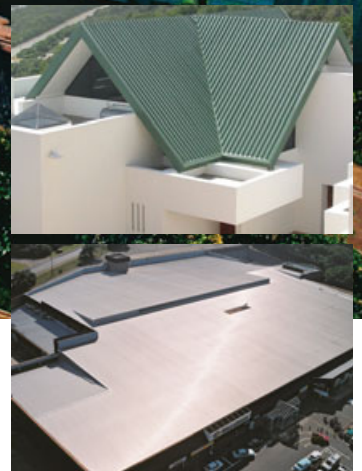
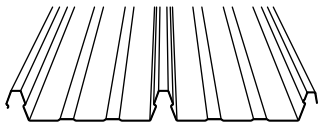


# Global Roofing Solutions Klip-Lok 406™ Aluminium



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[info@globalroofs.co.za](mailto:info@globalroofs.co.za)



# Typical specification

## Materials

The roofing shall be Klip-Lok 406™ profile, roll-formed in continuous lengths and shall be Aluminium Mill finish or colour coated one side/two sides with a COLORTECH G4 coating, in 0,7 mm or 0,8 mm thickness. Klip-Lok 406™ Aluminium shall be obtained from Global Roofing Solutions (Pty) Ltd.

## The Profile

Shall have three trapezoidal ribs at 203 mm centres giving a nett cover of 406 mm. The rib height shall be 41 mm and provide capillary breaks. The male rib shall have spurs to ensure a positive double interlocking action at side-laps. Each pan shall incorporate two stiffener ribs.

## Assembly

Klip-Lok 406™ sheeting shall be laid in strict accordance with the manufacturers specifications by a GRS (Brownbuilt) approved contractor. A five year guarantee shall be issued after approval by Global Roofing Solutions (Pty) Ltd.

## Flashing

Stop endings must be formed at the apex and the pan turned down at the eaves to form a drip. The roof sheeting shall be closed as necessary with purpose made flashings of a design approved by the supplier. These flashings shall be notched around ribs where necessary and fixed to aluminium S10 clips. All these operations must be performed with special tools available from the supplier.

## Site handling

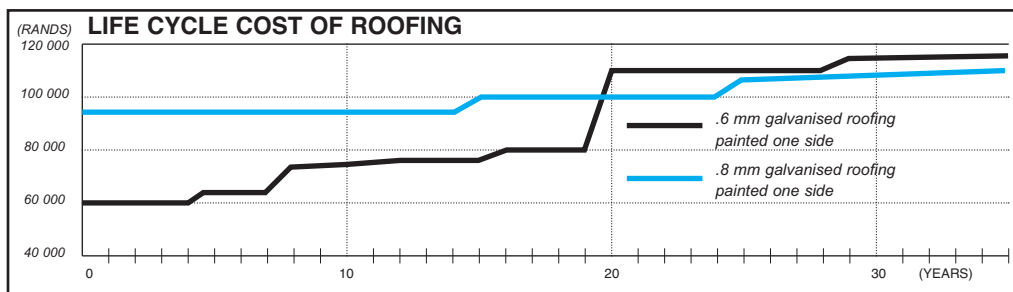
All Klip-Lok 406™ materials should be suitably supported under ventilated cover, away from risk of damage by building operations, contact with cement, dust, lime and abrasive dust.

## Cleaning up

The completed roofing, including gutters, must be swept clean of all debris before handing over.

## Quality assurance

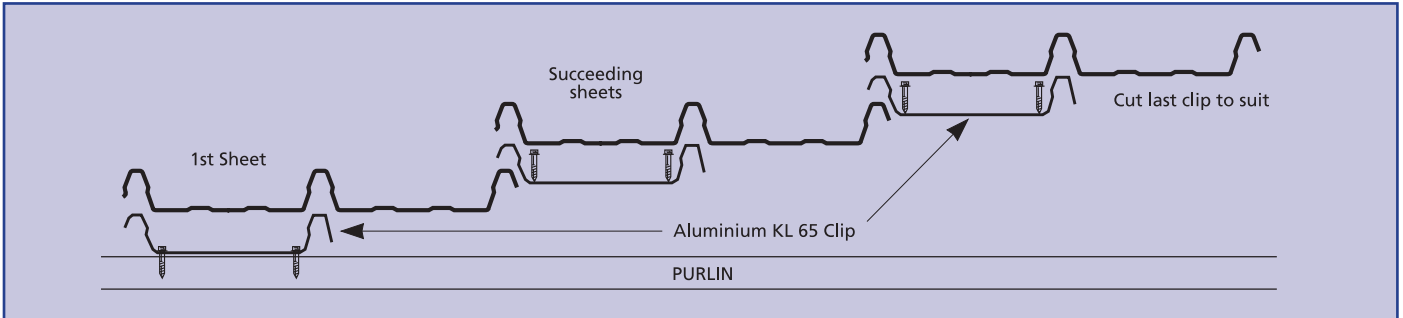
The manufacturer shall be assessed and certified as complying with ISO 9001:2008 Quality Management System.



Aluminium's extended life expectancy and virtually maintenance-free characteristics makes it cost effective over the long term.

**The cumulative cost chart was based on a study of a major industrial development in the Durban South area.**

# The concealed fixing concept



## Fasteners

The recommended fasteners for fixing the Aluminium KL 65 clips to steel or timber purlins are 304 stainless steel fasteners as follows:

For extreme corrosive areas, please contact GRS.

### Steel Purlins up to 4.5mm thick

No. 10-16 x 22 mm lg. 304 stainless steel bi-metal self-drilling wafer head PH2 screw, No. 3 drill point, ZAP Class 5.

### Steel Purlins more than 4.5 mm thick

No. 12-24 x 38 mm lg. 304 stainless steel bi-metal self-drilling wafer head PH3 screw, No. 5 drill point, ZAP Class 5.

## Contact with other materials:

Aluminium in itself is exceptionally resistant to general weathering and corrosion. Contact with other dissimilar metals and materials may shorten its life. It is therefore recommended that the following steps are taken to isolate the aluminium and ensure maximum life. The sheeting must be isolated from steel purlins, in most situations through the application of a suitable protective plastic tape. In certain non-corrosive situations a high quality paint or galvanizing system on the steelwork might be adequate. However, no reliance can be placed on the paint coating present to provide protection against galvanic corrosion.

## Translucent Sheeting

Klip-Lok 406™ offers various shades in the following translucent products:

Fibreglass (GRP) 406 mm (single cover)  
Polycarbonate 812 mm (double cover).

For fixing details see Installation Manual.

Polycarbonate is totally inert towards aluminium therefore there are no specific precautions to be taken when in contact with aluminium. Glassfibre translucent panels when in contact with aluminium can have a detrimental effect, therefore it is recommended that the aluminium surface where in contact with the glassfibre be painted with a bituminous Aluminium paint.

### For 50mm insulation blanket over purlins:

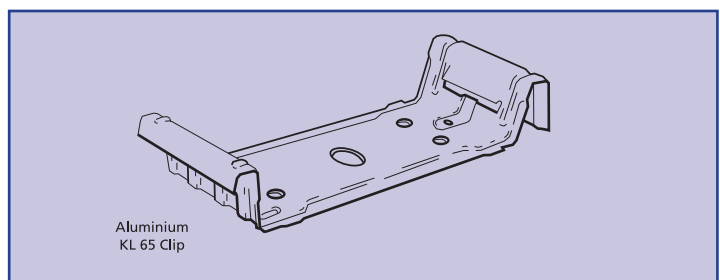
No. 10-16 x 22 mm lg. 304 stainless steel bi-metal self-drilling wafer head PH2 screw, No. 3 drill point, ZAP Class 5.

### Timber Purlins

No. 10-11 x 45 mm lg. 304 stainless steel self-drilling wafer head PH2 screw, Type 17 drill point, ZAP Class 5.

**\*For light steel frame purlins less than 1mm thick, please contact GRS.**

Contact Material	Recommended Barrier
Aluminium (and alloys)	Not required
Stainless steel 304, 316 etc.	Not required
Zinc	Marginal/Use bituminous paint
Lead	Bituminous paint or Zinc chromate
Concrete, cement, lime	2 Coat bitumen or bituminous paint
Stone, brick	Aluminium, rubber bitumen based paint, aluminized bituminous or protective plastic tape
Softwood	Aluminium, rubber, bitumen based paint, or protective plastic tape
Hardboard	Sealer, Building Paper or bituminous felt
Some insulation products, felt etc.	Bituminous paint, bituminous paper or felt
Glass Fibre insulation	Bituminous paint
Polycarbonate	Not required
Plaster	Bituminous paint
Sealant, caulking compounds, adhesives	Not required

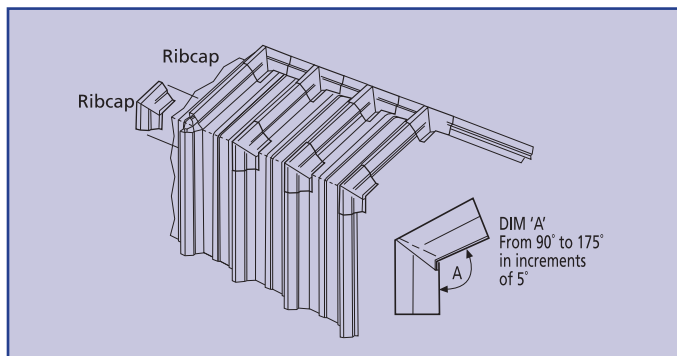
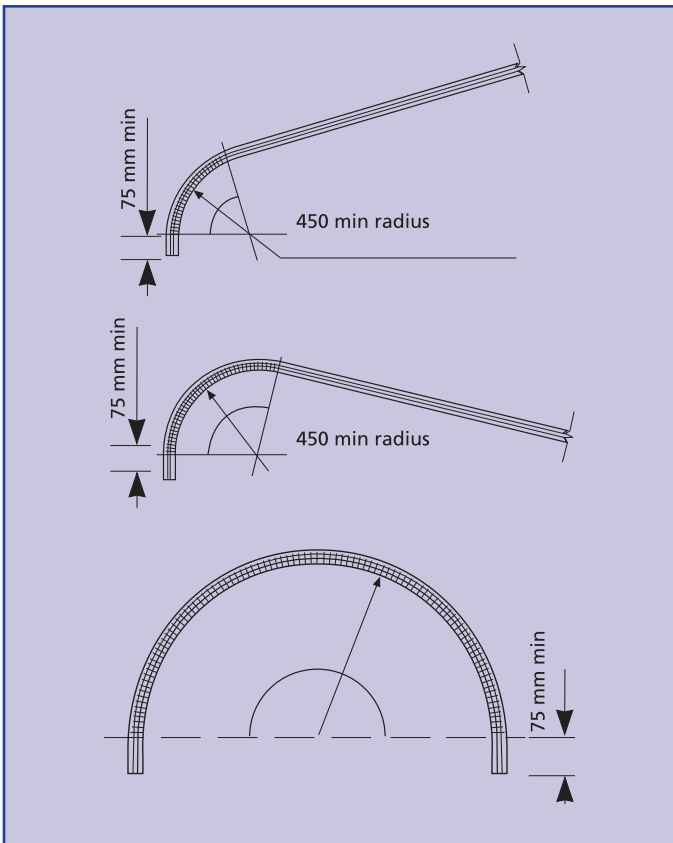


# Additional applications

## Sheet lengths

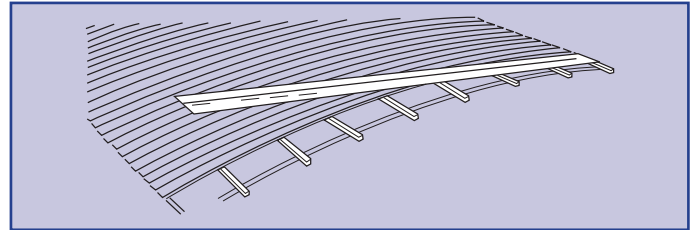
Klip-Lok 406™ Aluminium is available ex-factory in sheet lengths limited only by transport restrictions, normal loads 12.5 m and abnormal loads 18.6 m. Longer lengths can be milled on site, eliminating end laps which are not recommended. End lapping negates the concealed fix concept and no water tightness guarantee can be given. End lapping reduces the life expectancy of the roof, due to corrosion.

## Bullnosing and cranking



## Curving & Springing

Klip-Lok 406™ can be curved to any radius over 800 mm by increasing the distance between the “cranking” indentations across the sheet. Klip-Lok 406™ can be sprung to a minimum radius of 36 mm convex or 40 m concave.



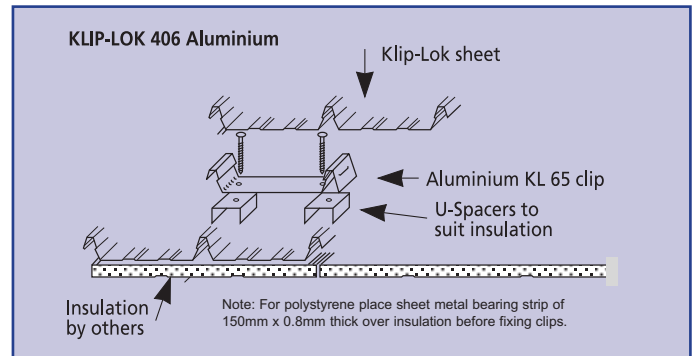
### Note

Consideration for road transport has to be taken into account.

Refer to GRS Installation manual for detailed dimensions and fixing instructions.

Site cranking for milled sheets is available on application.

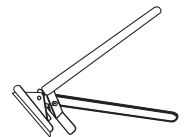
## Thermapan assembly



## Tools



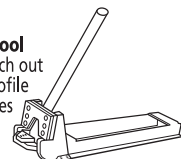
**Turn-down tool**  
Used to lip sheets downward at the eaves to prevent water flowing back on the underside of the sheets.



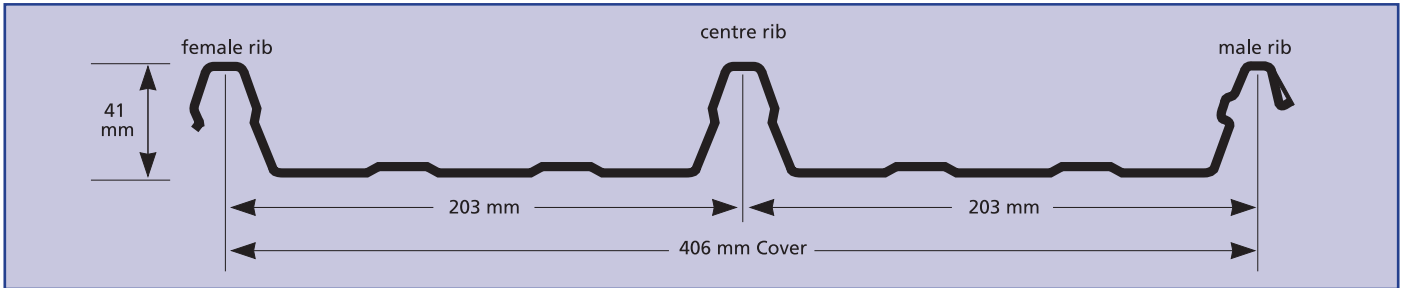
**Turn-up tool**  
Used to stop end sheets upward at the top of the roof slope to prevent water being blown up and over sheet end.

### Notching tool

Used to notch out sheet rib profile in the flanges of flashings to fit over sheet ribs.



# Profile : Klip-Lok 406™ Aluminium



## Load span table

The recommended purlin support centres are based on the following design criteria and obtained through testing:

	Ultimate Superimposed Distributed Load	Ultimate Uplift Load
<b>ROOFS</b>	1.50 kN/m <sup>2</sup>	1.60 kN/m <sup>2</sup>
<b>WALLS</b>	0.75 kN/m <sup>2</sup>	

## Drainage table

Maximum roof run (in metres) for roof slopes and rainfall intensities shown. These figures are based on unrestricted, free flow of water.

Roof Slope	Rainfall Intensity mm/h			
	250	300	400	500
1 in 50 (1°)	64	53	40	32
1 in 30 (2°)	80	66	50	40
1 in 20 (3°)	94	78	58	46
1 in 12 (5°)		95	70	56
1 in 7.5 (7.5°)			83	66
1 in 6 (10°)			91	73

## MAXIMUM ALLOWABLE SUPPORT SPACINGS

	0.7 mm	0.8 mm
<b>Roofs</b>		
Single Span	1.200 m	1.400 m
End Span	1.500 m	1.900 m
Internal Span	1.800 m	2.200 m
Cantilever	0.100 m	0.180 m
Cantilever (gutter attached)	0.300 m	0.400 m
<b>Walls</b>		
Single Span	1.400 m	1.600 m
End Span	1.800 m	2.200 m
Internal Span	2.100 m	2.400 m
Cantilever	0.150 m	0.300 m
Normal mass kg/m <sup>2</sup>	2.77	3.17

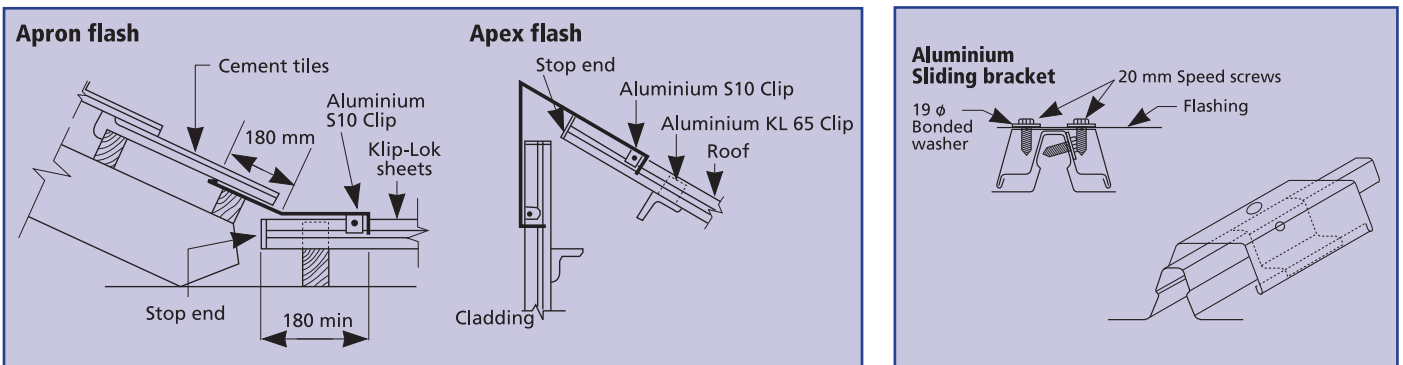
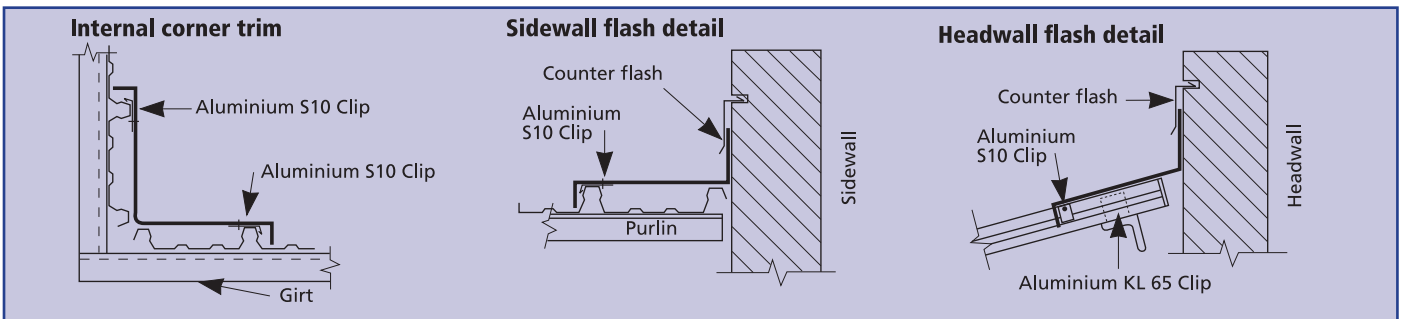
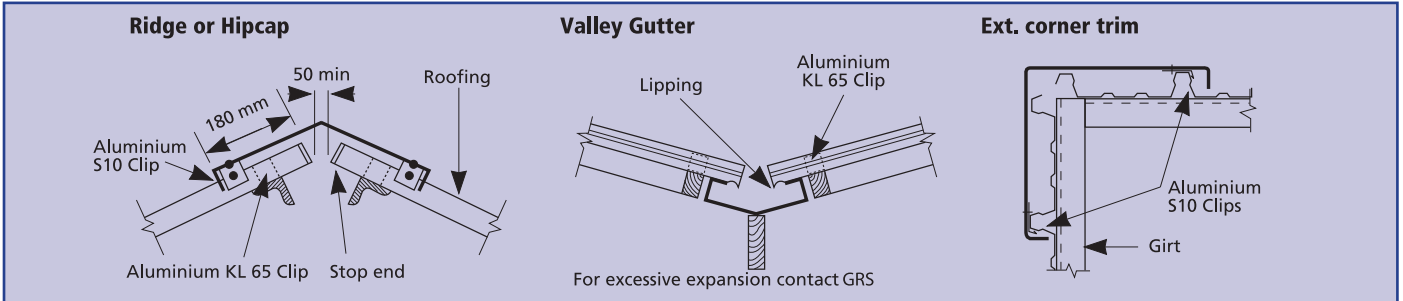
*The grade of aluminium has been specially developed for Global Roofing Solutions to give increased properties which are achieved with higher additions of magnesium during casting. This increases solid solution strengthening.*

## Thermal Expansion and Contraction

The thermal expansion of aluminium necessitates the use of sliding brackets on sheet lengths of 20 m and longer.

# Popular flashings

Available in 0.7 mm or 0.8 mm thick in mill finish or colour coated.



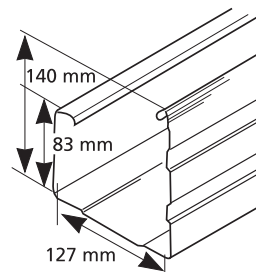
Please visit our website or contact GRS for standard flashing details

**\* When sheet lengths are over 20m flashings must be fixed to sheets using sliding brackets.**

## Gutters and fascias

Klip-Lok 406™ in addition offers a fascia gutter and a fascia capping, with horizontal stiffening ribs rolled in, giving a clean unbroken surface.

Used both as gutter and barge capping, the fascia gutter permits clean lined eaves for an attractive finish. With the gutter attached by means of verandah bolts to the sheeting trough and the concealed support clip pop rivetted to the narrow flute of the sheeting at 1218 mm centres.



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