

GRS Klip-Lok 406

# Global Roofing Solutions Klip-Lok 406™

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GRS Klip-Lok 406

GRS Klip-Lok 406 01/21



GLOBAL ROOFING SOLUTIONS

BrownBuilt | HH Robertson



# Typical Specification

## Materials

The roofing shall be Klip-Lok 406 profile, roll-formed in continuous lengths in one of the materials in the table below. Klip-Lok 406 is obtained from Global Roofing Solutions.

Material	Steel	Colour One Side	Colour Two Side
Galvanised Z275	ISQ 550	_____	_____
Chromadek® Z200		✓	Special
Zincalume® AZ150	G550	_____	_____
Clean COLORBOND™ AZ150		✓	Special
ZincAL® AZ150	G550	_____	_____
COLORPLUS® AZ150		✓	Special

## The Profile

The profile is roll-formed from certified steel complying with (select from steel column in above table). The profile shall have 3 trapezoidal ribs at 203mm centres giving a nett cover of 406mm. The male rib shall have spurs to ensure a positive double interlocking action at side-laps. Each pan shall incorporate two stiffener ribs.

## Assembly

It is recommended that Klip-Lok 406 sheeting be laid by an approved contractor in strict accordance with the manufacturer's specifications. When using a GRS (Brownbuilt) Approved Contractor, a five year guarantee on site-workmanship and water tightness may be issued after approval by Global Roofing Solutions.

## Flashings

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 on S10 clips. All these operations must be performed with special tools available from the supplier.

## Site Handling

Klip-Lok 406 sheets should be suitably supported clear of the ground under well ventilated cover, away from risk of damage by building operations, contact with cement, dust, lime and abrasive dust, until required to be installed.

## Cleaning Up

The complete roof must be kept clean and free of any swarf and debris.

## Quality Assurance

The manufacturer shall be assessed and certified as complying with ISO 9001:2015 Quality Management System.

## Translucent Sheeting

The Klip-Lok 406 profile is available in Polycarbonate.

## Solar Clamp

Please refer to GRS PV Clamp brochure.



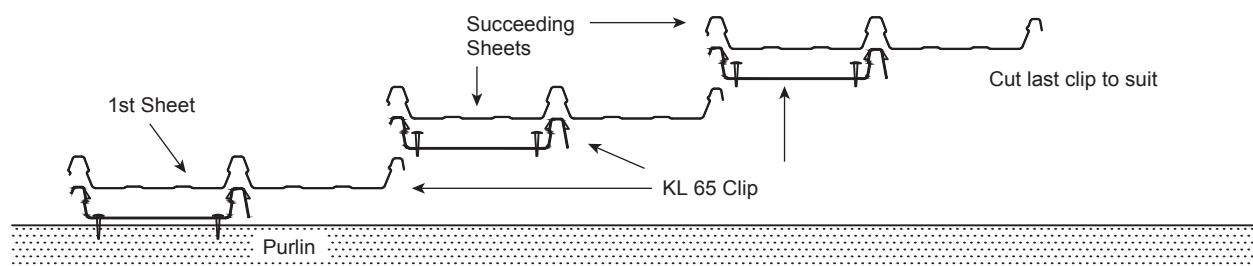
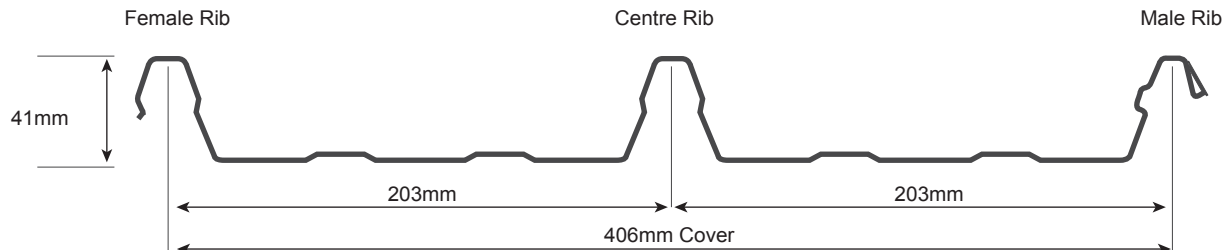
## Note

A GRS / Brownbuilt installation warranty will only be honoured if the GRS KT-PV Clamp is used when installing photovoltaic panels.



# The Concealed Fixing Concept

## Klip-Lok 406 Profile



### Fasteners

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

#### For Steel Purlins

At least 3 threads should protrude past the support.

#### 1mm to 4,5mm thick

No.10 - 16 x 16mm long self-drilling Wafer head PH2 screws  
#3 drill point.

#### 5mm to 12,5mm thick

No.12 - 24 x 38mm long self-drilling Wafer head PH3 screws  
#5 drill point.

#### For Timber Purlins

The screw should penetrate the purlin by the same depth recommended as if there were no insulation.

No.10 - 11 x 45mm long self-drilling Wafer head PH2 screws.  
Type 17 drill point.

#### Where insulation is installed

Between purlin and sheeting, the length of screws should be increased depending on the compressed thickness and density of the insulation. Please refer to the GRS Installation Manual for additional information on insulation fixing details.

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

### Note

Where screws exceed 45mm long, they should be No.12 with a PH3 head.

KL 65 clip



### Note

Fasteners must be selected to match the life expectancy of the roofing and cladding material. The coating class for fasteners, complying with SANS 1273, should be used in conjunction with all roofing and cladding material. For a full range of compatible fasteners, please refer to the GRS Installation Manual.



# Additional Applications

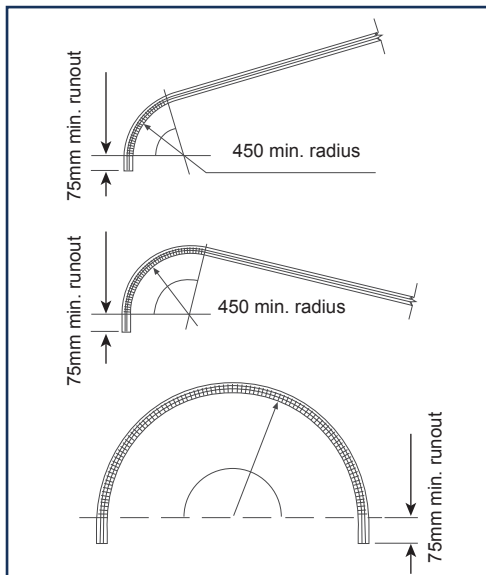
## Sheet Lengths

Klip-Lok 406 is available, ex-factory, in sheet lengths limited only by transport restrictions, normal loads 12.5m and abnormal loads 18.6m. 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.

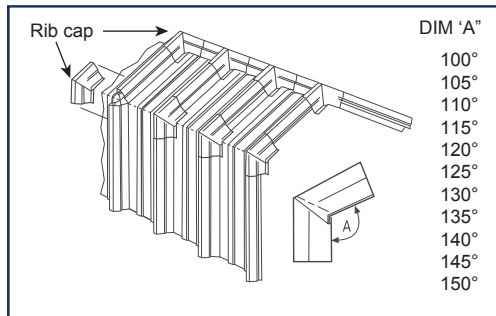
## Bullnosing and Cranking



### Note

Reverse cranking is not possible.

## Rib Cap Detail

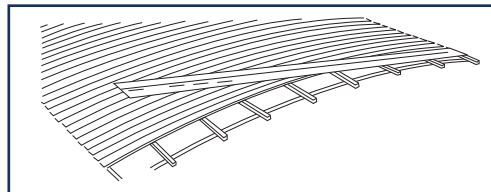


## Curving

Klip-Lok 406 can be crank curved (convex only) to any radius over 800mm by increasing the distance between the “cranking” indentations across the sheet.

## Springing

Klip-Lok 406 can be sprung to a minimum radius of 36m convex or 40m concave with internal spans for purlins at 1.5m maximum.



### Note

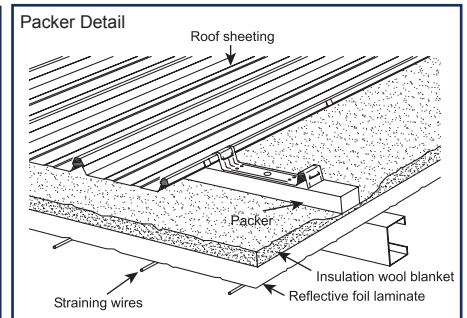
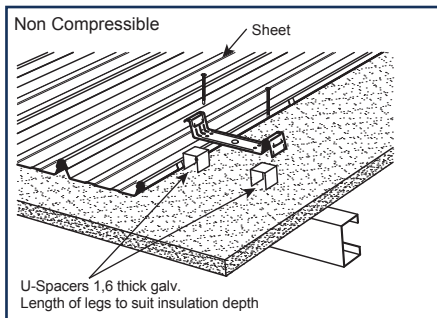
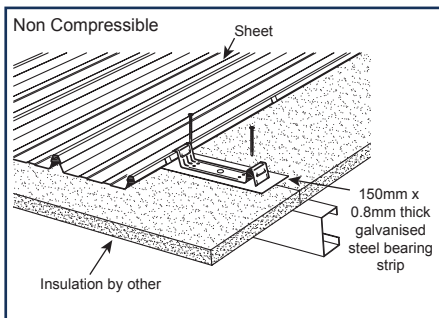
Consideration for road transport has to be taken into account.

Refer to the GRS Installation Manual for detailed dimensions and fixing instructions.

Site cranking for milled sheets is available on application.



## Insulation



### Note

Refer to installation manual for correct application for type of insulation, dependant on purlin centers, sheet lengths and torque setting of power tool used.

# Profile: Klip-Lok 406™

## 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
ROOFS	1.50 kN/m <sup>2</sup>	1.60 kN/m <sup>2</sup>

### Note

At 1° slope, all roof supports must be in the same plane as slight variations can result in a zero or negative fall. This may even occur after completion of the building over time. Where possible it is wise to design for a minimum of 2° slope to ensure a positive fall.

## Drainage Table

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

Klip-Lok 406 Roof Slope	Rainfall Intensity mm/h				
	200	250	300	400	500
1°	152m	121m	101m	75m	60m
2°	203m	162m	135m	101m	81m
3°		198m	165m	123m	99m
5°			214m	161m	128m
7.5°				197m	158m
10°					184m

## Maximum Allowable Support Spacings

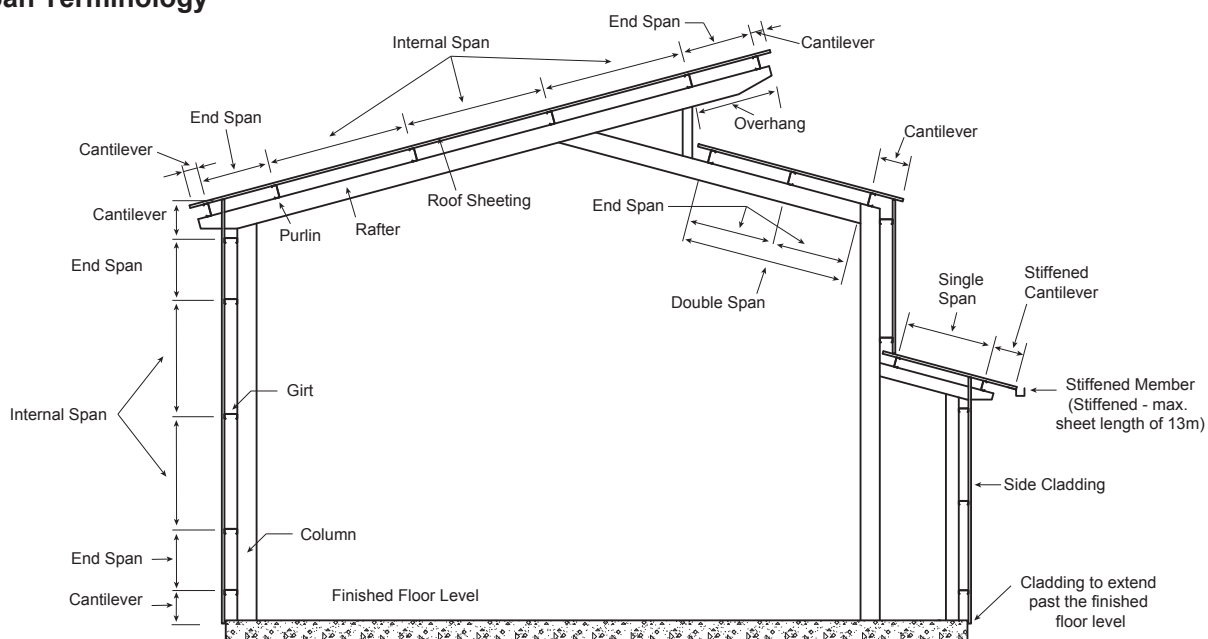
Type of Span	0.47	0.5	0.53	0.55	0.58
<b>Roofs</b>					
Single Span	1.300m	1.400m	1.500m	1.800m	1.800m
End Span	1.600m	1.700m	1.900m	2.100m	2.100m
Internal Span	1.900m	2.000m	2.300m	2.500m	2.500m
Cantilever (unstiffened)	0.150m	0.180m	0.180m	0.200m	0.260m
Cantilever (stiffened- max. sheet length of 13m)	0.350m	0.400m	0.400m	0.450m	0.600m
Nominal Mass kg/m <sup>2</sup>	5.31	5.92	5.98	6.43	6.78

Available in Galvanised, Zinalume®, Zinal® and Chromadek®, Colorbond™, Colorplus®

- Spans don't apply to natural sprung sheets. Consult GRS Technical Department.

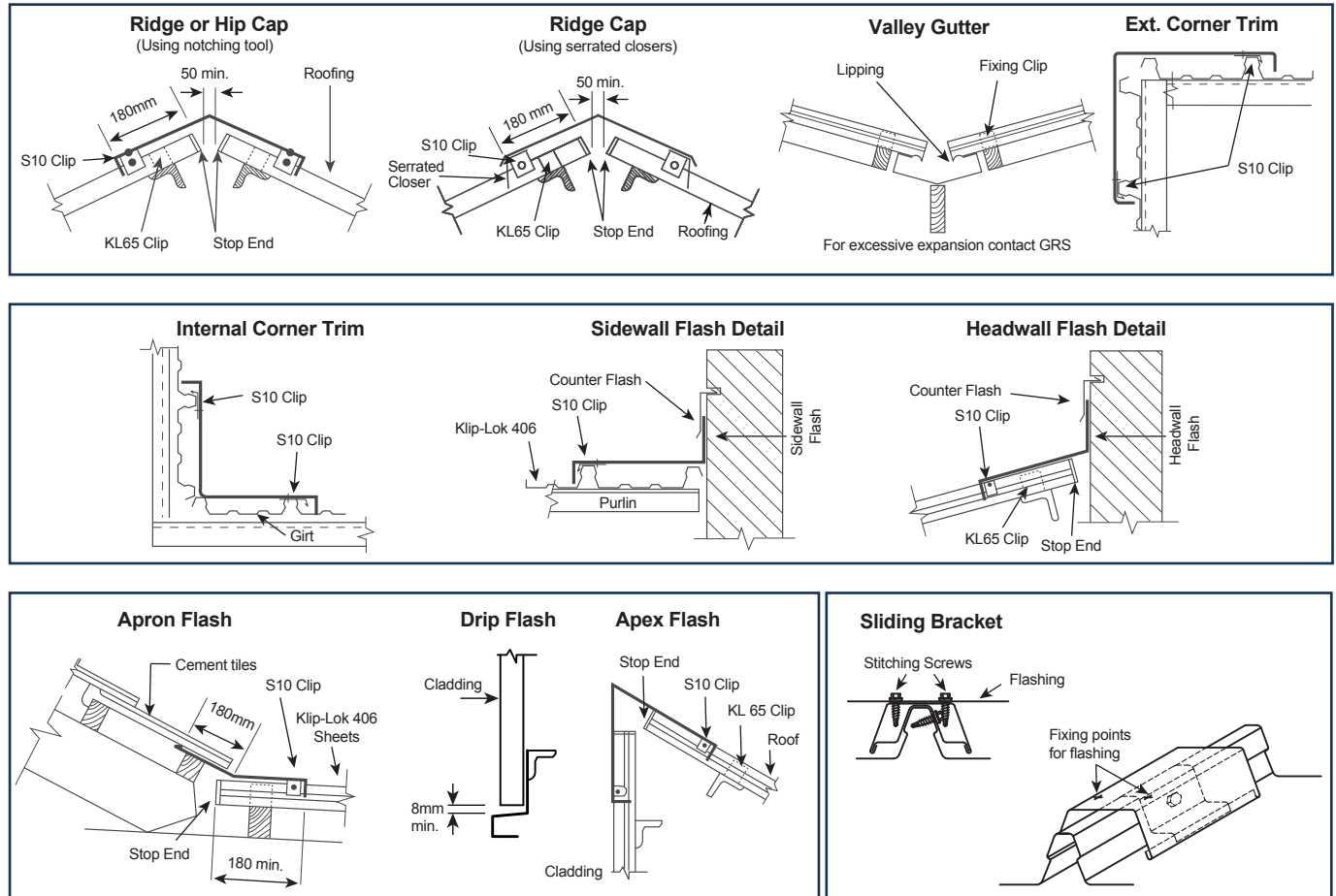
- Spans for timber purlins to be in accordance with SANS 10400

## Span Terminology



# Klip-Lok 406 Popular Flashings

Available in 0.58mm / 0.8mm thick galvanised Z275 steel, 0.53mm thick Zinalume® AZ150 or 0.55mm thick ZincAL® AZ150. Or with a colour option Chromadek® (Galvanised Z200), Clean COLORBOND™ (Zinalume® AZ150) or COLORPLUS® (ZincAL® AZ150) finish to one / two sides.

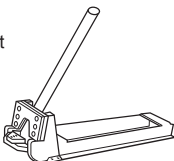


**\* When sheet lengths are over 30m flashings must be fixed to sheets using sliding brackets.**

## Tools

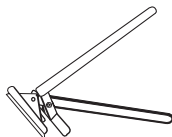
### Notching Tool

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



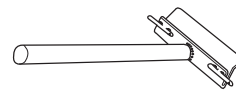
### Turn-up Tool

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



### Turn-down Tool

Used to lip sheets downward at the eaves to prevent water flowing back on the underside of the sheets.



Please visit our website or contact GRS for standard flashing details

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