets on the ground than up on the roof. Before lifting sheets onto the roof, check that they are the correct way up and the overlapping side is towards the edge of the roof from which installation will start.

Place bundles of sheet over or near firm support, not at mid span of the roof members.

### Steps for Installation

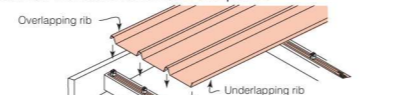
1. Lay wire mesh or chicken wire mesh on the purlins and weld or screw the wire mesh to each purlin.



2. Position the first clips on each purlin by placing onto the purlin nearest to the gutter.



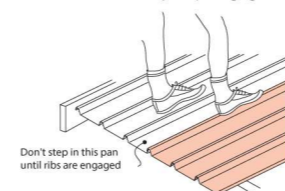
3. Fix the first clip on the purlin so that it points in the direction of laying. Ensure the clip is 90° to the edge of the sheet.
4. Align the clips with the spacer using a string line (or the first sheet as a straight edge) to align the clips as you fix a clip to each purlin working towards the high end of the roof.
5. Drive hex head screw through the top of the clip, into the purlin.
6. Work along the edge of the gutter, ensuring it aligns correctly at its end in relation to the gutter and ridge (or parapet or transverse wall).
7. Place the glass wall insulation between the purlin.



### Clip Lock Optima 730

8. Measure the distance from the gutter end of the sheet to the fascia or purlin.
9. Position the first sheet so that the overhangs are of the desired amount (usually 50mm) to the gutter. It is important to ensure this first sheet is placed squarely to adjacent.
10. Engage the sheet with clips using vertical foot pressure on all the ribs over each clip.
11. Fix the next row of clips, one to each support with the slots and tabs engaged. Be sure the clip is 90° to the edge of the sheet.
12. As before, place the next sheet over its clips also engaging the edge of the preceding sheet.

13. Accurately position the sheet so that it overhangs the desired amount into the gutter. It is important that you keep the gutter-end of all sheets in a straight line.
14. Fully engage the two sheets along the overlapping rib. You can do this by walking along the full length of the sheet with one foot in the centre pan of the previous sheet and the other foot applying vertical pressure to the top of the interlocking ribs at regular intervals. It is important that you don't walk in the unsupported pan besides the overlap. A rubber mallet may help engagement of laps on long spans.

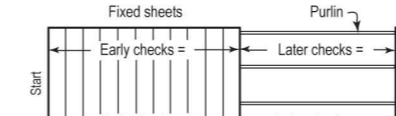


15. Similarly, engage all the clips by applying vertical foot pressure to the top of the other ribs over each clip. It is essential that the sheets interlock completely. It is important that your weight is fully on the sheet you are installing.

### Check alignment occasionally

Occasionally check that the sheets are still parallel with the first sheet, by taking two measurements across the width of the fixed cladding.

At about half way through the job, perform a similar check but take the measurements from the finishing line to aim for the final sheet to be parallel with the end of the roof. If the measurements are not close enough, lay subsequent sheets slightly out of parallel to gradually correct the error. To allow this to happen, flatten the tabs on the base of subsequent clips - the slot in the clip will allow the clips to be fixed out of standard pitch.



### Fix the last sheet

If the final space is less than the full width of a sheet, you can cut a sheet along its length and shorten the clips as appropriate.

### Installing Clip Lock Optima 730

The installation procedure for walls is similar to that described for roofs. To engage clips, use a rubber mallet (instead of foot pressure). To prevent Clip Lock Optima 730 from sliding downward in the fixing clips, you should pierce-fix through each sheet under the flashing or capping, along the top of the sheets.



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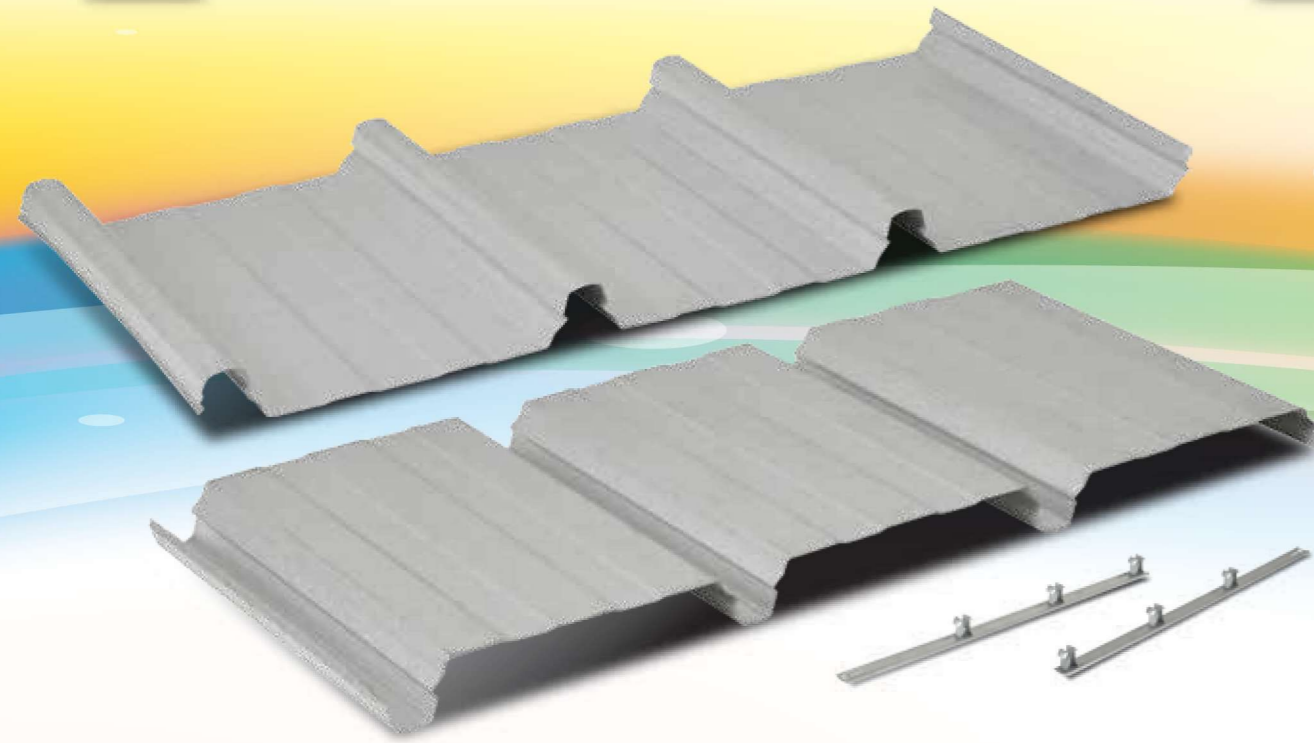


# Clip Lock Optima 730

**NEW!**

PREMIUM QUALITY PRODUCTS

# Clip Lock Optima 730



**Clip Lock Optima 730** is a new generation of widest-cover concealed-fixed cladding. Made of high tensile of 550 MPa yield strength, it spans widest, with better uplift performance than all available comparable profiles.

The profile is fixed on a specially designed clip, manufactured from a high tensile steel base and designed to withstand high wind pressure. This provides accuracy, economy and ease during the installation and makes it a superior lasting product design.



**Clip Lock Optima 730** sheets have an effective cover width of 730mm with ribs of approximately 39mm in height spaced at 242mm between rib centre. The sheets should be installed with compatible proprietary interlocking Clip730 clips, which lock over the male rib. The clips lock firmly into the underside of the centre and female ribs and in turn are fastened to support with three fasteners. The clip shall be concealed where no fasteners can penetrate the roofing.

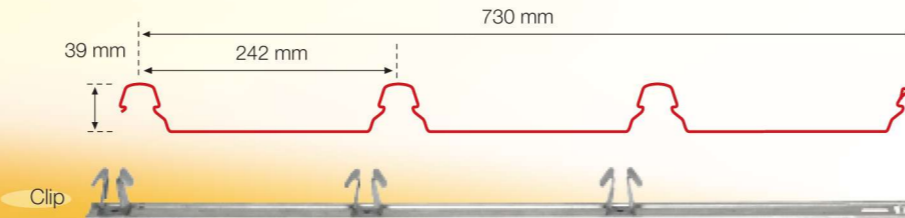
Maximum Roof Run (m) as based on CSIRO* Formula							
Clip Lock Optima 730	Rainfall Intensity mm/hr	Roof Slope					
		1°	2°	3°	5°	7.5°	10°
		100	258	321	377	469	559
150	172	214	251	312	373	428	
200	129	161	188	234	279	321	
250	103	128	151	187	224	257	
300	86	107	126	156	186	214	
400	65	80	94	117	140	161	
500	52	64	75	94	112	128	



\*Commonwealth Scientific & Industrial Research Organisation. The minimum recommended roof pitch is 1 degree.



## Sectional Profile



## Lengths

On site roll-forming from ridge to eave, i.e. single jointless sheet or custom cut

## Tolerances

Thickness for Material :  $\pm 0.03\text{mm}$   
Effective Width :  $\pm 4\text{mm}$   
Length :  $\pm 0-15\text{mm}$

## Dimension

Rib Height : 39mm  
Effective Cover : 730mm  
Minimum Roof Pitch : 1°

Recommended Maximum Roof Length, Metre							
Clip Lock Optima 730	Rainfall Intensity, mm/hr	Roof Slope					
		1°	2°	3°	4°	5°	7.5°
		250	103	128	151	187	224
300	86	107	126	156	186	214	
400	65	80	94	117	140	161	
500	52	64	75	94	112	128	

Maximum Support Spacing; Roof, mm			
Clip Lock Optima 730	Type of Span	Base Metal Thickness, mm	
		0.42	0.48
		Single Span	1300
End Span	1350	1700	
Internal Span	2200	2400	
Unstiffened Overhang	100	150	
Stiffened Overhang	300	450	

Based on AS1562.1-1992, AS4040.1-1992 & AS4040.2-1992 and wind speed  $V_B = 47\text{m/s}$ , and supported on 1mm BMT

$C_{pe} = -1.2$  (internal spans)  $C_{pe} = -2.0$  (single and end span)  $C_{pi} = +0.2$

Limit State Wind Pressure Capacities (KPa) – AS 1562.1992 – Roof 0.42mm BMT										
Clip Lock Optima 730	Span Type	Limit State	Span, mm							
			900	1200	1500	1800	2100	2400	2700	3000
			Single	Serviceability	1.63	1.32	1.03	0.77	0.56	0.41
Strength	3.05	2.56		2.09	1.68	1.36	1.14	1.01	0.93	
End	Serviceability	1.53	1.43	1.36	1.19	0.96	0.74	0.58	0.47	
	Strength	2.86	2.34	1.91	1.62	1.44	1.31	1.18	1.03	
Internal	Serviceability	1.57	1.40	1.23	1.07	0.93	0.81	0.70	0.61	
	Strength	2.51	2.26	2.01	1.78	1.58	1.40	1.24	1.11	

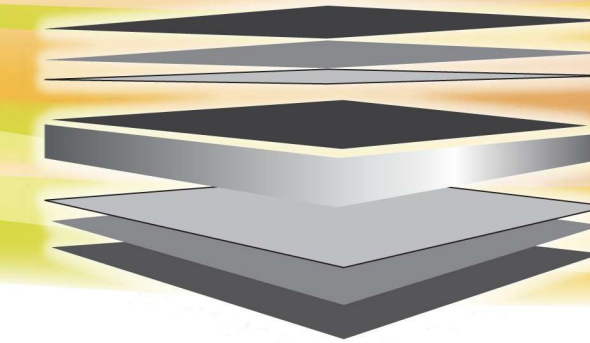
A capacity reduction factor of  $\phi = 0.9$  has been applied to strength capacities. The pressure capacities for serviceability are based on a deflection limit of  $(\text{span}/120) + (\text{maximum fastener pitch}/30)$ . The pressure capacities for strength have been determined by testing the roofing for failure (ultimate capacity). These pressures are applicable when the roofing is fixed to a minimum of 1.0mm, G550 steel purlin.

Available Thickness							
Clip Lock Optima 730	Preferred Base Metal Thickness, mm	Total Coated Thickness, mm	Weight Per Metre, Kg/m <sup>2</sup>	Weight Per Metre, Kg/m	Coverage Per Ton, M <sup>2</sup> /MT	Steel Grade	Min Yield Strength, Mpa
	0.42	0.47	4.34	3.17	230	ASTM A446-E	550
	0.48	0.53	4.96	3.62	201	ASTM A446-E	550
	0.55	0.60	5.69	4.15	175	ASTM A446-E	550

## Steel Grade

Coted profiled steel roof or wall cladding is from a Base Metal Thickness of 0.42mm, 0.48mm or 0.55mm thickness, with minimum yield strength of 550Mpa, metallic hot dip coated with alloy 55% aluminium, 43.5% zinc and 1.5% silicon

## CleanColorBond® XRW



Finish Coat (Nominal 20µm)  
Corrosion Inhibitive Primer (Nominal 5µm)  
Conversion Coating  
ZINCALUME® AZ150 steel Substrate  
Conversion Coating  
Corrosion Inhibitive Primer (Nominal 5µm)  
Backing Coat (Shadow Grey, Nominal 5µm)

Top coat - Advanced durability polyester paint finish of 20µm over 5µm corrosion inhibitive epoxy primer  
Reverse coat - Shadow Grey wash coat of 10µm over 5µm of corrosion inhibitive epoxy primer

The coating mass shall be 150g/m<sup>2</sup>, total coated both sides as determined by the prescribed triple spot tests. (AZ150 conforms to Austrian Standard As 1397)

AS 1397 recommended coatings Z450 & AZ150 for typical exterior protection such as roofing, walling and accessories.

Flashing, capping and trims will be manufactured from the same material as the roof and wall cladding.

## Turn up/down Tools

On the roofs of pitches less than 10°, the high end of all sheets must be turned up to stop water from being driven under the flashing and into the building. Similarly, the pans at the gutter end must be turned to stop water running back along the underside of the sheets

## Fasteners – Self Drilling Screw

Fasteners without insulation					
Clip Lock Optima 730	Support Details	Numbers of Fasteners			Clip Fixing
		Per Sheet/support	Per m <sup>2</sup>	Clips per m <sup>2</sup>	Roof & Wall Application
		Steel up to 0.75mm BMT	3	4	1.5
Steel > 0.75mm BMT up to 3mm BMT				12-14 x 20, Metal Teks, Hex Head	
Timber – softwood				12-11 x 40, Type 17 HG, Hex Head	
Timber – hardwood				12-11 x 25, Type 17 HG, Hex Head	

All fasteners shall comply with AS3566 -2002 Class 3 (minimum) for external application

Where insulation is to be installed, you may need to increase the length of the screw given above, depending on the density and thickness of the insulation.