SAFINTRA

PRODUCT SPECIFICATION MANUAL

A member of SAFAL GROUP

SAFINTRA

THE TRUSTED NAME FOR WORLD-CLASS BUILDING SOLUTIONS

Safintra offers a wide range of sheeting profiles including the highly respected Saflok® and Newlok™ concealed fix systems.

It also supplies a full range of roof system accessories and associated products for a complete cladding solution. These include made-to-order flashings, ventilators and louvres, as well as warranted Fixtite™ fasteners, the Saftherm™ range of insulation products as well as other specialist components.

Safintra offers full technical support services from all service centres.

Affiliated companies throughout SADC, Southern and Eastern Africa.
Email: info.safintrasa@safalgroup.com | **www.safintra.co.za**

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Note: This document serves as a reference guideline. Refer to Safintra.co.za for direct/project specific enquiries or updates/current info that can supersede any printed document (including this manual).

Saflok 700®
Getworth - Western Cape

Concealed Fix Roofing Systems

CONCEALED FIX ROOFING INTRODUCTION

Saflok® and Newlok™ are both concealed fix or secret fix profiles as the anchoring system is not visible. This allows unrestrained thermal expansion and contraction.

The difference between concealed fix (Saflok®) and standing seam (Newlok™) is that the Newlok™ profile can be seamed either mechanically or by hand, giving it additional wind hold-down capability.

Concealed fix roofing is designed for very low pitched roofs. Clips under the sheet hold it down and therefore the sheet is not punctured with fasteners and remains completely watertight, even at a very low slope. The securing clips are fixed over the male rib of the previous sheet and fastened to the purlins. The female rib of the next sheet is mechanically engaged over the clip and male rib.

A concealed fix sheet expands and contracts along with the clips as the temperature changes. This system is ideal for long length sheets on industrial and commercial buildings.

End lapping of concealed fix profiles in the same plane is not advised. Due to the geometry of the concealed and standing seam profiles, it does not allow for a clear end/head spacing. Typical lapping risks involve coating/paint damage, water tightness issues by capillary action, corrosion and the clipping mechanism can be compromised.

SAFLOK 700® concealed fix roofing

SAFLOK 410® concealed fix roofing

NEWLOK™ standing seam roofing

Note: Tanking and lipping is required for optimal performance.
Refer to Required Structural Tolerances (page 73).

SAFLOK 700®
concealed fix roofing

Saflok 700® is a concealed fix profile with an effective cover width of 700mm. It is an angular interlocking trapezoidal rib profile, and can be roll-formed on site.

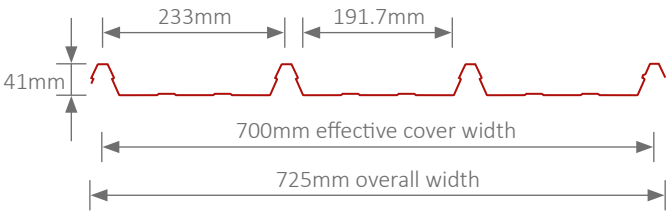
SAMPLE SPECIFICATION

Safintra 0.50mm thick Saflok 700® Colorplus® AZ 150 interlocking roof sheeting fixed to steel internal purlins at 1900mm centres and ridge/eave purlins at 1700mm centres using Saflok 700® clips which are fastened to steel purlins with Fixtite™ or Safintra approved wafer head self-tapping fasteners, all in accordance with the manufacturer's recommendation.

The sheeting will be a double interlocking concealed fix Saflok 700® profile as manufactured by Safintra. Roll-forming in continuous lengths from certified G550 steel.

The profile shall be roll-formed with 4 ribs and centres not exceeding 233mm and a cover width of 700mm. The male rib is to include spurs to ensure a double interlocking action with adjacent sheets. The minimum rib height will be 41mm. Two stiffening ribs are incorporated in each pan.

Female rib Male rib



MATERIAL OPTIONS

Aluminium-Zinc coated steel	Gauge (mm)
AZ 100 / 150 / 200 G550 Unpainted or pre-painted	0.47 0.50 0.53 0.55 0.58 0.80*
Aluminium	**Gauge (mm)**
Unpainted or pre-painted	0.80
Zinc-coated steel	**Gauge (mm)**
Z200 / Z275 ISQ550 Unpainted or pre-painted	0.50

Other gauges are available on special request. All material is subject to availability.
** Available in G275/ISQ300 only.*

Note 1: When installing Saflok 700® as side cladding, it is advisable to orientate sheets in a single direction, as this may have a visual impact when reflected in direct sunlight. The direction of the "dot matrix" branding that appears at regular intervals on the backing coat, can be used as a practical guide on site for roofing crews.

Note 2: Saflok 700® can be curved or bullnosed to a minimum internal radius of 450mm. Reverse cranking is not possible.

Note 3: Note that when using Aluminium material on galvanized steel purlins, the use of an isolation tape or similar to prevent the bridging of the two dissimilar materials is recommended. Should the two metals have direct contact it will ultimately result in the manifestation of galvanic corrosion, and the service life of the Aluminium will be compromised.

PURLIN SPACINGS

Span tables are for Saflok 700® with light foot traffic only. It is based on 1.5kN downward load and 2kPa negative wind loading. The span table below refers to the maximum recommended spans. For further information, consult Safintra's Technical Department.

Gauge (mm)	0.47	0.50	0.53	0.55	0,58	0.80	0.80
Material	Aluminium-Zinc coated steel	Aluminium-Zinc coated steel	Aluminium-Zinc coated steel	Aluminium-Zinc coated steel	Aluminium-Zinc coated steel	Aluminium-Zinc coated steel	Aluminium
Roofs	**mm**	**mm**	**mm**	**mm**	**mm**	**mm**	**mm**
Single span	1400	1500	1700	1800	1900	2300	1400
End span	1600	1700	1900	2000	2100	2500	1600
Internal/double span	1900	2200	2300	2400	2500	2700	1800
Cantilever	150	200	200	250	250	250	100
Side cladding							
End span	2200	2300	2500	2600	2700	2800	2200
Internal span	2400	2500	2700	2800	2900	3000	2400
Cantilever	150	200	200	250	250	250	100
Approximate mass (kg/m^2)	4.61	5.01	5.31	5.51	5.81	8.01	2.96

*The above span table is designed for **inaccessible roofs**, in order to sustain imposed gravitational loads during installation and routine maintenance. Movement of maintenance crews to be restricted to dedicated walkways and landing areas. During installation, foot traffic shall be controlled and lateral movement effected across purlin, with up-slope traffic limited to the flat profile pan. End spans are critical, and movement in these areas should be restricted as far as practicable. Design requirements exceeding the above may be considered in consultation with the Safintra Technical Department.*
** 0.80 Aluminium-Zinc coated steel is rolled in G275.*

Saflok 700® clips are calculated at 330g per clip. You will require approximately 1.5 clips per m². The Saflok 700® Clip 35 (as a whole) and the anchor mechanism are separately design registered with the following numbers: For the complete clip: South African Design Application. No. F2017/00455; and for the anchor mechanism: South African Design Application No. F2017/00456*.

DRAINAGE TABLE

Peak rainfall intensity (mm/h)	Roof slope		
	1:30 (2°)	1:20 (3°)	1:12 (5°)
150	169	207	268
200	127	155	201
250	100	124	161
300	85	104	134
350	72	89	115
400	63	78	100
500	51	62	80

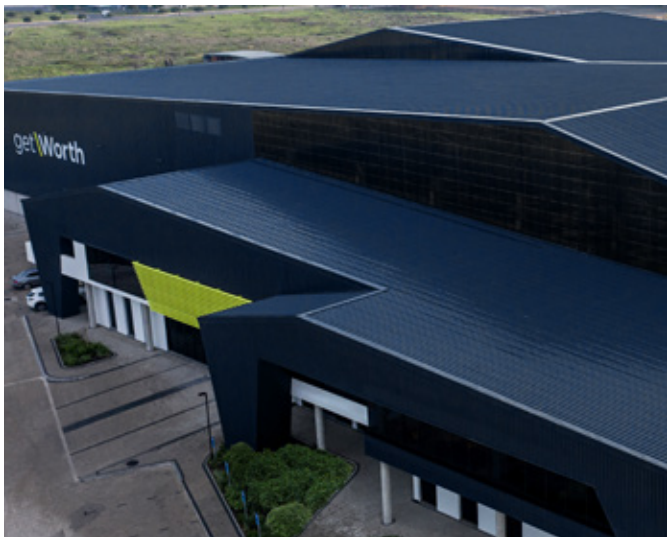
Maximum roof sheet length (m).

Note 4: Concealed fix side cladding must be pierce fixed for prevention of sheet movement due to gravity. Pierce fix the top of the sheets. Internal pierce fixing may be necessary on longer sheets (in consultation with the Structural Engineer). Cladding is to be fixed in the pan of the sheet with #12 x 25mm Fixtite™ fasteners.

LENGTHS AND ROOF PITCH

Saflok 700® can be ordered in any practical length as per customer requirements. On-site rolling is recommended for lengths in excess of 13.2 metres, limited by space constraints and building design. The minimum roof pitch when using Saflok 700® is 2°.

Clip-in marks and/or faint repetitive waviness, commonly referred to as oil canning, may be witnessed occasionally. This does not indicate any mechanical defect in the sheet. This common phenomenon is discussed on page 72.



**Refer to the Safintra Technical Department for more information or raise any enquiries in writing to info.safintrasa@safalgroup.com*

SAFLOK 700®
concealed fix roofing

Fixing Guide

FASTENERS

Where insulation is to be installed, you may need to increase the length of the fasteners given below, depending on the density and thickness of the insulation and packer. When the fastener is properly tightened:

Into metal: There should be at least three threads protruding past the purlin you are fixing to.

Into timber: The fastener must penetrate the timber by at least 30mm.

FASTENERS FOR SAFLOK 700®

	Roof	Flashings
Steel	#10 x 22mm wafer head metal fastener	#14 x 22mm metal stitching fastener
Timber	#10 x 45mm wafer head timber fastener	

SAFLOK 700® CLIPS

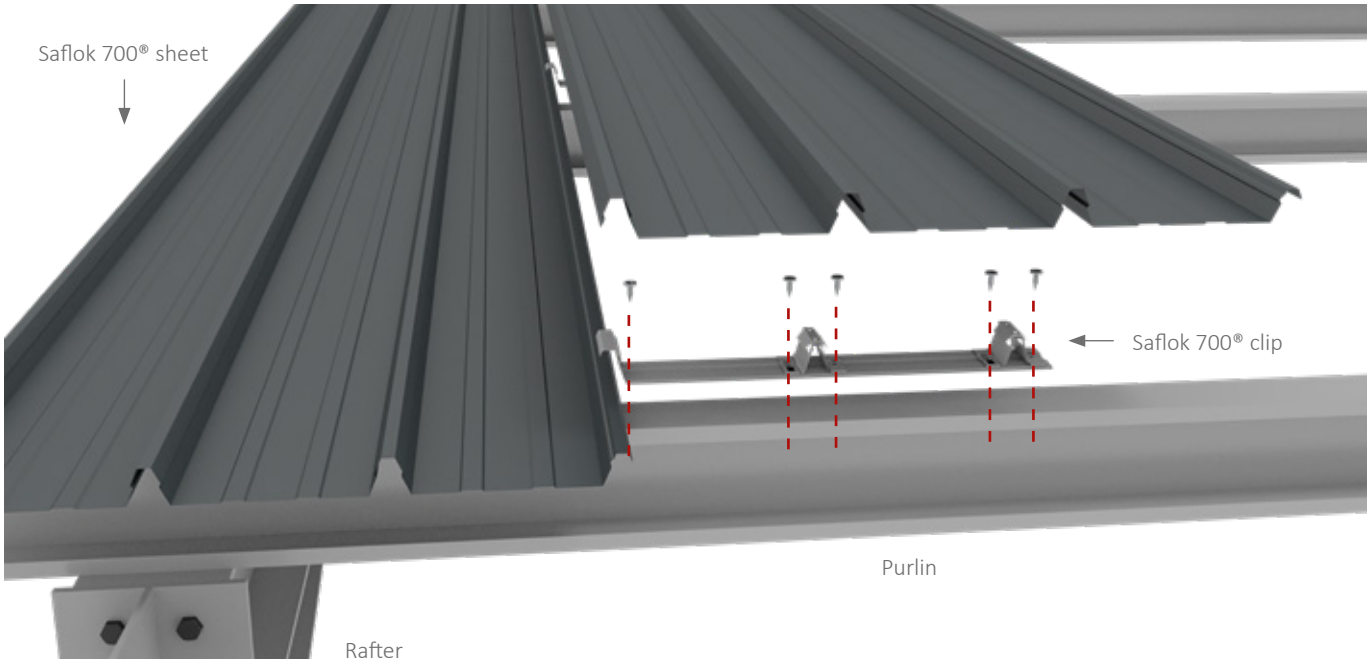
The **Saflok 700® Clip 21** incorporates two anchors to clasp the two inner ribs and a dual action gooseneck to positively hold down the male-female joint.

- The Saflok 700® Clip 21 is the recommended clip for securing Saflok 700® onto timber or steel purlins.
- The patented design is strong and durable.
- Suitable for installation on a tubular frame.
- The entire clip is manufactured from 0.80mm Aluminium-Zinc coated steel for compatibility with sheeting.
- The extended base plate is self-aligning, which makes it better suited for timber application. Timber structures can be prone to slight surface deformation that may negatively impact the secure anchoring of the clip.
- Are to be secured with three fasteners.
- A clip must be installed on each and every purlin.

The fully interlocking **Saflok 700® Clip 35** incorporates two anchors to clasp the two inner ribs and a dual action gooseneck to positively hold down the male-female joint.

- The Saflok 700® Clip 35 demonstrates an excellent hold down capability in negative wind uplift load tests.
- The entire clip is manufactured from 0.80mm Aluminium-Zinc coated steel for compatibility with sheeting.
- Stiffener ribs on the base plate add formidable strength, specifically over the gooseneck.
- Full width engagement on the gooseneck male rib joint.
- Five fastening points for strength.
- Engineer-designed geometry of anchor unit for optimal performance under high wind loads and foot traffic.
- Are to be secured with five fasteners.
- A clip must be installed on each and every purlin.

Note 5: Please note that clips can be manufactured in alternative metals to ensure metal compatibility.



SAFLOK 700® INSTALLATION

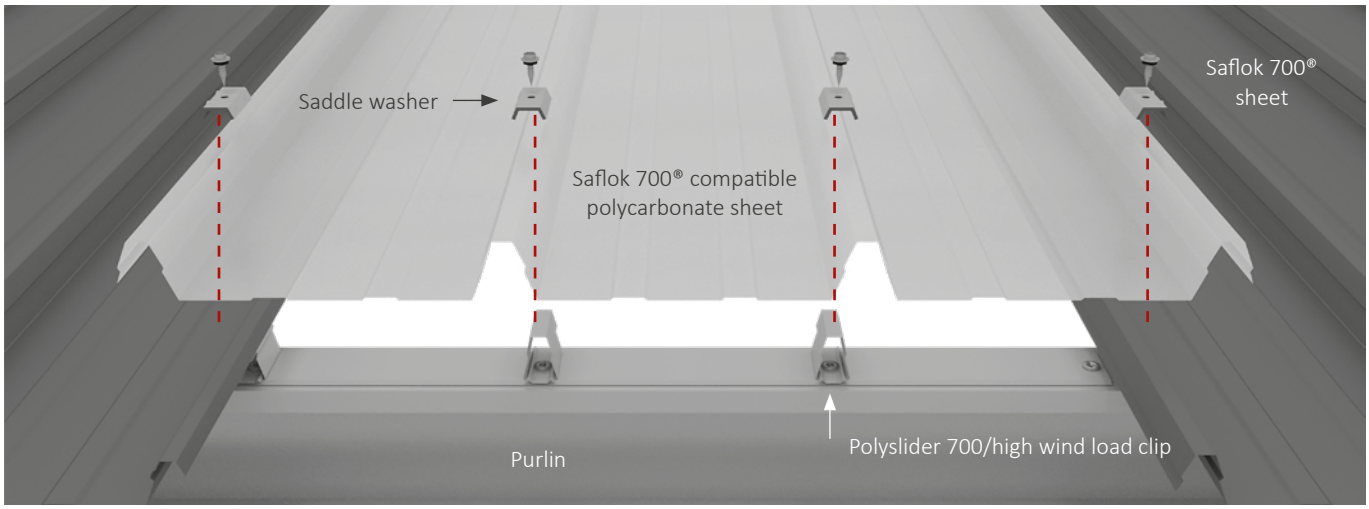
1. Starting with the female rib first, align the first row of clips and fasten on all fastening positions.
2. Lay the first sheet down over the clips. Starting at the eave side, clip the sheet onto the clips by first engaging the anchors and then engaging the female rib over the gooseneck and male rib.
3. Engage the gooseneck of the next row of clips over the male rib and fasten in all fastener positions. Ensure the male leading edge has adequate support (might require slight lifting of the male rib or rotation of the clip). Repeat from step 2.

Note 6: During installation, clean the roof daily by removing all swarf, pop rivets and unused fasteners or any other debris.

Note 7: A system performance warranty will be applicable provided that the installation has been performed by a Safintra Approved Roofing Contractor and the project has been inspected by Safintra.

SAFLOK 700®
concealed fix roofing

Specialised Fixing Accessories



POLYCARBONATE AND HIGH WIND LOAD INSTALLATION DETAILING

(High Wind Zones and Coastal Wind Belts)

Polysliders are specifically designed for polycarbonate or fibreglass sheeting and allow for a large amount of thermal expansion. The components are designed to work in conjunction with a saddle washer which is positively fixed to the sliding bracket. This clip is also used for Saflok 700® sheeting around the perimeters and exposed areas of the building, where high wind load conditions prevail.

Overhangs are prone to a build up of wind pressure and are considered to be the weak point of any roof. All overhangs larger than 600mm need to be positively fixed with a high wind load clip or saddle washer (always allowing for thermal cycling). These include canopies, walkways, lean-to roofs, loading bays and decorative roofs.

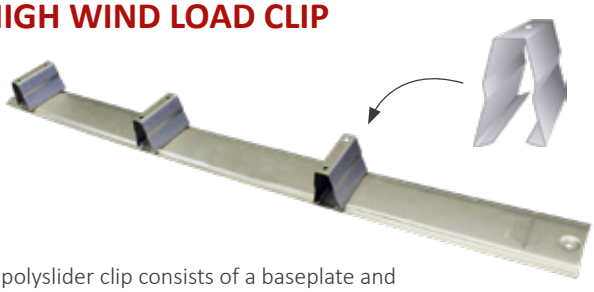
1. Align the first row of the polyslider baseplates and fasten through the pre-drilled holes in the three positions where the slider brackets attach.
2. Connect the slider brackets to the base plate and lay the first sheet over the slider brackets.
3. Place the saddle washers over the first three ribs above the purlin, and fasten the saddle washers through the ribs into the slider brackets.
4. Place the next row of baseplates and fasten. Overlap the end fastening positions to self-align the row of baseplates. Repeat from step 2.

SAFLOK® SADDLE WASHER

The Saflok® saddle washer works with the polyslider to positively fix the sheeting (polycarbonate or steel) onto the polyslider clip without restricting thermal expansion. The saddle washers are cold bonded to a 3mm Ethylene Vinyl Acetate (EVA) seal, which prevents ingress of water through the fastener hole.

Note 8: The bonded saddle washer can only be fixed from the top.

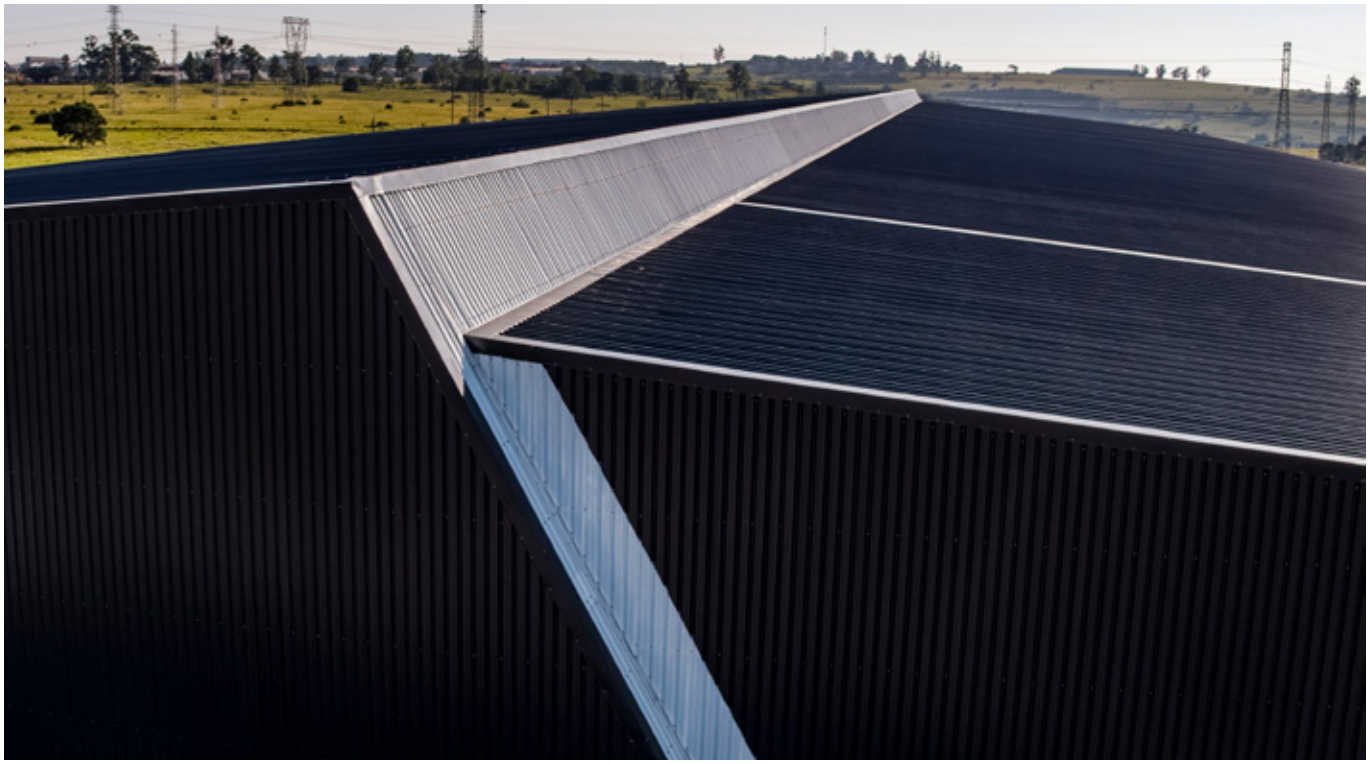
POLYSLIDER 700 CLIP - HIGH WIND LOAD CLIP



The polyslider clip consists of a baseplate and three slider brackets. Clip available in Aluminium-Zinc coated steel.

Note 9: All polycarbonate sheet installations (including, but not limited to in-plane installations) with Safintra roofing/cladding profiles should be done in accordance to SANS 10237:2023 (Annexure C Rooflights).

Note 10: In a springing or draping application, consideration should be given for the inclusion of high wind load brackets at the eaves.



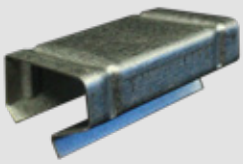
Specialised Flashing Installation

Safintra recommends the use of flashing slider brackets for very long sheets. Please consult our Technical Department for assistance.

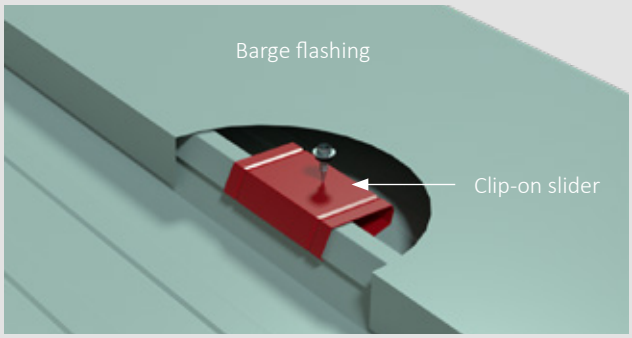
When installing bull-nosed sheeting or Aluminium sheeting, the use of flashing slider brackets is recommended for sheets with lengths in excess of 15 metres. Please consult Safintra's Technical Department for assistance.

Sheet length (m)	Transverse flashings (ridge, apex, headwall)	Longitudinal flashings (barge, sidewall)
<30	F10 bracket - Internal ribs only	F10 bracket - Every 500mm
>30	2-piece slider - Internal ribs only	Clip-on slider - Every 500mm

CLIP-ON SLIDER FOR FLASHINGS

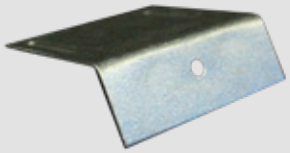


The clip-on slider clips onto the rib of the Saflok® profile to fix longitudinal flashings (barge, sidewall) to the sheeting without the need for fasteners piercing the sheet. The clip will allow for more thermal expansion than the F10 bracket. Clips are available in Aluminium-Zinc coated steel or Stainless Steel Grade 304.



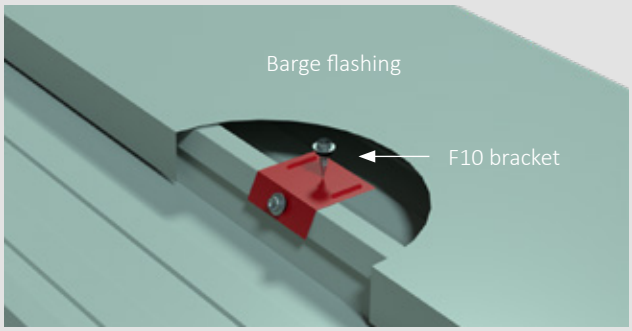
Clip-on slider bracket for longitudinal flashings on Saflok® profiles.

F10 BRACKET FOR FLASHINGS

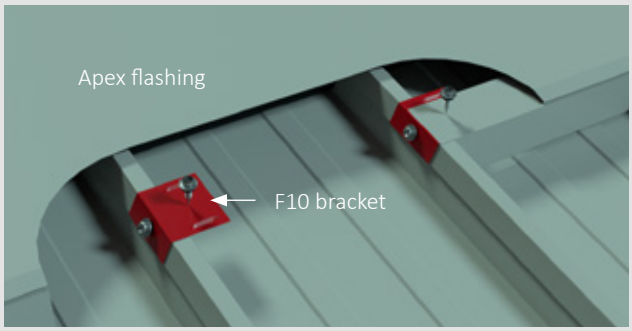


F10 brackets are used as an intermediate anchoring mechanism for flashings, thereby eliminating direct penetration. Brackets are available in Aluminium-Zinc coated steel, Stainless Steel Grade 304 or Aluminium.

Note 11: This clip is positively fixed. Care should be taken when detailing industrial length sheeting and flashings due to thermal expansion.



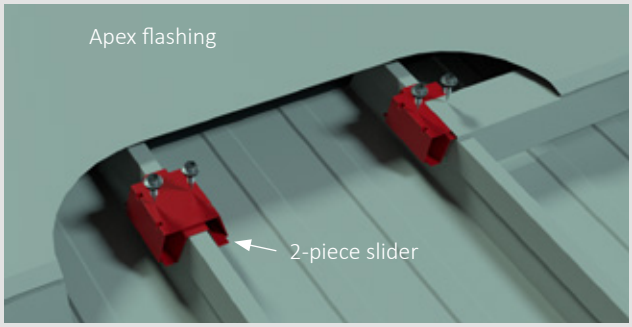
F10 bracket for longitudinal flashings on Saflok® profiles.



F10 bracket for transverse flashings on Saflok® profiles.

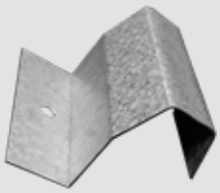
2-PIECE SLIDER FOR FLASHINGS

The 2-piece sliders are used to fix transverse flashings (apex, ridge, headwall) to the sheeting without drilling directly into the sheet. This bracket will allow for up to 50mm of thermal expansion. Sliders are available in Aluminium-Zinc coated steel, Stainless Steel Grade 304 or Aluminium.

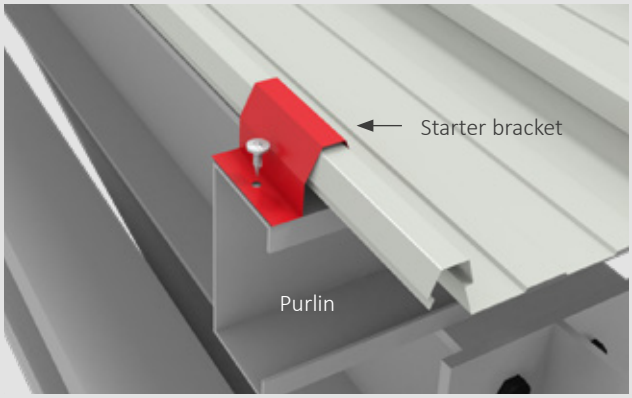


2-piece slider bracket for transverse flashings on Saflok® profiles.

SAFLOK® STARTER BRACKET



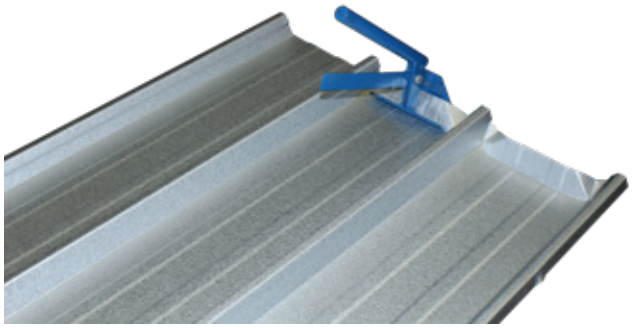
Due to the effects of thermal expansion and contraction, “first sheet” installation should never be attempted by positively fixing the sheet to the structure. The Saflok® starter bracket is used to secure the first and/or last rib of the edge sheet without restricting thermal expansion. Starter brackets are available in Aluminium-Zinc coated steel and Stainless Steel Grade 304.



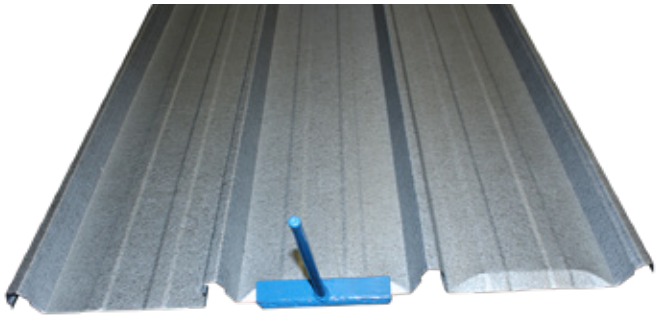
Saflok® starter bracket.

SAFLOK 700® LIPPING AND BENDING TOOL

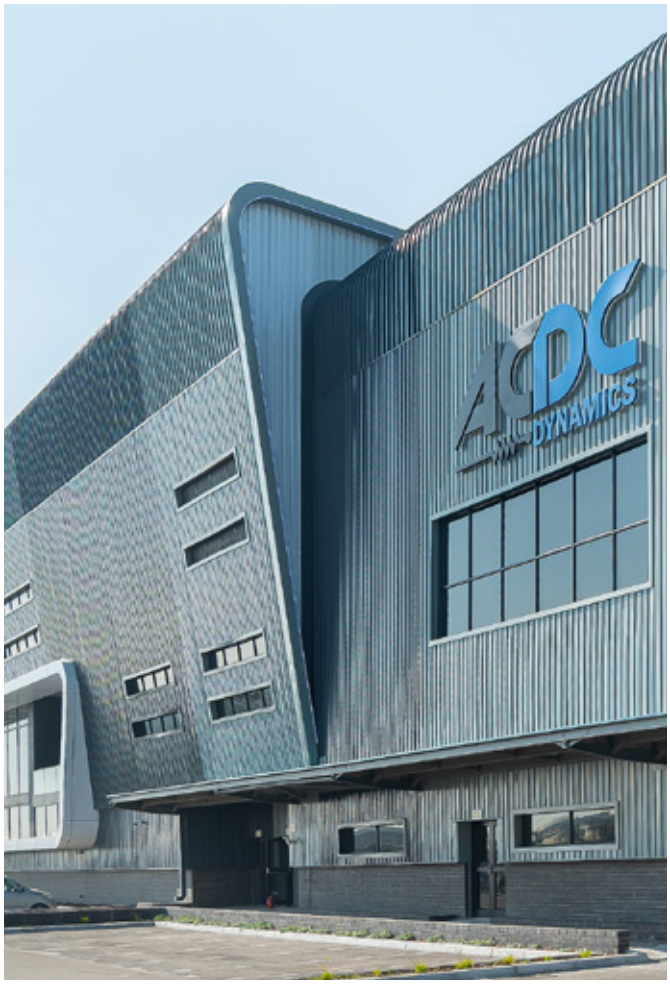
The bending tool is used to bend the pan up on the ridge side of the sheet to create a water barrier (also known as the tanking or turning up of the sheet). The lipping tool is used on the eave side of the sheet to create a turned down lip (also known as the lipping or turning down of the sheet).



Saflok 700® bending tool application.



Saflok 700® lipping tool application.



CRANKING

Saflok 700® sheets can be cranked and bullnosed but not reverse cranked. The minimum radius is 450mm. On-site cranking is available on request.

CURVING

For the Saflok 700® profile natural springing occurs at a 36m radius in the convex and at a 60m radius in the concave. It is important to reduce purlin spacings by 20% when spring curving a roof. Oil canning may be expected.

ROLLING STRAIGHT ONTO A ROOF

It is possible to roll-form straight onto a roof using a scaffold ramp. The limitations are the building height and space needed to roll. A departure angle of 10° is the maximum allowed at any time. A greater angle would damage the sheet when leaving the mill and again when bending to settle onto the roof.

DIMENSIONAL TOLERANCES

A length variation range of +10mm and -0mm, and a width tolerance of ±3mm is permissible.

SAFLOK 410®
concealed fix roofing

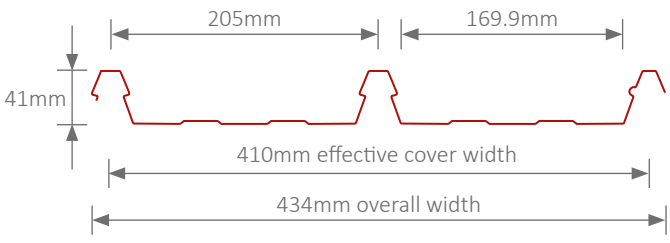
Saflok 410® is a concealed fix profile with an effective cover width of 410mm. It is an angular interlocking trapezoidal rib profile, and can be roll-formed on site.

SAMPLE SPECIFICATION

Safintra 0.50mm thick Saflok 410® Colorplus® AZ 150 interlocking roof sheeting fixed to steel internal purlins at 1700mm centres, and ridge/eaves purlins at 1500mm centres using Saflok 410® clips that must be fastened to steel purlins with Fixtite™ or Safintra approved wafer head self-tapping screws, all in accordance with manufacturer's recommendations. The sheeting will be a double interlocking concealed fix Saflok 410® as manufactured by Safintra, roll-formed in continuous lengths from Aluminium or Aluminium-Zinc coated steel.

The profile shall be roll-formed with 3 ribs at centres not exceeding 205mm and a cover width of 410mm. The male rib is to include spurs to ensure a double interlocking action with adjacent sheets. The minimum rib height shall be 41mm. Two stiffening ribs are incorporated in each pan.

Female rib Male rib



MATERIAL OPTIONS

Aluminium-Zinc coated steel	Gauge (mm)
AZ 100 / 150 / 200 G550 Unpainted or pre-painted	0.47 0.50 0.53 0.55
Aluminium	**Gauge (mm)**
Unpainted or pre-painted	0.80
Rheinzink	**Gauge (mm)**
Rheinzink material	0.80
Zinc-coated steel	**Gauge (mm)**
Z200 / Z275 ISQ550 Unpainted or pre-painted	0.50

Other gauges are available on special request. All material is subject to availability.

Note 1: When installing Saflok 410® as side cladding, it is advisable to orientate sheets in a single direction, as this may have a visual impact when reflected in direct sunlight. The direction of the "dot matrix" branding that appears at regular intervals on the backing coat, can be used as a practical guide on site for roofing crews.

Note 2: Saflok 410® can be curved or bullnosed to a minimum internal radius of 450mm. Reverse cranking is not possible.

Note 3: Note that when using Aluminium material on galvanized steel purlins, the use of an isolation tape or similar to prevent the bridging of the two dissimilar materials is recommended. Should the two metals have direct contact it will ultimately result in the manifestation of galvanic corrosion, and the service life of the Aluminium will be compromised.

PURLIN SPACINGS

Span tables are for Saflok 410® with light foot traffic only. It is based on 1.5kN downward load and 2kPa negative wind loading. The span table below refers to the maximum recommended spans. For further information, consult Safintra's Technical Department.

Gauge (mm)	0.47	0.50	0.53	0.55	0.80
Material	Aluminium-Zinc coated steel	Aluminium-Zinc coated steel	Aluminium-Zinc coated steel	Aluminium-Zinc coated steel	Aluminium
Roofs	**mm**	**mm**	**mm**	**mm**	**mm**
Single span	1200	1300	1500	1600	1100
End span	1400	1500	1700	1800	1300
Internal/double span	1600	1700	1900	2000	1500
Cantilever	150	150	150	150	100
Side cladding					
End span	2000	2100	2300	2400	2100
Internal span	2200	2300	2500	2600	2300
Cantilever	150	150	150	150	100
Approximate mass (kg/m^2)	5.26	5.59	5.93	6.15	3.24

*The above span table is designed for **inaccessible roofs**, in order to sustain imposed gravitational loads during installation and routine maintenance. Movement of maintenance crews to be restricted to dedicated walkways and landing areas. During installation, foot traffic shall be controlled and lateral movement effected across purlin, with up-slope traffic limited to the flat profile pan. End spans are critical, and movement in these areas should be restricted as far as practicable. Design requirements exceeding the above may be considered in consultation with the Safintra Technical Department.*
** 0.80 Aluminium-Zinc coated steel is rolled in G275.*

Saflok 410® clips are calculated at 145g per clip. You will require approximately 3 clips per m². The anchor mechanism of the Saflok 410® clip is design registered with South African Design Application No. F2017/00456*.

DRAINAGE TABLE

Peak rainfall intensity (mm/h)	Roof slope		
	1:30 (2°)	1:20 (3°)	1:12 (5°)
150	162	198	256
200	121	148	192
250	97	119	153
300	81	99	128
350	69	85	110
400	61	74	96
500	48	59	77

Maximum roof sheet length (m).

Note 4: Concealed fix side cladding must be pierce fixed for prevention of sheet movement due to gravity. Pierce fix the top of the sheets. Internal pierce fixing may be necessary on longer sheets (in consultation with the Structural Engineer). Cladding is to be fixed in the pan of the sheet with #12 x 25mm Fixtite™ fasteners.

LENGTHS AND ROOF PITCH

Saflok 410® can be ordered in any practical length as per customer requirements. On-site rolling is recommended for lengths in excess of 13.2 metres, limited by space constraints and building design. The minimum roof pitch when using Saflok 410® is 2°.

Clip-in marks and/or faint repetitive waviness, commonly referred to as oil canning, may be witnessed occasionally. This does not indicate any mechanical defect in the sheet. This common phenomenon is discussed on page 72.

**Refer to the Safintra Technical Department for more information or raise any enquiries in writing to info.safintrasa@safalgroup.com*

SAFLOK 410®
concealed fix roofing

Fixing Guide

FASTENERS

Where insulation is to be installed, you may need to increase the length of the fasteners given below, depending on the density and thickness of the insulation or packer. When the fastener is properly tightened:

Into metal: There should be at least three threads protruding past the purlin you are fixing to.

Into timber: The fastener must penetrate the timber by at least 30mm.

FASTENERS FOR SAFLOK 410®

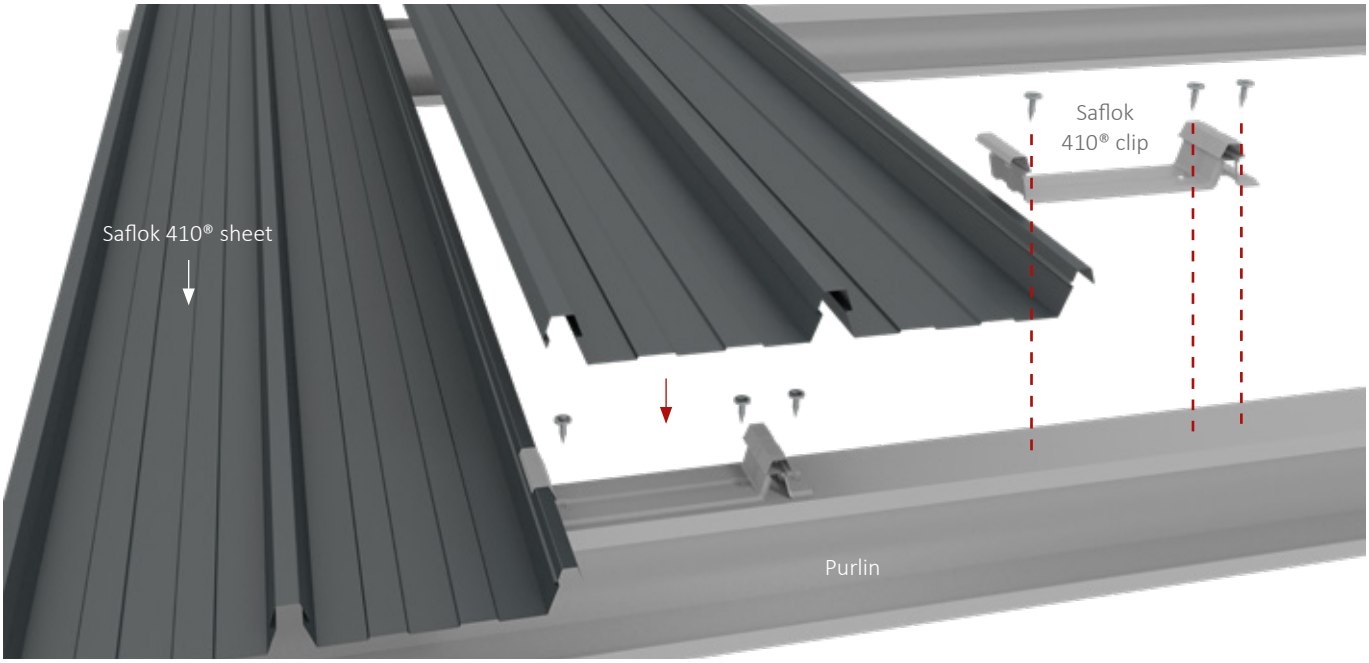
	Roof	Flashings
Steel	#10 x 22mm wafer head metal fastener	#14 x 22mm metal stitching fastener
Timber	#10 x 45mm wafer head timber fastener	

Note 5: Please note that clips can be manufactured in alternative metals to ensure metal compatibility.

SAFLOK 410® CLIP

The fully interlocking **Saflok 410® Clip** incorporates one anchor to clasp the middle rib and a dual action gooseneck to positively hold down the male-female joint.

- Provides full width engagement on the gooseneck male rib joint.
- The Saflok 410® Clip demonstrates an excellent hold down capability in negative wind uplift load tests.
- Engineer-designed geometry of anchor unit for optimal performance under high wind loads and foot traffic.
- Entire clip is manufactured from 0.80mm Aluminium-Zinc coated steel for compatibility with sheeting.
- A clip must be installed on each and every purlin.



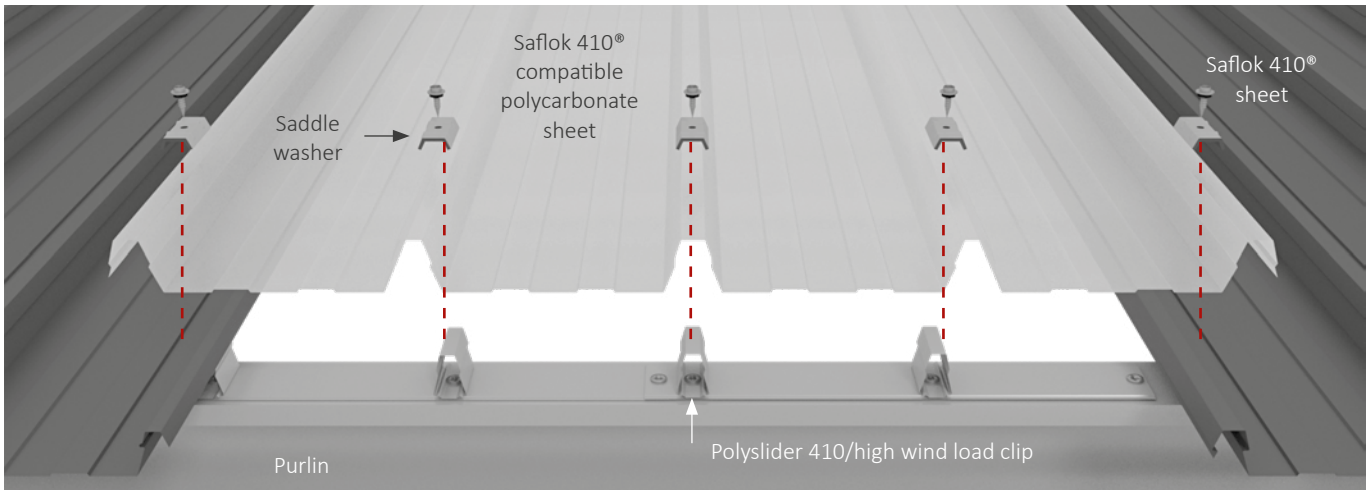
SAFLOK 410® INSTALLATION

1. Starting with the female rib first, align the first row of clips and fasten on all three fastening positions.
2. Lay the first sheet down over the clips. Starting at the eave side, clip the sheet onto the clips by first engaging the anchors and then engaging the female rib over the gooseneck and male rib.
3. Engage the gooseneck of the next row of clips over the male rib and fasten on all three fasteners. Ensure the male leading edge has adequate support (might require slight lifting of the male rib or rotation of the clip). Repeat from step 2.

Note 6: During installation, clean the roof daily by removing all swarf, pop rivets and unused fasteners or any other debris.

Note 7: A system performance warranty will be applicable provided that the installation has been performed by a Safintra Approved Roofing Contractor and the project has been inspected by Safintra.

Specialised Fixing Accessories



POLYCARBONATE AND HIGH WIND LOAD INSTALLATION DETAILING

(High Wind Zones and Coastal Wind Belts)

Polysliders are specifically designed for polycarbonate or fibreglass sheeting and allow for a large amount of thermal expansion. This clip works in conjunction with the saddle washers which are positively fixed to the sliding bracket. This clip is also used for Saflok 410® sheeting around the perimeters and exposed areas where high wind load conditions prevail.

Overhangs are prone to a build up of wind pressure and are considered to be the weak point of any roof. All overhangs larger than 600mm need to be positively fixed with a high wind load clip or saddle washer (always allowing for thermal cycling). These include canopies, walkways, lean-to roofs, loading bays and decorative roofs.

1. Align the first row of the polyslider baseplates and fasten through the pre-drilled holes in the two positions where the slider brackets attach.
2. Connect the slider brackets to the baseplate and lay the first sheet over the slider brackets.
3. Place saddle washers over the first two ribs above the purlin, and fasten the saddle washers through the ribs into the slider brackets.
4. Place the next row of baseplates and fasten. Overlap the end fastening positions to self-align the row of baseplates. Repeat from step 2.

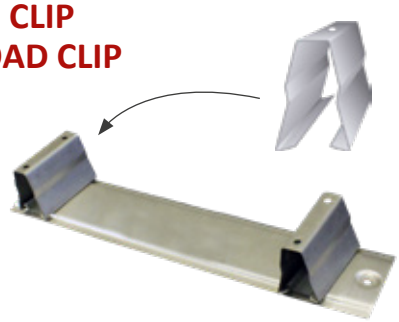
SAFLOK® SADDLE WASHER

The Saflok® saddle washer works with the polyslider to positively fix the sheeting (polycarbonate or steel) onto the polyslider clip without restricting thermal expansion. The saddle washers are cold bonded to a 3mm Ethylene Vinyl Acetate (EVA) seal, which prevents ingress of water through the fastener hole.

Note 8: The bonded saddle washer can only be fixed from the top.

POLYSLIDER 410 CLIP - HIGH WIND LOAD CLIP

The polyslider clip consists of a baseplate and two sliding brackets. Clip available in Aluminium-Zinc coated steel.



Note 9: All polycarbonate sheet installations (including, but not limited to in-plane installations) with Safintra roofing/cladding profiles should be done in accordance to SANS 10237:2023 (Annexure C Rooflights).

Note 10: In a springing or draping application, consideration should be given for the inclusion of high wind load brackets at the eaves.

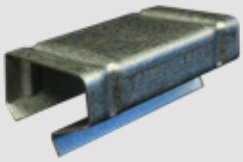
Specialised Flashing Installation

Safintra recommends the use of a flashing slider bracket for very long sheets. Refer to the adjacent table:

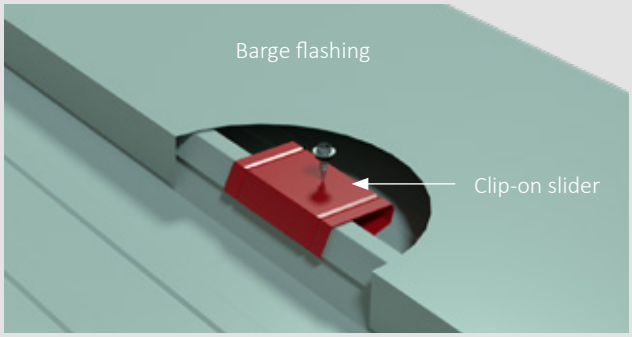
When installing bull-nosed sheeting or Aluminium sheeting, the use of flashing slider brackets is recommended for sheets with lengths in excess of 15 metres. Please consult Safintra's Technical Department for assistance.

Sheet length (m)	Transverse flashings (ridge, apex, headwall)	Longitudinal flashings (barge, sidewall)
<30	F10 bracket - Internal ribs only	F10 bracket - Every 500mm
>30	2-piece slider - Internal ribs only	Clip-on slider - Every 500mm

CLIP-ON SLIDER FOR FLASHINGS

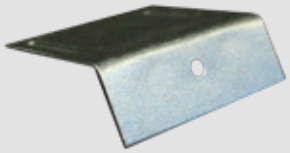


The clip-on slider clips onto the rib of the Saflok® profile to fix longitudinal flashing (barge, sidewall) to the sheeting without the need for fasteners piercing the sheet. The clip will allow for more thermal expansion than the F10 bracket. Therefore recommended for lengths exceeding 30 metres. The clips are available in Aluminium-Zinc coated steel or Stainless Steel Grade 304.



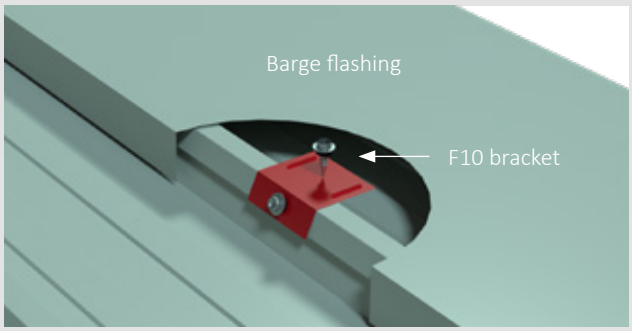
Clip-on slider bracket for longitudinal flashings on Saflok® profiles.

F10 BRACKET FOR FLASHINGS

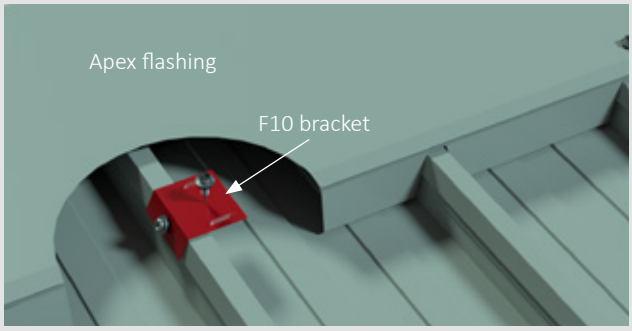


F10 brackets are used to fix flashing onto Saflok® profiles without drilling directly into the sheet. The bracket allows for minimal expansion. Brackets are available in Aluminium-Zinc coated steel, Stainless Steel Grade 304 or Aluminium.

Note 11: This clip is positively fixed. Care should be taken when detailing industrial length sheeting and flashings due to thermal expansion.



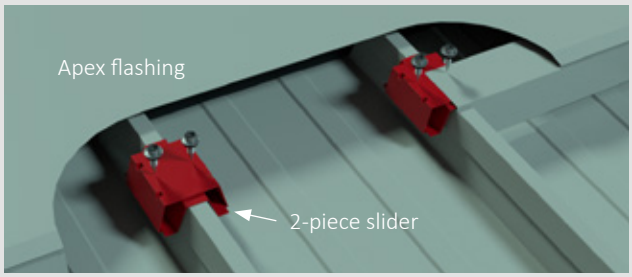
F10 bracket for longitudinal flashings on Saflok® profiles.



F10 bracket for transverse flashings on Saflok® profiles.

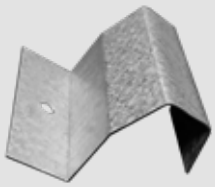
2-PIECE SLIDER FOR FLASHINGS

The 2-piece sliders are used to fix transverse flashings (apex, ridge, headwall) to the sheeting without drilling directly into the sheet. This bracket will allow for up to 50mm of thermal expansion. Sliders are available in Aluminium-Zinc coated steel, Stainless Steel Grade 304 or Aluminium.

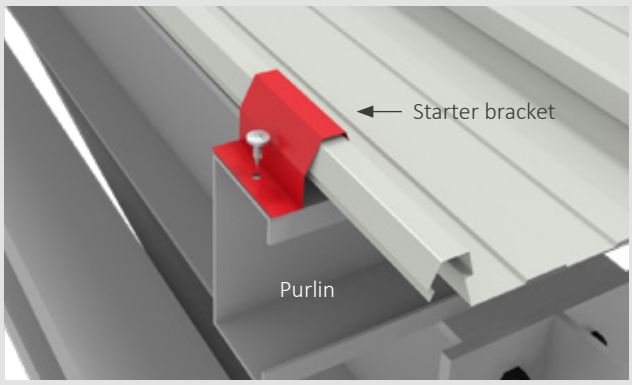


2-piece slider bracket for transverse flashings on Saflok® profiles.

SAFLOK® STARTER BRACKET



Due to the effects of thermal expansion and contraction, “first sheet” installation should never be attempted by positively fixing the sheet to the structure. The Saflok starter bracket is used to secure the first and/or last rib of the edge sheet without restricting thermal expansion. Sliders are available in Aluminium-Zinc coated steel, Stainless Steel Grade 304 or Aluminium.



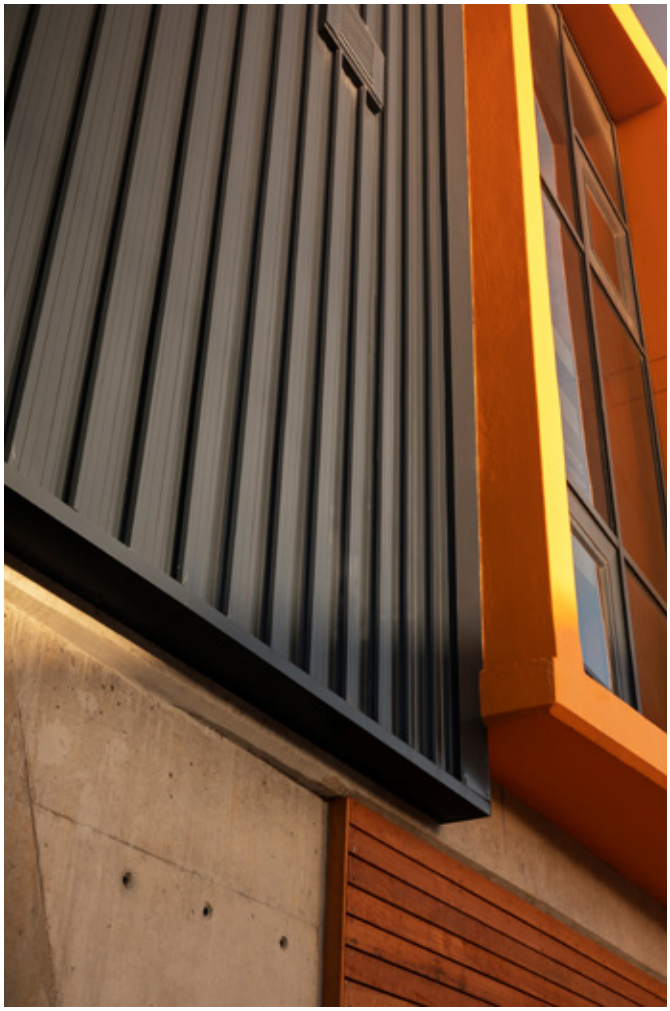
Saflok® starter bracket.

SAFLOK 410® LIPPING AND BENDING TOOL

The bending tool is used to bend the pan up on the ridge side of the sheet to create a water barrier (also known as the tanking or turning up of the sheet). The lipping tool is used on the eave side of the sheet to create a turned down lip (also known as the lipping or turning down of the sheet).

Saflok 410® bending tool application.

Saflok 410® lipping tool application.



CRANKING

Saflok 410® sheets may be cranked and bullnosed but not reverse cranked. The minimum radius is 450mm. On-site cranking is available on request.

CURVING

Natural springing occurs at a 36m radius in the convex and at a 60m radius in the concave. It is important to reduce purlin spacings by 20% when spring curving a roof. Oil canning may be expected.

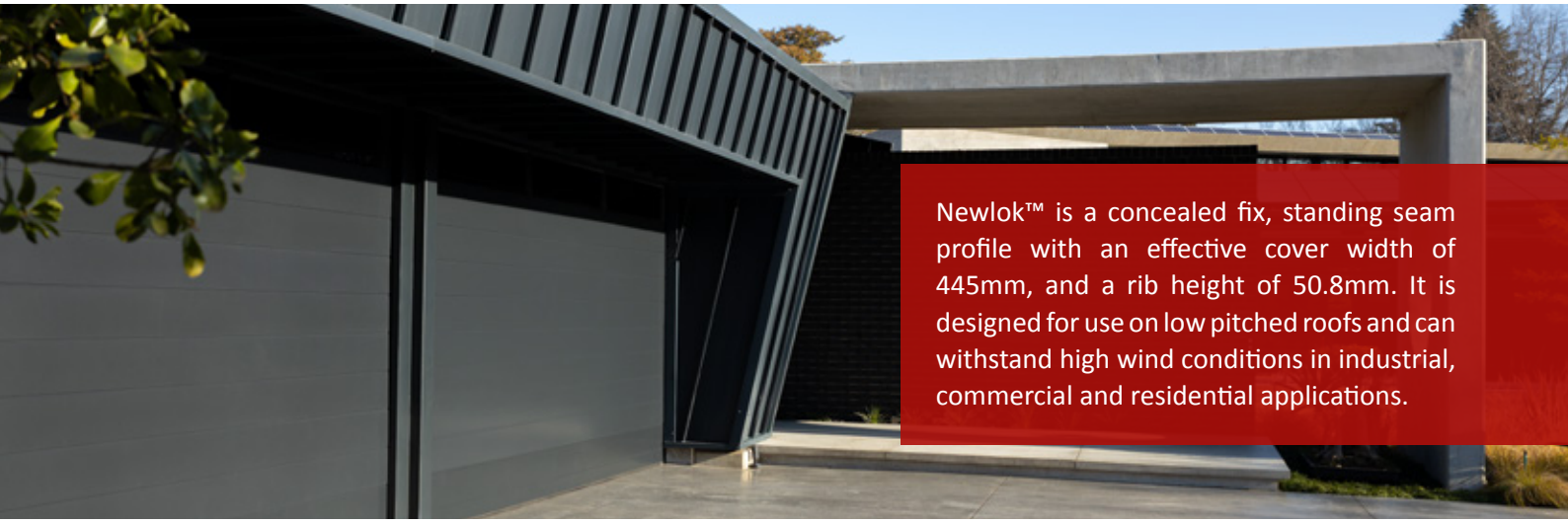
ROLLING STRAIGHT ONTO A ROOF

It is possible to roll-form straight onto a roof using a scaffold ramp. The limitations are the building height and space needed to roll. A departure angle of 10° is the maximum allowed at any time. A greater angle would damage the sheet when leaving the mill and again when bending to settle onto the roof.

DIMENSIONAL TOLERANCES

A length variation range of +10mm and -0mm, and a width tolerance of ±3mm is permissible.

NEWLOK™
standing seam roofing



Newlok™ is a concealed fix, standing seam profile with an effective cover width of 445mm, and a rib height of 50.8mm. It is designed for use on low pitched roofs and can withstand high wind conditions in industrial, commercial and residential applications.

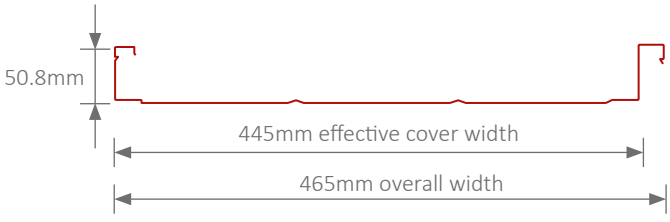
Newlok's™ unique interlocking clipping system incorporates a concealed cleat to positively hold down the male-female joint at every rib. The profile can be roll-formed by a mobile mill on the building site, in continuous lengths. The two-part cleat allows for natural thermal expansion and contraction of the sheet, and the 50.8mm rib height delivers optimal water shedding capabilities at slopes as low as 1.5°.

SAMPLE SPECIFICATION

Safintra Newlok™, roll-formed in 0.50mm Colorplus® AZ 150, unseamed/seamed, fixed to steel internal purlins at 1600mm, and steel ridge/eaves purlins at 1400mm centres using Newlok™ clips which must be positively fixed to purlins with Fixtite™ or Safintra approved wafer head self tapping fasteners, all in accordance with the manufacturer's recommendations.

The roof sheeting shall be manufactured by Safintra, roll-formed in continuous lengths and cut to length from Aluminium or Aluminium-Zinc coated steel. The profile shall be roll-formed with 2 ribs of 50.8mm and a cover width of 445mm. Two stiffening ribs shall be incorporated in the pan.

Male rib Female rib



MATERIAL OPTIONS

Aluminium-Zinc coated steel	Gauge (mm)
AZ 100 / 150 / 200 G550 Unpainted or pre-painted	0.47 0.50 0.53 0.55
Aluminium	**Gauge (mm)**
Unpainted or pre-painted	0.80
Rheinzink	**Gauge (mm)**
Rheinzink material	0.80
Zinc-coated steel	**Gauge (mm)**
Z200 / Z275 ISQ550 Unpainted or pre-painted	0.50

Other gauges are available on special request. All material is subject to availability.

Note 1: Newlok standing seam roofing is available as a 308mm effective cover width if required. For project specific flashing and cleat requirements, refer to the Safintra Technical Department.

Note 2: Newlok™ standing seam profile cannot be cranked.

Note 3: Note that when using Aluminium material on galvanized steel purlins, the use of an isolation tape or similar to prevent the bridging of the two dissimilar materials is recommended. Should the two metals have direct contact it will ultimately result in the manifestation of galvanic corrosion, and the service life of the Aluminium will be compromised.

PURLIN SPACINGS

Span tables are for Newlok™ with light foot traffic only. It is based on 1.5kN downward load and 2kPa negative wind loading. The span table below refers to the maximum recommended spans. For further information, consult Safintra's Technical Department.

Gauge (mm)	0.47	0.50	0.53	0.55	0.80
Material	Aluminium-Zinc coated steel	Aluminium-Zinc coated steel	Aluminium-Zinc coated steel	Aluminium-Zinc coated steel	Aluminium
Roofs	**mm**	**mm**	**mm**	**mm**	**mm**
Single span	1100	1200	1400	1500	900
End span	1300	1400	1600	1700	1100
Internal/double span	1500	1600	1800	1900	1300
Cantilever	150	150	150	150	100
Side cladding					
End span	1800	1900	2100	2200	1500
Internal span	1900	2000	2200	2400	1700
Cantilever	150	150	150	150	100
Approximate mass (kg/m^2)	4.84	5.15	5.46	5.67	3.07

*The above span table is designed for **inaccessible roofs**, in order to sustain imposed gravitational loads during installation and routine maintenance. Movement of maintenance crews to be restricted to dedicated walkways and landing areas. During installation, foot traffic shall be controlled and lateral movement effected across purlin, with up-slope traffic limited to the flat profile pan. End spans are critical, and movement in these areas should be restricted as far as practicable. Design requirements exceeding the above may be considered in consultation with the Safintra Technical Department.*

**0.80 Aluminium-Zinc coated steel is rolled in G275.*

Newlok™ cleats are calculated at 110g per clip – you will require approximately 3 clips per m². Purlin spacing is dependent on both downward loading and negative suction loading caused by wind. An engineer should be consulted to calculate your load (kN/m²) for your particular application.

DRAINAGE TABLE

Peak rainfall intensity (mm/h)	Roof slope		
	1:30 (2°)	1:20 (3°)	1:12 (5°)
150	294	360	465
200	220	270	349
250	176	216	279
300	147	180	233
350	126	154	199
400	110	135	174
500	88	108	139

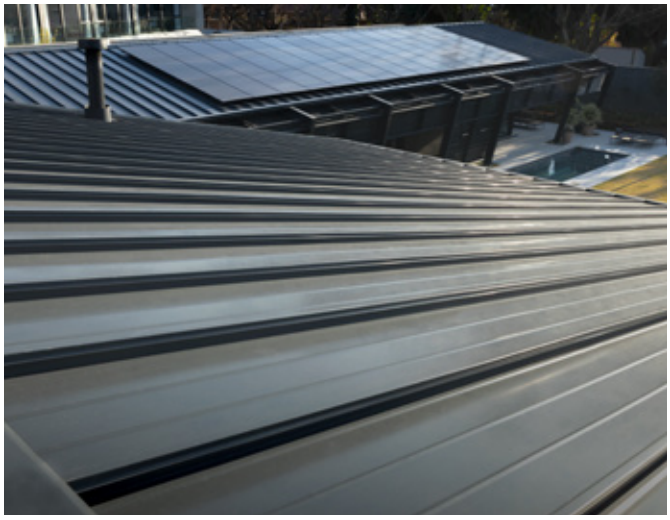
Maximum roof sheet length (m)

Note 4: Concealed fix side cladding must be pierce fixed for prevention of sheet movement due to gravity. Pierce fix the top of the sheets. Internal pierce fixing may be necessary on longer sheets (in consultation with the Structural Engineer). Cladding is to be fixed in the pan of the sheet with #12 x 25mm Fixtite™ fasteners.

LENGTHS AND ROOF PITCH

Newlok™ can be ordered in any practical length as per customer requirements. On-site rolling is recommended for lengths in excess of 13.2 metres, limited by space constraints and building design. The minimum roof pitch when using Newlok™ is 2°.

Clip-in marks and/or faint repetitive waviness, commonly referred to as oil canning, may be witnessed occasionally. This does not indicate any mechanical defect in the sheet. This common phenomenon is discussed on page 72.



**Refer to the Safintra Technical Department for more information or raise any enquiries in writing to info.safintrasa@safalgroup.com*

NEWLOK™
standing seam roofing

Fixing Guide

FASTENERS

Seaming is recommended for industrial and commercial applications. To allow for thermal expansion, a 2-part sliding cleat is available for this type of installation. For residential purposes, an unseamed configuration is adequate due to reduced load requirements. A fixed cleat will be suitable for this application.

FASTENERS FOR NEWLOK™

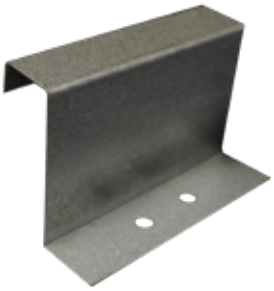
	Roof	Flashings
Steel	#10 x 22mm wafer head metal fastener	#14 x 22mm metal stitching fastener
Timber	#10 x 45mm wafer head timber fastener	

NEWLOK™ FEATURES AND BENEFITS

- Unique profile offers either an unseamed or seamed interlocking mechanism for optimum wind stability.
- Interlocking system allows natural thermal expansion and contraction, without unclipping between purlin supports.
- Concealed fasteners provide increased security, as roof sheets cannot easily be removed from the outside.
- Wide purlin supports for economical design.

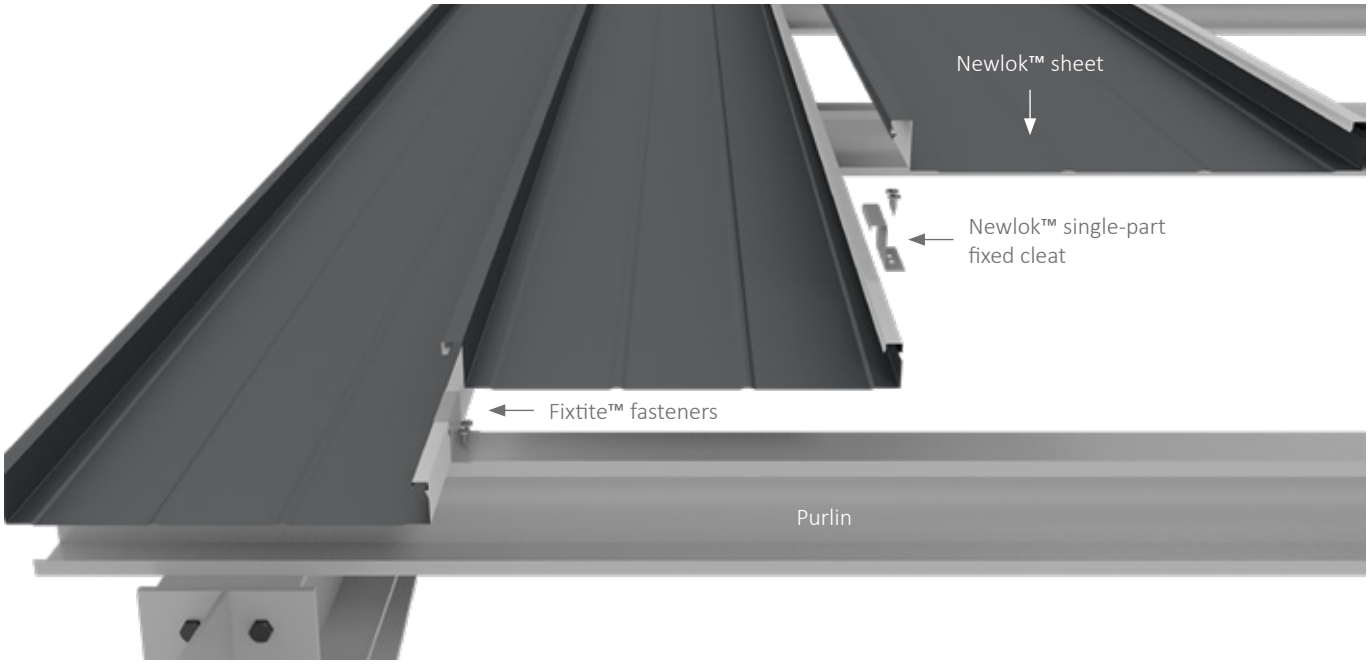
NEWLOK™ SINGLE-PART FIXED CLEAT

The Newlok™ fixed cleat is used to secure the Newlok™ profile to the purlins. These cleats are used on residential roofs where the sheets are not excessively long and thermal expansion is minimal. A cleat must be installed on each and every purlin.



Rolling the panels together

Unseamed system



NEWLOK™ INSTALLATION

1. Starting with the female rib first, align the first row of cleats and fasten on all fastening positions.
2. Roll the sheet over the cleats and lock the sheet into place.
3. Engage and fasten the next row of cleats over the male rib. Repeat from step 2.

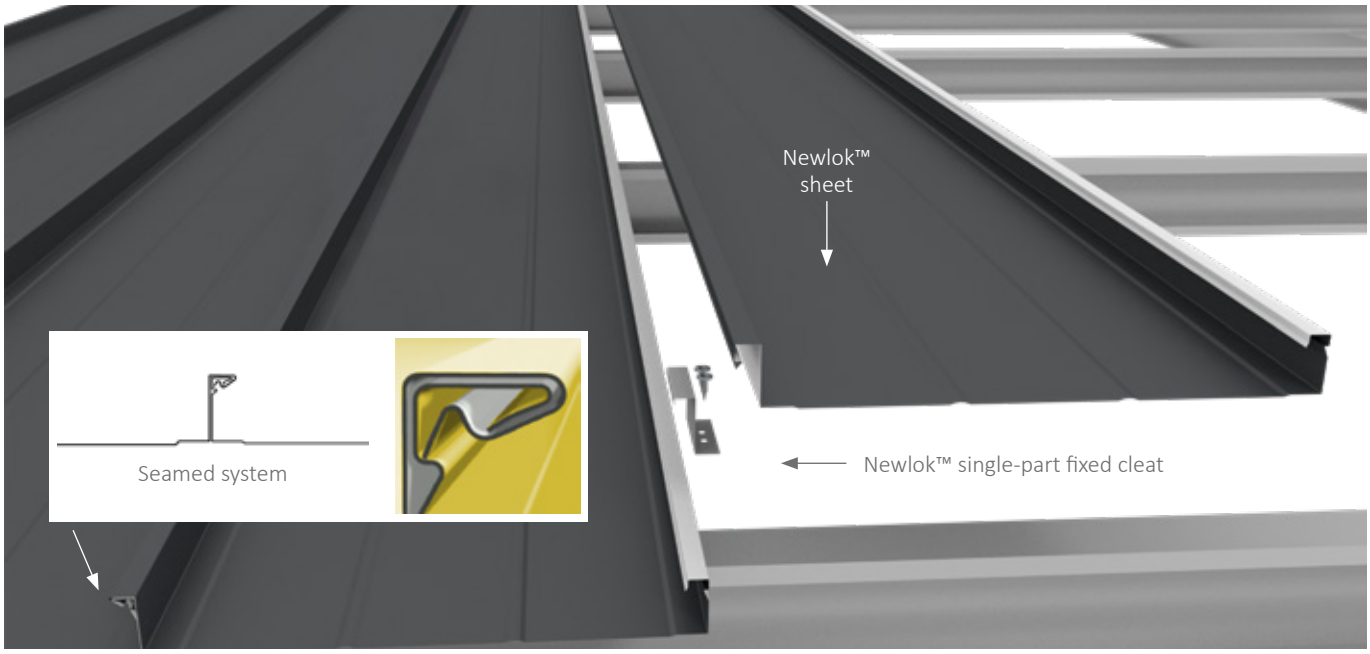
Note 5: When installing Newlok™ as side cladding, it is advisable to orientate sheets in a single direction, as this may have a visual impact when reflected in direct sunlight. The direction of the "dot matrix" branding that appears at regular intervals on the backing coat, can be used as a practical guide on site for roofing crews.

Note 6: For an enhanced aesthetic appearance, it is recommended that Newlok is installed onto a solid board over purlin surface. Installation over bulk insulation can result in the profile bulging.

Note 7: A system performance warranty will be applicable provided that the installation has been performed by a Safintra Approved Roofing Contractor and the project has been inspected by Safintra.

Note 8: During installation, clean the roof daily by removing all swarf, pop rivets and unused fasteners or any other debris.

Specialised Fixing Accessories



HIGH WIND LOAD INSTALLATION DETAILING

(High Wind Zones and Coastal Wind Belts)

All overhangs greater than 600mm require seaming. These include canopies, walkways, lean-to roofs, loading bays and decorative roofs. Overhangs are prone to a build up of wind pressure and are considered to be the weak point of any roof. Care must be taken when using the hand crimper as over engagement of the seam can create seam markings on the rib of the profile. In these exposed areas, single notch hand seaming is recommended (up and down slope of the fixing cleat). Allowance must be made for anticipated thermal movement of the roofing system.

90° hand crimper

**Refer to the Safintra Technical Department for more information or raise any enquiries in writing to info.safintrasa@safalgroup.com*

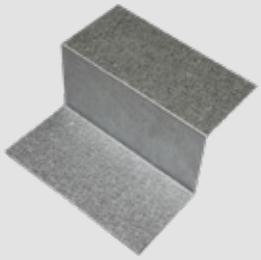
Specialised Flashing Installation

Safintra recommends the use of a flashing slider clip for very long sheets. Please consult our Technical Department for assistance.

When installing bull-nosed sheeting or Aluminium sheeting, the use of flashing slider brackets is recommended for sheets with lengths in excess of 15 metres. Please consult Safintra's Technical Department for assistance.

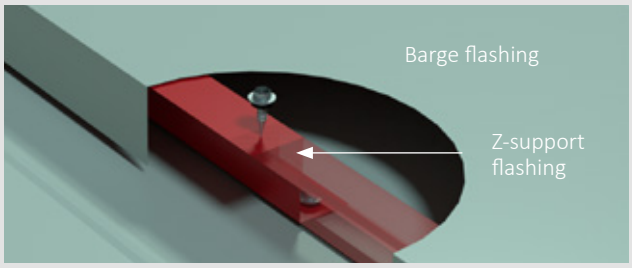
Sheet length (m)	Transverse flashings (ridge, apex, headwall)	Longitudinal flashings (barge, sidewall)
<30	Z-support flashing - Between ribs	Z-support flashing - Every 500mm
>30	F10 sliding bracket - Every rib	Z-sliding bracket - Every 500mm

Z-SUPPORT FLASHING

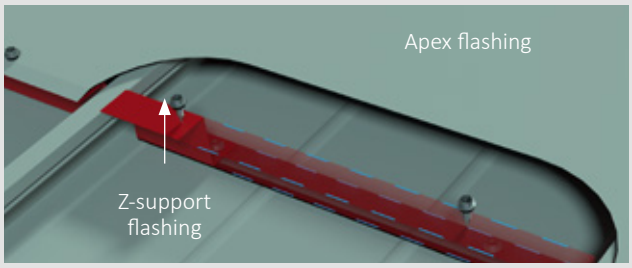


The Z-support flashing is used to create a false rib in the pan of the Newlok™ profile. This flashing is fastened through the sheet into the purlins and sealed with a butyl or neutral cure Silicone sealant. This flashing also creates a fixing platform for flashings. Other flashings are fastened to the Z-support flashing at no more than 500mm centres. Flashings are available in Aluminium-Zinc coated steel and Stainless Steel Grade 304.

Note 9: This flashing is positively fixed. Care should be taken when detailing industrial length sheeting and flashings due to thermal expansion.

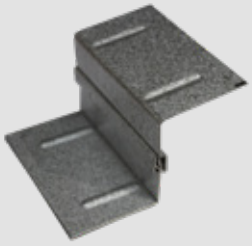


Newlok™ Z-support flashings for longitudinal flashings.

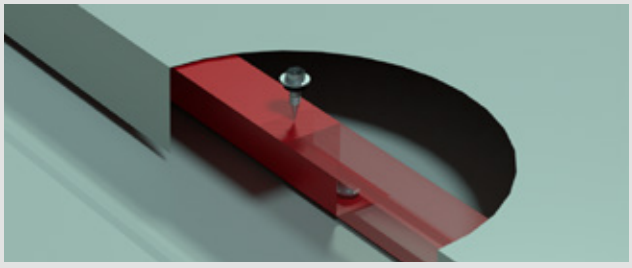


Newlok™ Z-support flashing for transverse flashings.

Z-SLIDING BRACKET



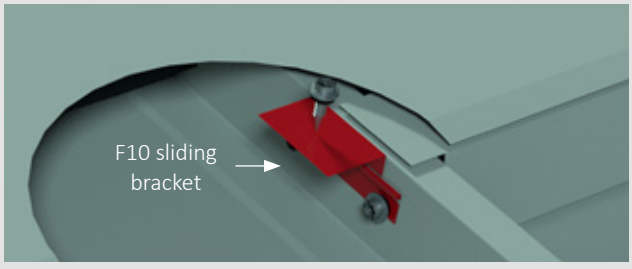
The Z-sliding bracket is designed to slide with the thermal expansion and contraction of the roof sheeting. It is recommended for sheet lengths exceeding 30 metres. Brackets are available in Aluminium-Zinc coated steel and Stainless Steel Grade 304.



Newlok™ Z-sliding bracket for longitudinal flashings.

F10 SLIDING BRACKET

The F10 sliding bracket is designed to slide with the thermal expansion and contraction of the roof sheeting. It is recommended for sheet lengths exceeding 30 metres. Brackets are available in Aluminium-Zinc coated steel and Stainless Steel Grade 304.

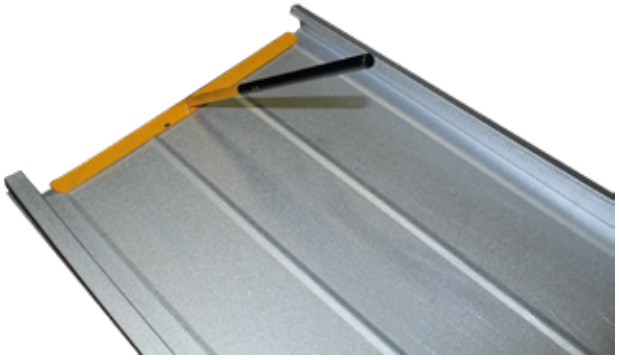


F10 sliding bracket for transverse flashings.

NEWLOK™ LIPPING AND BENDING TOOL

The bending tool is used to bend the pan up on the ridge side of the sheet to create a water barrier (tanking or turning up). The lipping tool is used on the eave side of the sheet to create a turned down lip (lipping or turning down).

Newlok™ bending tool application.



Newlok™ lipping tool application.

ROLLING STRAIGHT ONTO A ROOF

It is possible to roll-form straight onto a roof using a scaffold ramp. The limitations are the building height and space needed to roll. A departure angle of 10° is the maximum allowed at any time. A greater angle would damage the sheet when leaving the mill and again when bending to settle onto the roof.

DIMENSIONAL TOLERANCES

A length variation range of +10mm and -0mm, and a width tolerance of ±5mm are permissible.

Note 10: Newlok™ cannot be bullnosed, cranked or naturally sprung.

Newlok™
Mabopane Square - Gauteng

CONCEALED FIX FLASHINGS AND CLOSURES

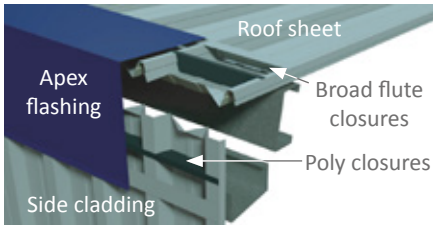
Flashings and closures are made for particular applications and locations on the roof, with variations to suit the specific profile being used.

Industrial and commercial flashings tend to be functional more than aesthetic and Safintra makes a range of standard flashings which are suitable for this purpose. Residential flashings however, usually have an important aesthetic role which necessitates that they are designed for the structure in question.

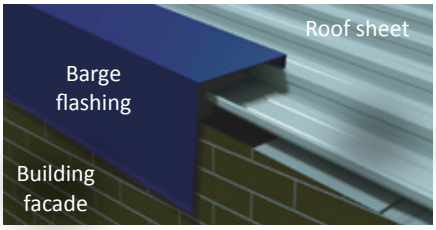
Safintra is able to produce most custom designed flashings for residential and other applications - please ask your local branch for more information. Flashings are usually made in the same material as the roof for colour matching. Complementing or matching colours may be used as required. Counter flashings are to be sealed with a neutral cure Silicone.

Note 1: Longitudinal flashings to be fastened at 500mm centres. Flashings to be lapped at minimum 150mm for roof flashings and at 100mm for side cladding. Flashings laps to be sealed using a suitable butyl product or neutral cure Silicone.

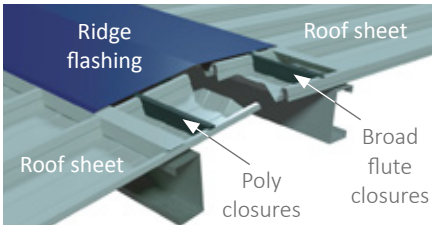
Apex flashing



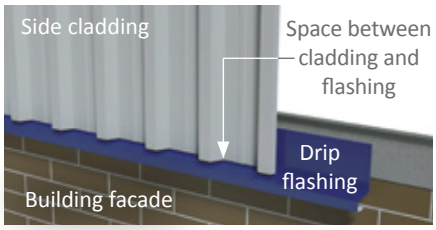
Barge flashing



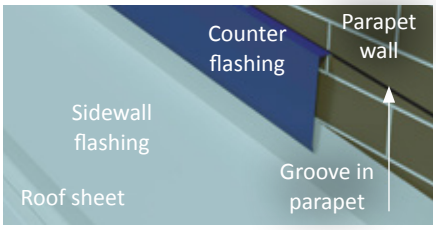
Ridge/hip flashing



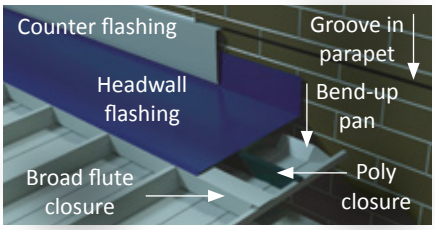
Drip flashing



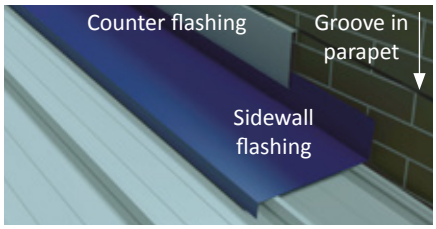
Counter flashing



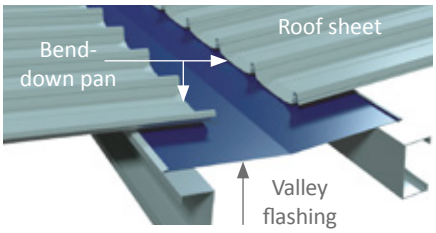
Headwall flashing



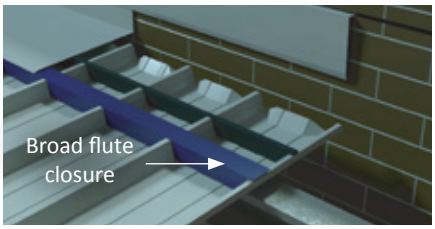
Sidewall flashing



Valley flashing

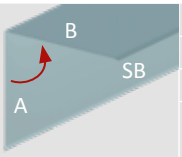
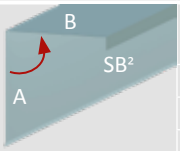


Broad flute closure

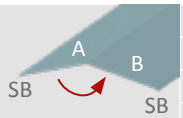
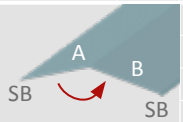
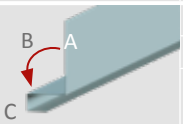
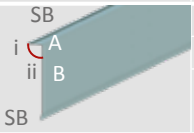
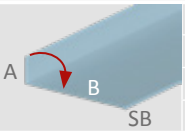
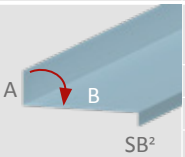
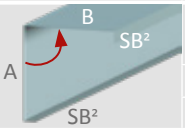
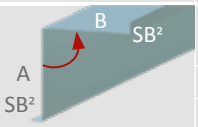
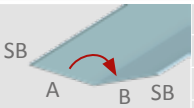
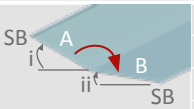


CONCEALED FIX

SAFLOK 700® concealed fix roofing | SAFLOK 410® concealed fix roofing | NEWLOK™ standing seam roofing

Apex flashing 	Dimensions	330 x 330		
	Angle	Calculation: 90°- Roof pitch		
	Girth	660		
	Comment	Use with broad flute closures + poly closures and sliding brackets (F10, 2-piece slider)		
Barge flashing 	Dimensions	330 x 292 x 38 SB^2 = 38mm at 90°	330 x 292 x 38 SB^2 = 38mm at 90°	330 x 282 x 48 SB^2 = 48mm at 90°
	Angle	90°		
	Girth	660		
	Comment	Use with sliding brackets (F10 or clip-on)		

CONCEALED FIX

		SAFLOK 700® concealed fix roofing	SAFLOK 410® concealed fix roofing	NEWLOK™ standing seam roofing
Ridge flashing 	Dimensions	330 x 330		
	Angle	Calculation: 180°- (2 x roof pitch)		
	Girth	660		
	Comment	Use with broad flute closures + poly closures and sliding brackets (F10, 2-piece slider)		
Hip cap 	Dimensions	330 x 330		
	Angle	Calculation: 180°- (1.5 x roof pitch)		
	Girth	660		
	Comment	Use with blank closures notched + poly blocks		
Drip flashing 	Dimensions	111 x 60 x 25 x 35		
	Angle	95°		
	Girth	231		
Counter flashing 	Dimensions	SB 12 x 35 x 138		
	Angle	i)157.5° ii)88°		
	Girth	185		
Headwall flashing 	Dimensions	94 x 368		
	Angle	Calculation: 90° + roof pitch		
	Girth	462		
	Comment	Use with broad flute closures + poly closures and sliding brackets (F10, 2-piece slider)		
Sidewall flashing 	Dimensions	94 x 330 x38 SB² = 38mm at 90°	94 x 330 x38 SB² = 38mm at 90°	132 x 282 x 48 SB² = 48mm at 90°
	Angle	90°		
	Girth	462		
	Comment	Sliding brackets (F10 or clip-on)		
External corner 	Dimensions	292 x 292 x 38 x 38 SB² = 38mm at 90°	292 x 292 x 38 x 38 SB² = 38mm at 90°	282 x 282 x 48 x 48 SB² = 48mm at 90°
	Angle	90°		
	Girth	660	660	660
Internal corner 	Dimensions	292 x 292 x 38 x 38 SB² = 38mm at 90°	292 x 292 x 38 x 38 SB² = 38mm at 90°	282 x 282 x 48 x 48 SB² = 48mm at 90°
	Angle		90°	
	Girth	660	660	660
Valley flashing 	Dimensions	330 x 330		
	Angle	Calculation: 180°- (1.5 x roof pitch)		
	Girth	660		
	Comment	Stiffener bend at 158° angle		
Under-over flashing 	Dimensions	330 x 330		
	Angle	Calculation: 180°- (i-ii)		
	Girth	660		
	Comment	Use with sliding brackets (F10 or 2-piece slider)		
Broad flute closure	Profile			
	Length	705	820 (2 x 410)	466
	Comment	One closure per roofsheet	One closure per 2 roofsheets	One closure per roofsheet

All dimensions given in millimetres. Diagrams are for illustrative purposes only.

Note 2: 0.80mm Z-support flashings are recommended for use with Newlok™.

Note 3: SB = Stiffener bend is 15mm included at 15°, unless otherwise stated.

Classicorr® corrugated
Barn House - Johannesburg

Pierced Fix Roofing Systems

Note: Tanking and lipping is required for optimal performance.
Refer to Required Structural Tolerances (page 73).

classicorr®
corrugated

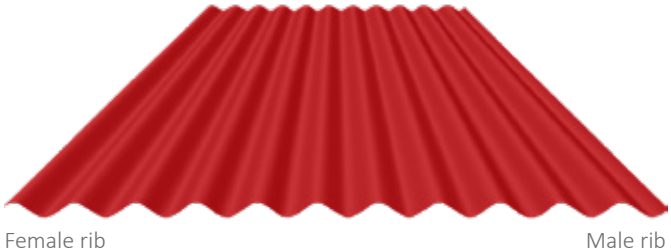
The corrugated profile is sinusoidal and can be used as both roofing and cladding material. With its origins dating back to the Victorian era, it is probably the most commonly known sheeting profile used in the world today. The fact that the corrugated profiled sheeting has been around since before the turn of the century proves that this easy to use and effective profile for roofing and wall cladding is here to stay. Corrugated sheets can be factory cranked, curved and bullnosed to a wide range of radii. For further details contact our Technical Department.

SAMPLE SPECIFICATION

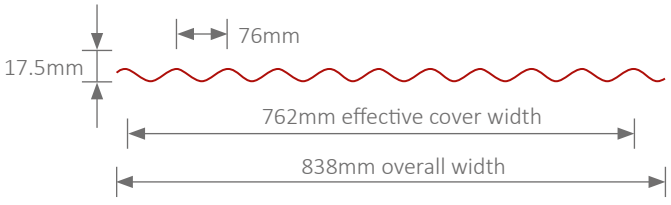
Safintra 0.50mm thick, AZ 150 Zincal® Classicorr® corrugated roof sheeting, crest-fixed to intermediate timber purlins at 1200mm centres and ridge and eave purlins at 900mm centres, with #12 x 65mm Fixtite™ timber fasteners or Safintra approved hex head self-drilling fasteners. Sheets to be fixed with three fasteners per sheet on intermediate purlins and five fasteners per sheet on ridge and eave purlins.

The sheeting shall be Classicorr® corrugated as manufactured by Safintra.

The profile shall be roll-formed with 10.5 sinusoidal crests at 76mm centres, with an effective cover width of 762mm. The crest height shall be 17.5mm and shall be fixed in accordance with the manufacturer's recommendations.



Female rib Male rib



MATERIAL OPTIONS

Aluminium-Zinc coated steel	Gauge (mm)
AZ 100 / 150 / 200 G550 Unpainted or pre-painted	0.47 0.50 0.53 0.55 0.80*
Aluminium	**Gauge (mm)**
Unpainted or pre-painted	0.80
Rheinzink	**Gauge (mm)**
Rheinzink material	0.80
Zinc-coated steel	**Gauge (mm)**
Z200 / Z275 ISQ550/ISQ300 Unpainted or pre-painted	0.50 0.58

Other gauges are available on special request. All material is subject to availability.
** Available in G275/ISQ300 only.*

Material and coating thickness can vary regionally. Consult your local Safintra branch for availability.

Note 1: When installing Classicorr® as side cladding, it is advisable to orientate sheets in a single direction, as this may have a visual impact when reflected in direct sunlight. The direction of the "dot matrix" branding that appears at regular intervals on the backing coat, can be used as a practical guide on site for roofing crews.

Note 2: During installation, clean the roof daily by removing all swarf, pop rivets and unused fasteners or any other debris.

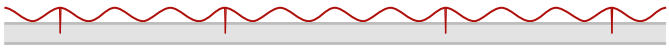
Note 3: Safintra recommends the use of Fixtite™ fasteners. Refer to Corrosion Class table on page 58.

PURLIN SPACINGS

Purlin spacings are dependent on both downward loading and negative suction loading caused by wind. An engineer should be consulted to calculate the load (kN/m²) for your particular application.

Gauge (mm)	0.47	0.50	0.53	0.55	0.80	0.80
Material	Aluminium-Zinc coated steel	Aluminium-Zinc coated steel	Aluminium-Zinc coated steel	Aluminium-Zinc coated steel	Aluminium-Zinc coated steel	Aluminium
Roofs	**mm**	**mm**	**mm**	**mm**	**mm**	**mm**
Single span	600	650	750	800	900	500
End span	900	950	1050	1100	1200	800
Internal/double span	1200	1250	1350	1400	1500	1100
Cantilever	100	100	150	150	250	100
Side cladding						
End span	1000	1200	1500	1700	2000	900
Internal span	1500	1700	2000	2200	2500	1400
Cantilever	200	200	250	250	250	200
Approximate mass (kg/m²)	4.32	4.60	4.88	5.06	7.36	2.72

Design requirements exceeding the above may be considered in consultation with the Safintra Technical Department.



FIXING GUIDE

Classicorr® corrugated is pierce fixed to timber or steel supports. This means that fastener screws pass through the sheeting. Always drive the fasteners perpendicular to the sheeting, and in the centre of the rib. It is recommended that side laps be stitched at 500mm centres with a #14 x 22mm metal stitching fastener. It is further recommended that every second rib is fixed at the eaves, ridges and the apex of the roof. Side and end laps are to be sealed (in accordance with SANS10400-L:2020) using a suitable butyl product or neutral cure Silicone. Refer to the Fixtite™ fastener section for fixing guidelines.

FASTENERS FOR CLASSICORR® CORRUGATED

	Roof	Side Cladding
Steel	#12 x 38mm hex head metal fastener	#12 x 25mm hex head metal fastener
Timber	#12 x 65 hex head timber fastener	N/A

FLASHINGS AND SIDE STITCHING

	Roof	Side Cladding
Steel	#14 x 22mm metal stitching fastener	
Timber		

Note 4: Classicorr® corrugated is a handed sheet and should be installed accordingly.

LENGTHS AND ROOF PITCH

When using Classicorr® corrugated sheeting the recommended minimum roof slope (pitch) for sheets longer than 15m is 15°, and for sheets shorter than 15m the minimum roof slope is 10°.

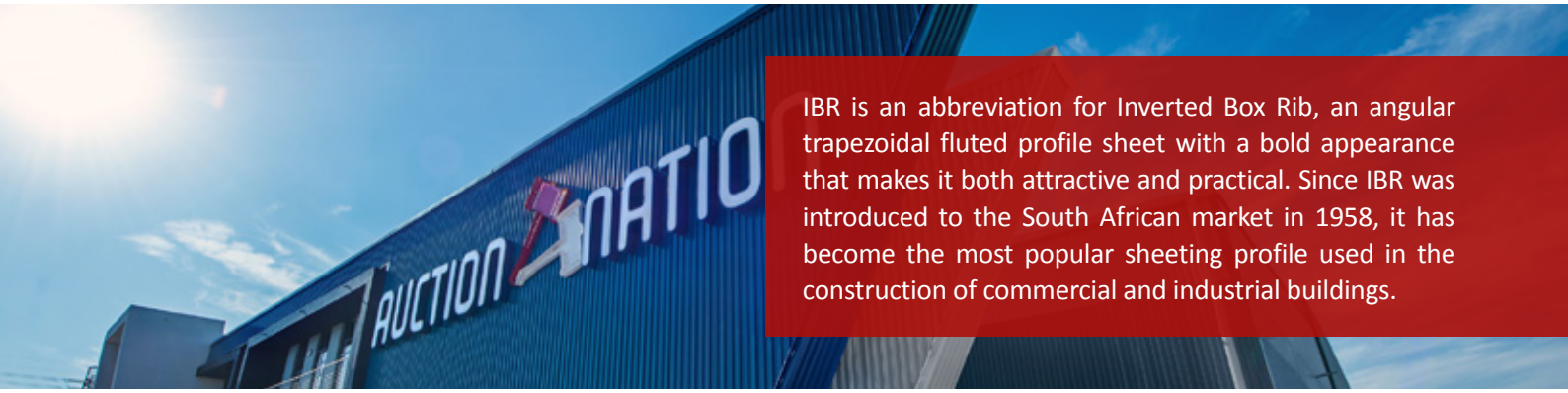
DIMENSIONAL TOLERANCES

A length variation range of +10mm or -0mm, and a width tolerance of ±5mm is permissible. This applies to straight sheet lengths only.

Note 5: Note that when using Aluminium material on galvanized steel purlins, the use of an isolation tape or similar to prevent the bridging of the two dissimilar materials is recommended. Should the two metals have direct contact it will ultimately result in the manifestation of bimetallic corrosion, and the service life of the Aluminium will be compromised.

**Refer to the Safintra Technical Department for more information or raise any enquiries in writing to info.safintrasa@safalgroup.com*

TUFDEK IBR®



IBR is an abbreviation for Inverted Box Rib, an angular trapezoidal fluted profile sheet with a bold appearance that makes it both attractive and practical. Since IBR was introduced to the South African market in 1958, it has become the most popular sheeting profile used in the construction of commercial and industrial buildings.

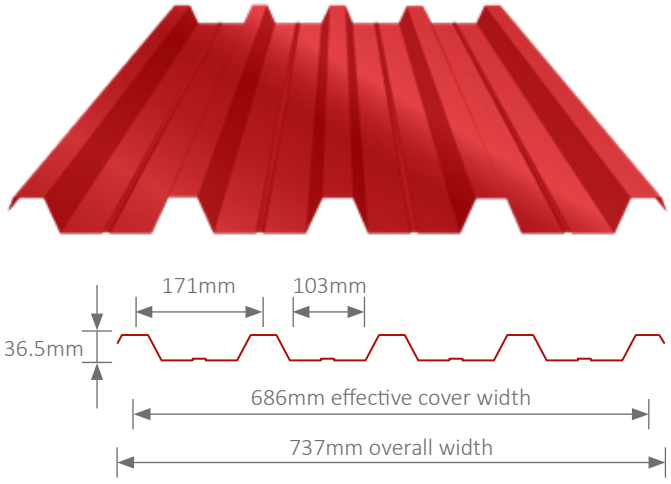
The general shape and appearance of the trapezoidal flutes ensure that IBR is totally acceptable for use as roof and wall cladding. The deep and broad flutes of the Tufdek® IBR type sheeting ensure excellent drainage characteristics. Tufdek® IBR is designed to provide advantageous load/span characteristics consistent with economy. Tufdek® IBR is rolled with stiffening ribs in the pan which help to remove oil canning from the broad flute. Tufdek® IBR can be factory cranked, curved and bullnosed to a wide range of radii. For further details contact our Technical Department.

SAMPLE SPECIFICATION

Safintra 0.47mm thick, AZ 150 Zincal® Tufdek® IBR profiled roof sheeting, fixed to intermediate coated steel purlins at 1900mm centres and to ridge and eaves purlins at 1600mm centres, with #12 x 65mm Fixtite™ metal fasteners at every second crest, at intermediate purlins and at every crest at eave purlins.

Side laps to be stitched at 500mm centres between purlins with a #14 x 22mm metal stitching fastener, in accordance with manufacturer's recommendations.

The sheeting shall be Tufdek® IBR type profile as manufactured by Safintra. The profile shall be roll-formed with 5 trapezoidal ribs at 171mm centres with an effective cover width of 686mm. The rib height shall be 36.5mm and shall be fixed in accordance with the manufacturer's recommendations.



MATERIAL OPTIONS

Aluminium-Zinc coated steel	Gauge (mm)
AZ 100 / 150 / 200 G550 Unpainted or pre-painted	0.47 0.50 0.53 0.55 0.80*
Aluminium	**Gauge (mm)**
Unpainted or pre-painted	0.80
Zinc-coated steel	**Gauge (mm)**
Z200 / Z275 ISQ550/ISQ300 Unpainted or pre-painted	0.50 0.58

Other gauges are available on special request. All material is subject to availability.
**Available in G275/ISQ300 only.*

Material and coating thickness can vary regionally. Consult your local Safintra branch for availability.

Note 1: When ordering Tufdek ensure you advise Safintra as to whether the end use is as roofing or cladding.

Note 2: When installing Tufdek® IBR as side cladding, it is advisable to orientate sheets in a single direction, as this may have a visual impact when reflected in direct sunlight. The direction of the "dot matrix" branding that appears at regular intervals on the backing coat, can be used as a practical guide on site for roofing crews.

Note 3: All profiles are rolled with stiffener ribs, unless otherwise specified.

Note 4: During installation, clean the roof daily by removing all swarf, pop rivets and unused fasteners or any other debris.

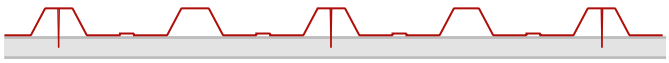
Note 5: All sheets are to be tanked or turned up at the ridge side of the sheet and are to be lipped or turned down at the eave end.

PURLIN SPACINGS

Purlin spacings are dependent on both downward loading and negative suction loading caused by wind. An engineer should be consulted to calculate the load (kN/m²) for your particular application.

Gauge (mm)	0.47	0.50	0.53	0.55	0.80	0.80
Material	Aluminium-Zinc coated steel	Aluminium-Zinc coated steel	Aluminium-Zinc coated steel	Aluminium-Zinc coated steel	Aluminium-Zinc coated steel	Aluminium
Roofs	**mm**	**mm**	**mm**	**mm**	**mm**	**mm**
Single span	1300	1400	1500	1600	1900	1200
End span	1600	1700	1800	1900	2200	1500
Internal/double span	1900	2000	2100	2200	2500	1800
Cantilever	200	200	250	250	400	200
Side cladding						
End span	1700	1900	2100	2300	2600	1500
Internal span	2100	2300	2500	2700	3000	1900
Cantilever	300	300	400	350	350	300
Approximate mass (kg/m²)	4.80	5.11	5.42	5.62	8.18	3.02

Design requirements exceeding the above may be considered in consultation with the Safintra Technical Department.



FIXING GUIDE

Tufdek® IBR is pierce fixed to timber or steel supports. This means that fastener screws pass through the sheeting. Always drive the fasteners perpendicular to the sheeting, and in the centre of the rib.

It is recommended that side laps be stitched at 500mm centres. It's further recommended that every rib is fixed at the eaves, ridges and the apex of the roof. Side and end laps are to be sealed (in accordance with SANS10400-L:2020) using a suitable butyl product or neutral cure Silicone. Refer to the Fixtite™ fastener section for fixing guidelines.

FASTENERS FOR TUFDEK® IBR

	Roof	Side cladding
Steel	#12 x 65mm hex head metal fastener	#12 x 25mm hex head metal fastener
Timber	#12 x 85mm hex head timber fastener	N/A

FLASHINGS AND SIDE STITCHING

	Roof	Side cladding
Steel	#14 x 22mm metal stitching fastener	
Timber		

Note 6: Safintra recommends the use of Fixtite™ fasteners. Refer to Corrosion Class table on page 58.

LENGTHS AND ROOF PITCH

Tufdek® IBR sheeting can be ordered in any length, subject to transport limitations, up to 13.2m. Longer lengths require special transport arrangements. When using Tufdek® IBR sheeting the recommended minimum pitch for roof slopes in excess of 15m is 7.5° and for slopes less than 15m is 5°.

DIMENSIONAL TOLERANCES

A length variation range of +10mm or -0mm, and a width tolerance of ±5mm is permissible. This applies to straight sheet lengths only.

Note 7: Note that when using Aluminium material on galvanized steel purlins, the use of an isolation tape or similar to prevent the bridging of the two dissimilar materials is recommended. Should the two metals have direct contact it will ultimately result in the manifestation of bimetallic corrosion, and the service life of the Aluminium will be compromised.

**Refer to the Safintra Technical Department for more information or raise any enquiries in writing to info.safintrasa@safalgroup.com*

WIDEDEK®

Widedek® is an angular trapezoidal fluted sheet and is similar in appearance to Tufdek® IBR profiled sheeting, the difference being a wider cover width of the sheet, and shallower flutes.

The Widedek® profile has a better cover width than Tufdek® IBR, resulting in a saving of ±10%. To achieve the same coverage, less sheets are required to be erected, thus saving on time and labour.

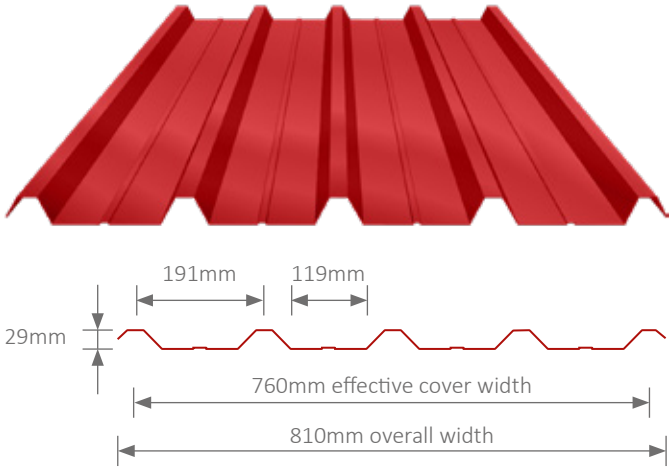
The advantage of using Widedek® in place of a sinusoidal profile is its strength. The spanning capacity of Widedek® is greater than the corrugated profile thus requiring less purlins, resulting in a further cost saving in material and instalment costs. Widedek® can be factory cranked, curved and bullnosed to a wide range of radii.

SAMPLE SPECIFICATION

Safintra 0.5mm thick AZ 150 Zincal® Widedek® profiled roof sheeting, fixed to intermediate coated steel purlins at 1700mm centres and to ridge and eaves purlins at 1500mm centres, with #12 x 65mm Fixtite™ or Safintra approved hex head self-drilling fasteners at every second crest at intermediate purlins and every crest and eaves purlins in accordance with the manufacturer's recommendations.

The sheeting shall be Widedek® trapezoidal type profile as manufactured by Safintra. The profile shall be roll-formed with 5 trapezoidal ribs at 191mm centres with a nett cover of 760mm.

The rib height shall be 29mm and in accordance with the manufacturer's specification.



MATERIAL OPTIONS

Aluminium-Zinc coated steel	Gauge (mm)
AZ 100 / 150 / 200 G550 Unpainted or pre-painted	0.47 0.50 0.53 0.55 0.80*
Aluminium	**Gauge (mm)**
Unpainted or pre-painted	0.80
Zinc-coated steel	**Gauge (mm)**
Z200 / Z275 ISQ550/ISQ300 Unpainted or pre-painted	0.50 0.58

Other gauges are available on special request. All material is subject to availability.
**Available in G275/ISQ300 only.*

Material and coating thickness can vary regionally. Consult your local Safintra branch for availability.

Note 1: When ordering Widedek ensure you advise Safintra as to whether the end use is as roofing or cladding.

Note 2: When installing Widedek® as side cladding, it is advisable to orientate sheets in a single direction, as this may have a visual impact when reflected in direct sunlight. The direction of the "dot matrix" branding that appears at regular intervals on the backing coat, can be used as a practical guide on site for roofing crews.

Note 3: All profiles are rolled with stiffener ribs, unless otherwise specified.

Note 4: During installation, clean the roof daily by removing all swarf, pop rivets and unused fasteners or any other debris.

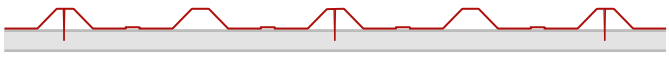
Note 5: All sheets are to be tanked or turned up at the ridge side of the sheet and are to be lipped or turned down at the eave end.

PURLIN SPACINGS

Purlin spacings are dependent on both downward loading and negative suction loading caused by wind. An engineer should be consulted to calculate the load (kN/m²) for your particular application.

Gauge (mm)	0.47	0.50	0.53	0.55	0.80	0.80
Material	Aluminium-Zinc coated steel	Aluminium-Zinc coated steel	Aluminium-Zinc coated steel	Aluminium-Zinc coated steel	Aluminium-Zinc coated steel	Aluminium
Roofs	**mm**	**mm**	**mm**	**mm**	**mm**	**mm**
Single span	1200	1300	1400	1500	1700	1000
End span	1400	1500	1600	1700	1900	1200
Internal/double span	1600	1700	1800	1900	2100	1400
Cantilever	150	150	200	200	400	150
Side cladding						
End span	1700	1900	2100	2300	2500	1300
Internal span	2000	2200	2400	2600	2800	1600
Cantilever	200	200	300	300	450	300
Approximate mass (kg/m²)	4.34	4.61	4.89	5.07	7.38	2.73

Design requirements exceeding the above, may be considered in consultation with the Safintra Technical Department.



FIXING GUIDE

Widedek® is pierce fixed to timber or steel supports. This means that fastener screws pass through the sheeting. Always drive the fasteners perpendicular to the sheeting, and in the centre of the rib. It is recommended that side laps be stitched at 500mm centres with #14 x 22mm metal stitching fasteners. It's further recommended that every rib is fixed at the eaves, ridges and the apex of the roof. Side and end laps are to be sealed (in accordance with SANS10400-L:2020) using a suitable butyl product or neutral cure Silicone. Refer to the Fixtite™ fastener section for fixing guidelines.

FASTENERS FOR WIDEDEK®

	Roof	Side cladding
Steel	#12 x 65mm hex head metal fastener	#12 x 25mm hex head metal fastener
Timber	#12 x 85mm hex head timber fastener	N/A

FLASHINGS AND SIDE STITCHING

	Roof	Side cladding
Steel	#14 x 22mm metal stitching fastener	
Timber		

Note 6: Safintra recommends the use of Fixtite™ fasteners. Refer to Corrosion Class table on page 58.

LENGTHS AND ROOF PITCH

Widedek® sheeting can be ordered in any length, subject to transport limitations of up to 13.2m. Longer lengths require special transport arrangements. When using Widedek® sheeting the recommended minimum pitch for roof slopes in excess of 15m is 10° and for slopes less than 15m is 7.5°.

DIMENSIONAL TOLERANCES

A length variation range of +10mm or-0mm, and a width tolerance of ±5mm is permissible. This applies to straight sheet lengths only.

Note 7: Note that when using Aluminium material on galvanized steel purlins, the use of an isolation tape or similar to prevent the bridging of the two dissimilar materials is recommended. Should the two metals have direct contact it will ultimately result in the manifestation of bimetallic corrosion, and the service life of the Aluminium will be compromised.

**Refer to the Safintra Technical Department for more information or raise any enquiries in writing to info.safintrasa@safalgroup.com*

FLUTELINE®

Fluteline® is an angular trapezoidal fluted profile sheet with similar characteristics to IBR but having an effective cover of 889mm, which is wider than IBR.

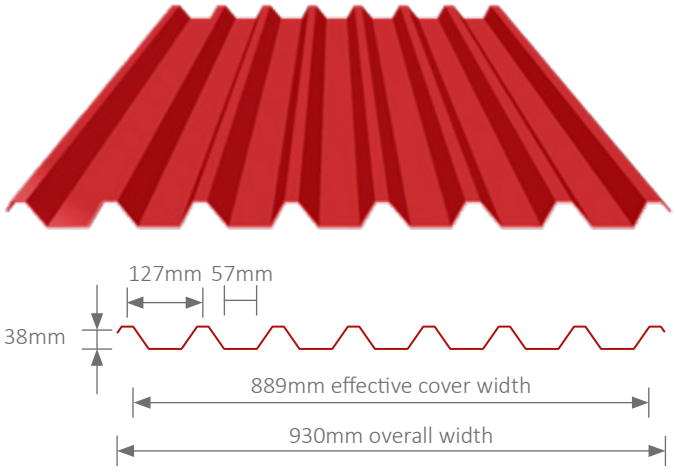
The general shape and appearance of the trapezoidal flutes ensures that Fluteline® is totally acceptable for use as roof and as wall cladding. The deep and broad flutes of the Fluteline® sheeting ensure excellent drainage characteristics, which makes it an ideal sheet for roofing applications. Fluteline® offers optimum strength-to-weight performance and is designed to provide the most advantageous load/span characteristics of our trapezoidal profiles. Fluteline® can be factory cranked, curved and bullnosed to a wide range of radii. For further details contact our Technical Department.

SAMPLE SPECIFICATION

Safintra 0.5mm thick, 889mm cover Fluteline® profiled Zincal® AZ 150 roof sheeting, fixed to intermediate steel purlins at 2500mm centres and eaves and ridge purlins at 2200mm centres, using #12 x 65mm self-tapping metal fasteners with a bonded washer.

Side laps to be secured using #14 x 22mm metal stitching fasteners with a bonded washer over purlins and at centres not exceeding 500mm with #14 x 22mm metal stitching fasteners between purlins. All in accordance with the manufacturer's recommendations.

The sheeting shall be Fluteline® profile as manufactured by Safintra Roofing. The profile shall be roll-formed with 8 trapezoidal ribs at 127mm centres with a nett cover of 889mm. The rib height shall be 38mm and shall be fixed in accordance with the manufacturer's recommendations.



MATERIAL OPTIONS

Aluminium-Zinc coated steel	Gauge (mm)
AZ 100 / 150 / 200 G550 Unpainted or pre-painted	0.47 0.50 0.53 0.55
Aluminium	**Gauge (mm)**
Unpainted or pre-painted	0.80
Zinc-coated steel	**Gauge (mm)**
Z200 / Z275 ISQ550/ISQ300 Unpainted or pre-painted	0.50 0.58

Other gauges are available on special request. All material is subject to availability.

Material and coating thickness can vary regionally. Consult your local Safintra branch for availability.

Note 1: When ordering Fluteline ensure you advise Safintra as to whether the end use is as roofing or cladding.

Note 2: When installing Fluteline® as side cladding, it is advisable to orientate sheets in a single direction, as this may have a visual impact when reflected in direct sunlight. The direction of the "dot matrix" branding that appears at regular intervals on the backing coat, can be used as a practical guide on site for roofing crews.

Note 3: Fluteline® is not rolled with stiffener ribs.

Note 4: During installation, clean the roof daily by removing all swarf, pop rivets and unused fasteners or any other debris.

Note 5: Safintra recommends the use of Fixtite™ fasteners. Refer to Corrosion Class table on page 58.

Note 6: All sheets are to be tanked or turned up at the ridge side of the sheet and are to be lipped or turned down at the eave end.

PURLIN SPACINGS

Purlin spacings are dependent on both downward loading and negative suction loading caused by wind. An engineer should be consulted to calculate the load (kN/m²) for your particular application.

Gauge (mm)	0.47	0.50	0.53	0.55	0.80
Material	Aluminium-Zinc coated steel	Aluminium-Zinc coated steel	Aluminium-Zinc coated steel	Aluminium-Zinc coated steel	Aluminium
Roofs	**mm**	**mm**	**mm**	**mm**	**mm**
Single span	1800	1900	2000	2100	1600
End span	2100	2200	2300	2400	1900
Internal/double span	2400	2500	2600	2700	2200
Cantilever	200	200	250	250	200
Side cladding					
End span	2300	2500	2700	3000	2300
Internal span	2700	2900	3100	3400	2700
Cantilever	300	300	400	400	300
Approximate mass (kg/m²)	4.91	5.22	5.54	5.74	3.07

Design requirements exceeding the above may be considered in consultation with the Safintra Technical Department.

Fluteline® 5 *Cover width for Fluteline®5 is 635mm.*

Fluteline® 7 *Cover width for Fluteline®7 is 889mm.*

FIXING GUIDE

Fluteline® is pierce fixed to timber or steel supports. This means that fastener screws pass through the sheeting. Always drive the fasteners perpendicular to the sheeting, and in the centre of the rib. It is recommended that side laps be stitched at 500mm centres.

It's further recommended that every rib is fixed at the eaves, ridges and the apex of the roof. Side and end laps are to be sealed (in accordance with SANS10400-L:2020) using a suitable butyl product or neutral cure Silicone. Refer to the Fixtite™ fastener section for fixing guidelines.

FASTENERS FOR FLUTELINE®

	Roof	Side cladding
Steel	#12 x 65mm hex head metal fastener	#12 x 25mm hex head metal fastener
Timber	#12 x 85mm hex head timber fastener	N/A

FLASHINGS AND SIDE STITCHING

	Roof	Side cladding
Steel	#14 x 22mm metal stitching fastener	
Timber		

LENGTHS AND ROOF PITCH

Fluteline® 7 sheeting can be ordered in any length, subject to transport limitations, up to 13.2m. Longer lengths require special transport arrangements. When using Fluteline® 7 sheeting the recommended minimum pitch for roof slopes in excess of 15m is 7.5° and for slopes less than 15m is 5°.

DIMENSIONAL TOLERANCES

A length variation range of +10mm or -0mm, and a width tolerance of ±5mm is permissible. This applies to straight sheet lengths only.

Note 7: Note that when using Aluminium material on galvanized steel purlins, the use of an isolation tape or similar to prevent the bridging of the two dissimilar materials is recommended. Should the two metals have direct contact it will ultimately result in the manifestation of bimetallic corrosion, and the service life of the Aluminium will be compromised.

**Refer to the Safintra Technical Department for more information or raise any enquiries in writing to info.safintrasa@safalgroup.com*

Trimflute®

Trimflute® is a subtle square fluted profile. The flute and discrete stiffening ribs in the pan give the profile its strength as well as its long spanning capabilities. Trimflute® can be used as a roofing as well as a cladding profile.

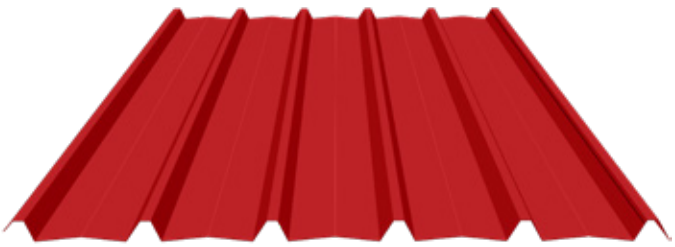
The square flutes of Trimflute® ensure excellent drainage characteristics. The contemporary appearance of Trimflute® is aesthetically appealing.

SAMPLE SPECIFICATION

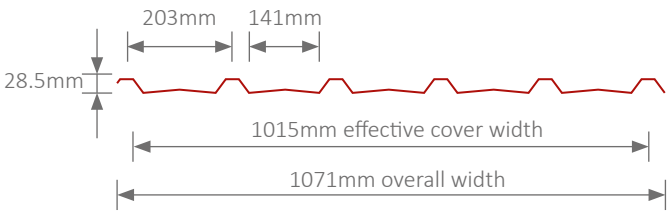
Safintra 0.50mm thick, Zincal® AZ 150 Trimflute® profile roof sheeting, fixed to internal steel purlins at 1700mm centres and to ridge and eaves purlins at 1500mm centres, with Fixtite™ or Safintra approved #12 x 65mm hex head self-drilling screws at every second crest, internal purlins at every crest. Eave purlins side laps to be stitched at 500mm centres between purlins with #14 x 22mm metal stitching fasteners, all in accordance with the manufacturer's recommendations.

The sheeting shall be Trimflute® type profile as manufactured by Safintra. The profile shall be roll-formed with 6 trapezoidal ribs at 203mm centres with a net cover of 1015mm.

The rib height shall be 28.5mm and shall be fixed in accordance with the manufacturer's recommendations.



Female rib Male rib



MATERIAL OPTIONS

Aluminium-Zinc coated steel	Gauge (mm)
AZ 100 / 150 / 200 G550 Unpainted or pre-painted	0.47 0.50 0.53 0.55
Aluminium	**Gauge (mm)**
Unpainted or pre-painted	0.80
Zinc-coated steel	**Gauge (mm)**
Z200 / Z275 ISQ550/ISQ300 Unpainted or pre-painted	0.50 0.58

Material and coating thickness can vary regionally. Consult your local Safintra branch for availability.

Note 1: When installing Trimflute® as side cladding, it is advisable to orientate sheets in a single direction, as this may have a visual impact when reflected in direct sunlight. The direction of the "dot matrix" branding that appears at regular intervals on the backing coat, can be used as a practical guide on site for roofing crews.

Note 2: Trimflute® does not get cranked in South Africa.

Note 3: During installation, clean the roof daily by removing all swarf, pop rivets and unused fasteners or any other debris.

Note 4: Trimflute® is a handed sheet with a capillary break on one side and should be installed accordingly.

Note 5: All sheets are to be tanked or turned up at the ridge side of the sheet and are to be lipped or turned down at the eave end.

PURLIN SPACINGS

Purlin spacings are dependent on both downward loading and negative suction loading caused by wind. An engineer should be consulted to calculate the load (kN/m²) for your particular application.

Gauge (mm)	0.47	0.50	0.53	0.55	0.80
Material	Aluminium-Zinc coated steel	Aluminium-Zinc coated steel	Aluminium-Zinc coated steel	Aluminium-Zinc coated steel	Aluminium
Roofs	**mm**	**mm**	**mm**	**mm**	**mm**
Single span	1200	1300	1500	1600	900
End span	1400	1500	1600	1800	1100
Internal/double span	1600	1700	1800	1900	1300
Cantilever	150	150	200	200	150
Side cladding					
End span	1600	1800	2000	2200	1300
Internal span	1900	2100	2300	2500	1600
Cantilever	200	200	300	300	250
Approximate mass (kg/m²)	4.30	4.57	4.85	5.03	2.69

Design requirements exceeding the above may be considered in consultation with the Safintra Technical Department.

FIXING GUIDE

Trimflute® is pierce fixed to timber or steel supports. This means that fastener screws pass through the sheeting. Always drive the fasteners perpendicular to the sheeting, and in the centre of the rib.

It is recommended that side laps be stitched at 500mm centres. It's further recommended that every rib is fixed at the eaves, ridges and the apex of the roof. The rib of Trimflute® with the capillary groove is always the underlap. It is generally considered good practice to use fasteners alongside laps. Side and end laps are to be sealed (in accordance with SANS10400-L:2020) using a suitable butyl product or neutral cure Silicone.

FASTENERS FOR TRIMFLUTE®

	Roof	Side cladding
Steel	#12 x 65mm hex head metal fastener	#12 x 25mm hex head metal fastener
Timber	#12 x 85mm hex head timber fastener	N/A

FLASHINGS AND SIDE STITCHING

	Roof	Side Cladding
Steel	#14 x 22mm metal stitching fastener	
Timber		

Note 6: Safintra recommends the use of Fixtite™ fasteners. Refer to Corrosion Class table on page 58.

LENGTHS AND ROOF PITCH

When using Trimflute® sheeting the recommended minimum pitch for roof slopes in excess of 15m is 10° and for slopes less than 15m is 7.5°. Trimflute® sheeting can be ordered in any length, subject to transport limitations, up to 13.2m. Longer lengths require special transport arrangements.

DIMENSIONAL TOLERANCES

A length variation range of +10mm or -0mm, and a width tolerance of ±5mm is permissible. This applies to straight sheet lengths only.

Note 7: Note that when using Aluminium material on galvanized steel purlins, the use of an isolation tape or similar to prevent the bridging of the two dissimilar materials is recommended. Should the two metals have direct contact it will ultimately result in the manifestation of bimetallic corrosion, and the service life of the Aluminium will be compromised.

**Refer to the Safintra Technical Department for more information or raise any enquiries in writing to info.safintrasa@safalgroup.com*

PIERCED FIX FLASHINGS AND CLOSURES

Flashings and closures are made for particular applications and locations on the roof, with variations to suit the specific profile being used.

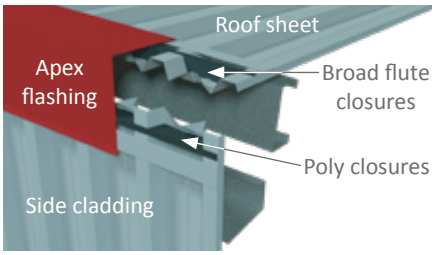
Industrial and commercial flashings tend to be functional more than aesthetic. Safintra makes a range of standard flashings which are suitable for this purpose. Residential flashings however, usually have an important aesthetic role which necessitates that they are designed for the structure in question.

Safintra is able to produce most custom designed flashings for residential and other applications. Please ask your local branch for more information.

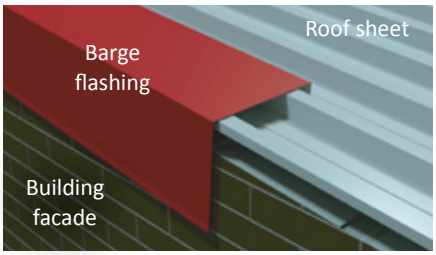
Flashings are usually made in the same material as the roof for colour matching. Complementing or matching colours may be used as required. All counter flashings are to be sealed with a neutral cure Silicone - not cement.

Note 1: Longitudinal flashings to be fastened at 500mm centres. Flashings to be lapped at minimum 150mm for roof flashings and at 100mm for side cladding. Flashings laps to be sealed using a suitable butyl product or neutral cure Silicone.

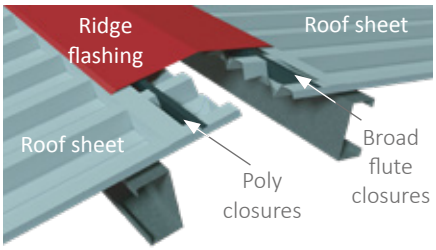
Apex flashing



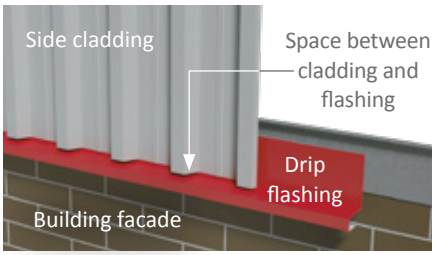
Barge flashing



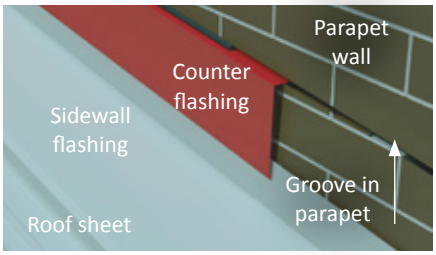
Ridge/hip flashing



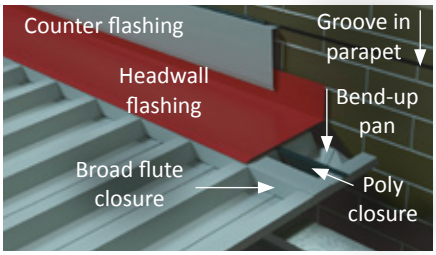
Drip flashing



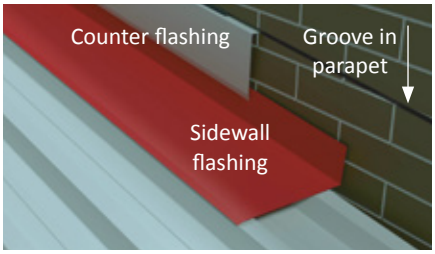
Counter flashing



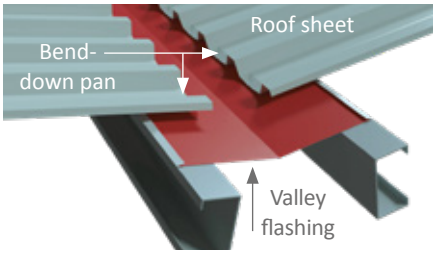
Headwall flashing



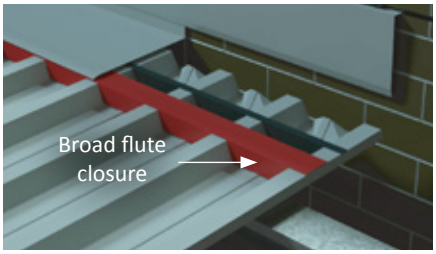
Sidewall flashing



Valley flashing

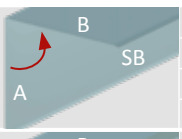
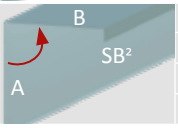


Broad flute closure



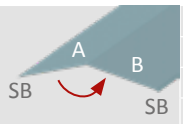
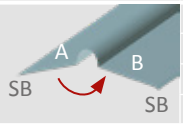
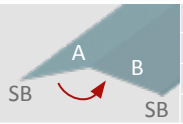
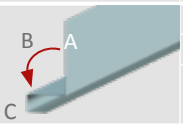
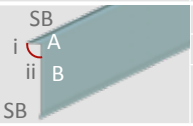
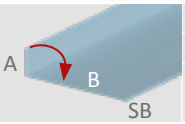
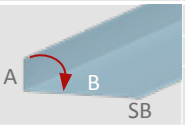
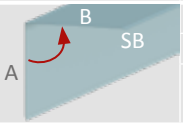
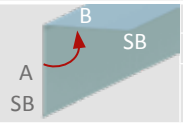
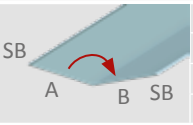
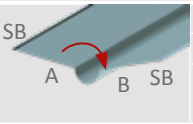
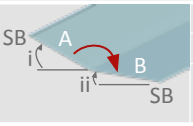
PIERCED FIX

classicorr corrugated | TUFDEK | WIDEDEK | FLUTELINE | Trimflute

Apex flashing		Dimensions	231 x 231
		Angle	Calculation: 90°- roof pitch
		Girth	462
		Comment	Use with broad flute closures + poly closures
Barge flashing		Dimensions	231 x 231
		Angle	90°
		Girth	462
		Comment	-

PIERCED FIX

classicorr corrugated | TUFDEK | WIDEDEK | FLUTELINE | Trimflute

Ridge flashing 	Dimensions	231 x 231					
	Angle	Calculation: 180°- (2 x roof pitch)					
	Girth	462					
	Comment	Use with broad flute closures + poly closures					
Roll top ridge flashing 	Dimensions	231 x 231					
	Angle	140° standard					
	Girth	462					
	Comment	Use with broad flute closures + poly closures					
Hip cap 	Dimensions	231 x 231					
	Angle	Calculation: 180°- (1.5 x roof pitch)					
	Girth	462					
	Comment	Use with blank closures notched + poly blocks					
Drip flashing 	Dimensions	60 x 50 x 20 x 24					
	Angle	95°					
	Girth	154					
Counter flashing 	Dimensions	SB 12 x 35 x 107					
	Angle	i)157.7° ii)88°					
	Girth	154					
Headwall flashing 	Dimensions	77 x 231					
	Angle	Calculation: 90° + roof pitch					
	Girth	308					
Sidewall flashing 	Dimensions	77 x 231	77 x 231	77 x 231	63 x 245	77 x 231	
	Angle	90°					
	Girth	308					
External corner 	Dimensions	231 x 231					
	Angle	90°					
	Girth	462					
Internal corner 	Dimensions	231 x 231					
	Angle	90°					
	Girth	462					
Valley flashing 	Dimensions	231 x 231					
	Angle	Calculation: 180° - (1.5 x roof pitch)					
	Girth	462					
	Comment	Stiffener bend at 158° angle					
Roll top valley flashing 	Dimensions	231 x 231					
	Angle	140° standard					
	Girth	462					
Under-over flashing 	Dimensions	231 x 231					
	Angle	Calculation: 180°- (i-ii)					
	Girth	462					
Broad flute closure	Profile						
	Length	N/A	700	775	900	1020	
	Comment	Need one closure per roof sheet					

All dimensions given in millimetres.
Diagrams are for illustrative purposes only.

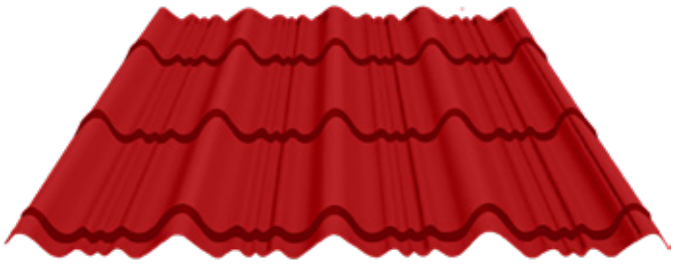
Note 2: SB = Stiffener bend is 15mm included at 15°, unless otherwise stated.

Versatile® is a premium roofing profile with the appearance of tiles but the strength and lightweight advantages of steel. It is available in a range of colours and in various thicknesses. Local manufacture ensures that Versatile® is available in even the smallest quantities and may be supplied in bespoke lengths.

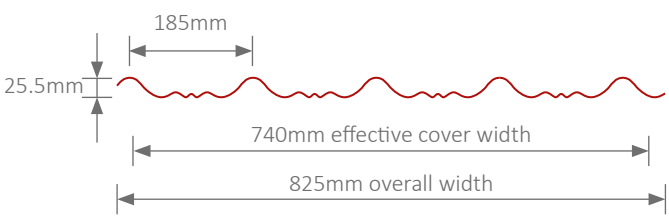
All this highlights Versatile® as a lightweight, durable and beautiful product that is ideal for the most discerning user with continuous sheet lengths ensuring water tightness. The tiled profile lends the visual effect of roof tiles combined with the security benefits of roof sheeting. The flexibility of steel makes this tile profile suitable for over-roofing of thatched roofs, round or curved roofs and otherwise limiting roof shapes.

SAMPLE SPECIFICATION

The roof shall be Safintra Versatile® profile in 0.4mm Zincal® or Colorplus® material. The profile shall be roll-formed with 4 large corrugations at 185mm centres giving an effective cover width of 740mm and a step every 300mm to a depth of 15mm. The rib height shall be 25.5mm.



Female rib Male rib



MATERIAL OPTIONS

Aluminium-Zinc coated steel	Gauge (mm)
AZ 100 / 150 / 200 G275 Unpainted or pre-painted	0.40

Versatile® is rolled in commercial quality steel only. All material is subject to availability.

Material and coating thickness can vary regionally. Consult your local Safintra branch for availability.

Note 1: Versatile® does not get cranked in South Africa.

Note 2: During installation, clean the roof daily by removing all swarf, pop rivets and unused fasteners or any other debris.

Note 3: Versatile® is a handed sheet with a capillary break on one side and should be installed accordingly.

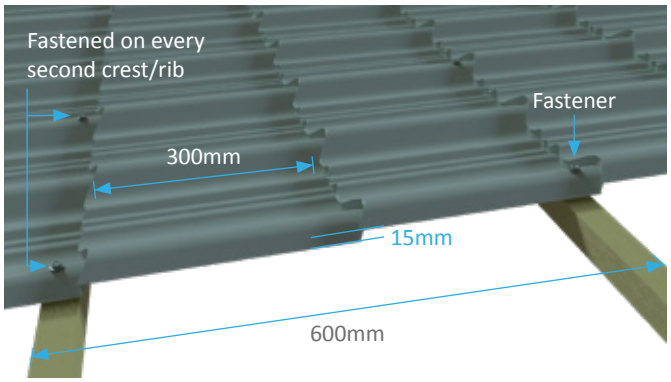
PURLIN SPACINGS

Purlin spacings are dependent on both downward loading and negative suction loading caused by wind. An engineer should be consulted to calculate your load (kN/m²) for your particular application.

Gauge (mm)	0.40
Material	Aluminium-Zinc coated steel
Roofs	**mm**
End span	600
Internal/double span	600
Cantilever	50
Approximate mass (kg/m²)	3.79

Design requirements exceeding the above may be considered in consultation with the Safintra Technical Department.

FIXING GUIDE



Versatile® is pierce fixed to steel or timber supports. This means that fasteners pass through the sheeting. To maximise water tightness, always place the roof fastener through the crest of the sheeting. Always drive the fastener perpendicular to the sheeting and in the centre of the crest. A standard lap is 1 flute. It is generally considered good practice to use fasteners alongside laps. It's further recommended that every rib is fixed at the eaves, ridges and the apex of the roof. Side and end laps are to be sealed (in accordance with SANS10400-L:2020) using a suitable butyl product or neutral cure Silicone.

FASTENERS FOR VERSATILE®

	Roof	Side cladding
Steel	#12 x 65mm hex head metal fastener	#12 x 25mm hex head metal fastener
Timber	#12 x 85mm hex head timber fastener	N/A

FLASHINGS AND SIDE STITCHING

	Roof	Side cladding
Steel	#14 x 22mm metal stitching fastener	
Timber		

LENGTHS AND ROOF PITCH

When using Versatile® sheeting, the recommended minimum roof pitch is 10°. Versatile® sheeting can be ordered in any length, subject to transport limitations, up to 13.2 metres. Longer lengths require special transport arrangements.

DIMENSIONAL TOLERANCES

A length variation range of +10mm or -0mm, and a width tolerance of ±5mm is permissible. This applies to straight sheet lengths only.

ROLL TOP RIDGES

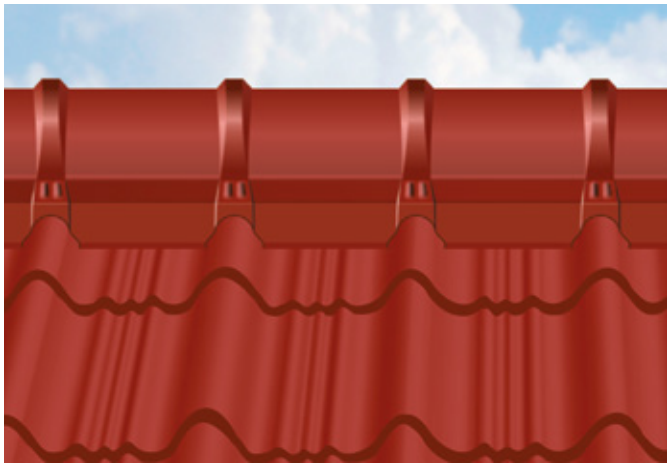
Versatile® is sold as a complete system, with its own distinctive roll top ridges which are designed to complement the profile. The roll top ridge may also be notched to allow it to seat in the profile as a closure.

Note 4: Safintra recommends the use of Fixtite™ fasteners. Refer to Corrosion Class table on page 58.

Note 5: The ridges have matching notches on either side. During installation, ensure that the Versatile® sheets are lined up to fit the notches on both sides of the roof. If laying sheets from left to right on the one face, the sheets on the opposite face should be laid starting from the same side.

Note 6: Note that when using Aluminium material on galvanized steel purlins, the use of an isolation tape or similar to prevent the bridging of the two dissimilar materials is recommended. Should the two metals have direct contact it will ultimately result in the manifestation of bimetallic corrosion, and the service life of the Aluminium will be compromised.

**Refer to the Safintra Technical Department for more information or raise any enquiries in writing to info.safintrasa@safalgroup.com*



Saflok 700®
The Peech Hotel - Gauteng

Pre-Engineered and Specialist Products

VENTILATORS AND LOUVRES
FOR INDUSTRIAL AND ARCHITECTURAL APPLICATIONS

Saftherm™ RADIANT BARRIER

Saftherm™ thermal insulation POLYESTER FIBRE BLANKET

FIXTITE™ FASTENERS

ROOF SPACER SYSTEM
IN SUPPORT OF ADVANCED PERFORMANCE

ROOF CLAMPS
HARD WORKING ROOF SYSTEMS

VENTILATORS AND LOUVRES

Safintra offers a range of locally manufactured architectural and industrial louvres as well as air vents for a variety of air intake or exhaust applications. All vents and louvres are manufactured from Aluminium-Zinc coated steel or Aluminium, to match the roofing material used, providing maximum corrosion resistance and aesthetic appeal. All our products are custom made to your specific requirements.

THE IMPORTANCE OF VENTILATION

Ventilation is important as it regulates the exchange of air to the outside as well as circulation of air within the building. Ventilators evacuate stale air from within a building, replacing it with cool fresh air from fixed louvres and other openings at low level. Good building ventilation will also assist in maintaining indoor air quality in buildings by limiting the concentration of carbon dioxide and airborne pollutants such as dust, smoke and volatile organic compounds (VOCs).

Natural ventilation refers to the process of supplying and removing air to and from indoor spaces by deliberate natural ventilation strategies, as opposed to mechanical ventilation.

The South African National Standards (SANS 10400 O & T) requires buildings to have openings in suitable positions:

- Natural ventilation through the exterior wall in the form of openable doors and windows (including louvres and ventilators) of which the aggregate area is at least 5% of the floor area.
- Natural ventilation through the roof, such as ventilators, of which the aggregate area is at least 2% of the floor area.
- Mechanical smoke ventilation or roof ventilators of which the aggregate area is between 3% and 5% of the floor area.

Safintra Ventilators and Louvres

Safintra manufactures bespoke ventilators and louvres for natural ventilation. They are not mechanical, and require no power.

Features and Benefits

- Available in a variety of colours to complement architectural features.
- Wide range of fixed louvre shapes available.
- Various dimensions of ridge and slope mounted ventilators.
- Manufactured from Aluminium-Zinc coated steel or Aluminium, to match the roofing material used and ensure aesthetic appeal.
- No operating costs.

TECHNICAL SERVICES AND SUPPORT

Safintra offers full technical support and advice from project design to installation. It is strongly recommended that an approved installation company is appointed to install any roofing system or component thereof. This includes sheeting, louvres and ventilators.

ACCESSORIES

Accessories such as flashings and bird/vermin proofing available on request.

FASTENERS AND ACCESSORIES

All fasteners should have rubber sealing washers which should be free of Carbon fillers. Fasteners should be as durable as the roof sheeting. We recommend the use of Fixtite™ fasteners or Safintra approved fasteners for the appropriate metal sheeting.

COLOUR AVAILABILITY

Colours available as per the standard colour options provided by Safintra South Africa. Bespoke colours available on request.

Note 1: Louvres can be made in customised sizes as required. It must further be noted that the aggregate throat area may be affected.

SAFINTRA FIXED LOUVRES (SFL)

The Safintra range of fixed louvre systems are designed to complement any metal cladding profile and are ideal for use in commercial applications both for practicality as well as architectural aesthetics.

SAMPLE SPECIFICATION

Safintra branded SFL4 fixed louvres in AZ 150/200 in square/rectangular/round/triangular [in height x width (mm)], in Zincal®/Colorplus® (specify colour), mounted in a metal surround frame into cladding/masonry, flashed according to manufacturer's recommendations.

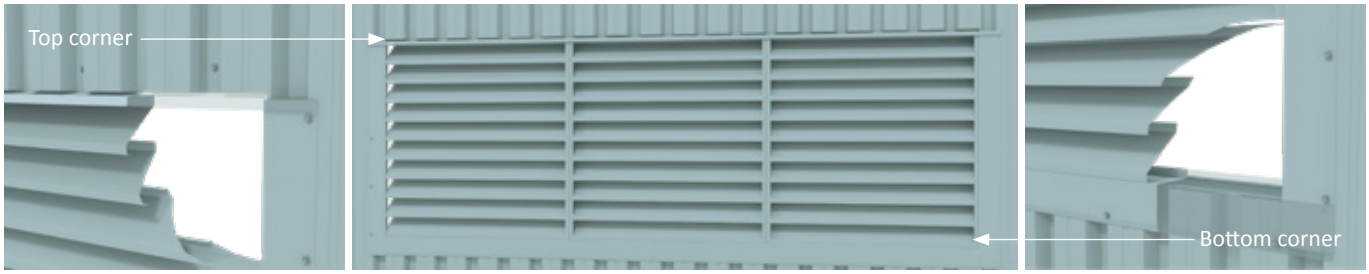
FIXED LOUVRE MODEL STANDARD DIMENSIONS

	SFL3	SFL4	SFL5	SFL6	SFL7	SFL8	SFL9	SFL10
Overall height A (mm)	300	400	500	600	700	800	900	1000
Overall width std B (mm/m)	1000	1000	1000	1000	1000	1000	1000	1000
Overall depth std (mm)	100	100	100	100	100	100	100	100
Free measured throat area (m^2/m)	0.123	0.185	0.246	0.308	0.369	0.431	0.492	0.554
Zincal®/Colorplus® steel mass (kg/m)	4.03	4.97	5.91	6.85	7.79	8.73	9.67	10.61
No. of blades	3	4	5	6	7	8	9	10

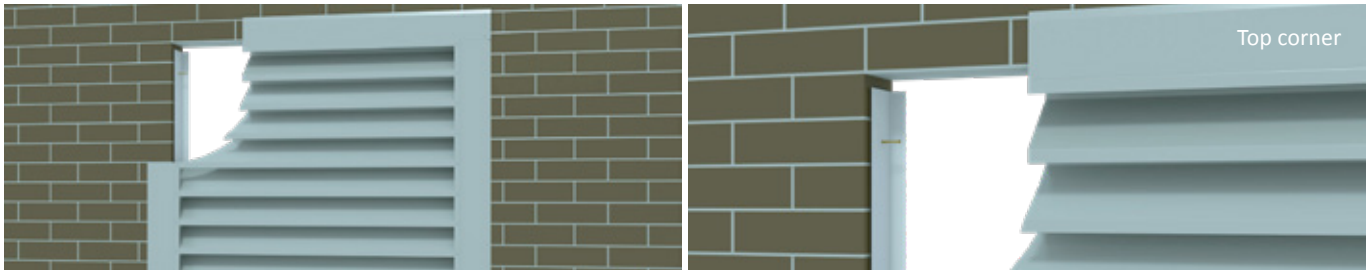
$$\text{Louvre type required} = \frac{\text{Ventilation required } (m^2)}{\text{Free measured throat area } (m^2)}$$

Note 2: Louvre installation details are for illustrative purposes only. Every installation should be treated as project specific and flashed accordingly.

LOUVRE INSTALLATION INTO SIDE CLADDING



LOUVRE INSTALLATION INTO MASONRY



VENTILATORS AND LOUVRES

SAFINTRA VENTILATORS

The ventilator range comes in ridge or slope mounted options. Finished in high-quality Aluminium-Zinc coated steel or Aluminium, the Safintra ventilator range will exhaust stale air within a building, replacing it with cool fresh air from fixed louvres and other openings at a lower level. Slope and ridge-mounted ventilators are manufactured to suit any roof profile and roof aesthetics.

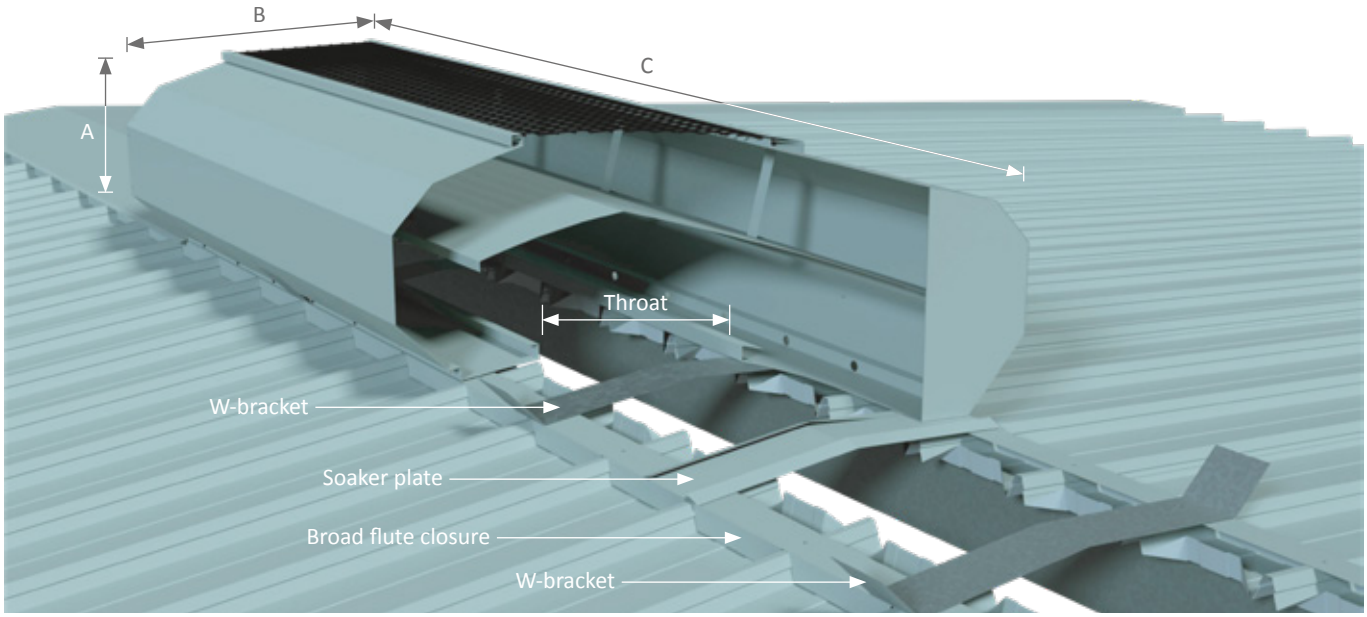
Note 3: Safintra ventilators are to be installed using W-brackets produced from compatible coated steel with a minimum thickness of 0.8mm. Three W-brackets are required per ventilator.

SAMPLE SPECIFICATION

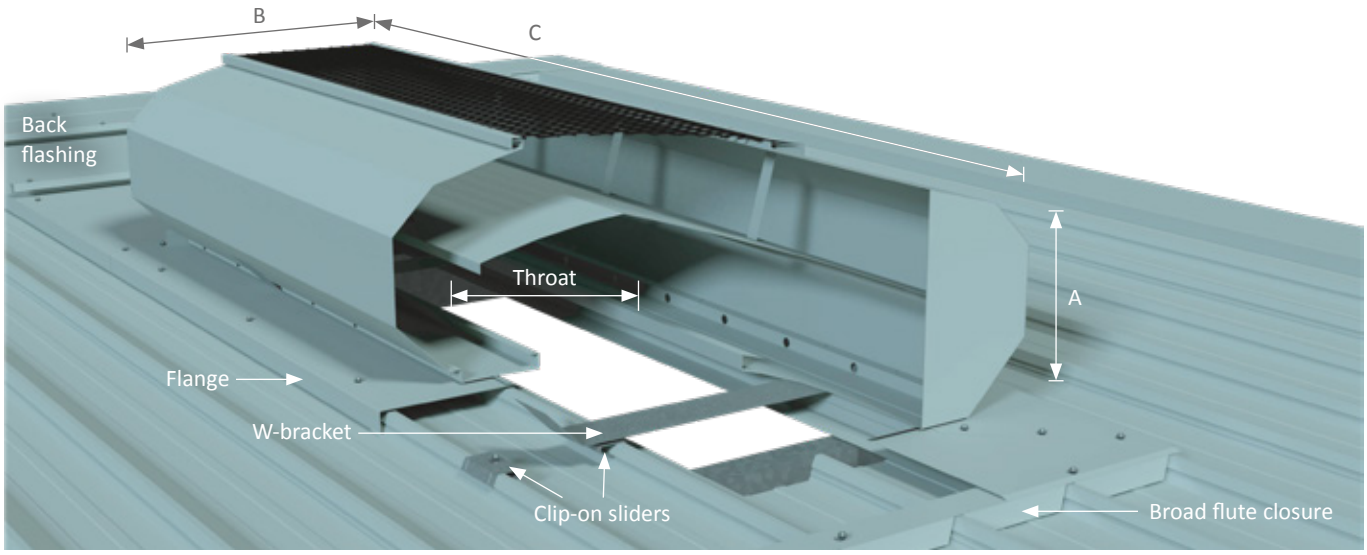
Supply Safintra branded ridge/slope ventilators in AZ 150/200 with a 300mm throat in Zincal®/Colorplus® (specify colour), mounted to support brackets onto the purlin, with a #14 x 22mm Fixtite™ metal stitching fastener, and flashed according to the manufacturer's recommendations.

Note 4: Safintra can assist in sourcing mechanical / fire ventilators and turbo ventilators.

RIDGE VENTILATOR FIXED TO PIERCED/CONCEALED FIX ROOF SHEETING



SLOPE VENTILATOR FIXED TO CONCEALED FIX ROOF SHEETING



SAFINTRA VENTILATOR MODELS STANDARD DIMENSIONS

	SV230	SV300	SV450	SV600
Throat size (mm)	230	300	450	600
Free measured throat area (m^2/m)	0.230	0.300	0.450	0.600
Overall height (A) (mm)	351	387	550	714
Overall width (B) (mm)	638	822	1223	1641
Standard length (C) (mm)	2450	2450	2450	2450
Zincal®/Colorplus® steel mass (kg/m)	12.00	14.83	21.70	23.40

$$\text{Ventilator type required} = \frac{\text{Ventilation required } (m^2)}{\text{Free measured throat area } (m^2)}$$

AIR FLOW PER SECOND THROUGH ONE METRE OF VENTILATOR ($M^3/_S$)

Definition of stack height	Height of the ventilator throat above ground level, minus 1.5m			
Temperature difference	The difference between the outside and inside air temperature			
Throat size	Stack height	Low wind speed airflow (2m/s) or (7.2k/h)		
		Temperature difference (°C)		
		0	2	4	6
230mm	0m	0.110	0.110	0.110	0.110
	3m	0.110	0.126	0.140	0.153
	6m	0.116	0.145	0.168	0.189
	9m	0.126	0.165	0.196	0.223
	12m	0.132	0.180	0.218	0.250
	15m	0.137	0.193	0.237	0.274
	18m	0.140	0.205	0.254	0.295
300mm	0m	0.137	0.137	0.137	0.137
	3m	0.137	0.157	0.174	0.190
	6m	0.144	0.180	0.210	0.236
	9m	0.157	0.205	0.244	0.277
	12m	0.164	0.224	0.271	0.311
	15m	0.170	0.241	0.295	0.340
	18m	0.175	0.256	0.316	0.367
450mm	0m	0.205	0.205	0.205	0.205
	3m	0.205	0.235	0.261	0.284
	6m	0.215	0.269	0.313	0.352
	9m	0.234	0.306	0.364	0.414
	12m	0.246	0.335	0.405	0.464
	15m	0.254	0.360	0.441	0.509
	18m	0.261	0.382	0.473	0.549
600mm	0m	0.229	0.229	0.229	0.229
	3m	0.229	0.262	0.291	0.317
	6m	0.240	0.300	0.349	0.393
	9m	0.261	0.341	0.406	0.462
	12m	0.274	0.373	0.452	0.518
	15m	0.284	0.401	0.491	0.567
	18m	0.291	0.426	0.527	0.612

Ventilation table disclaimer: *The figures in this table are theoretical and may vary depending on the following factors: building shape and size, air filtration through the building envelope, temperature and air pressure differences between interior and exterior, prevailing wind direction and speed relative to the ventilator, external pressure coefficient depending on the roof pitch and position of the ventilator and actual ventilator discharge coefficient after the bird/vermin proofing has been installed. Consult your engineer for project specific calculation requirements.*

Saftherm™
RADIANT BARRIER

PRODUCT DESCRIPTION AND FEATURES

Saftherm™ radiant barrier is your first line of defence against radiant heat and is made from high quality Aluminium and other materials to reinforce the membranes. This reflective foil adds to indoor comfort against heat, cold, dust, moisture and reduces energy consumption.

Note 1: When in storage Saftherm™ radiant barrier should be kept in a clean, dry environment and should not be exposed to direct sunlight.

TIPSA
THERMAL INSULATION PRODUCTS & SYSTEMS ASSOCIATION SA

SAFTHERM™ RADIANT BARRIER RESIDENTIAL

Saftherm™ 201 FR

- Non-tear single sided
- Area: 45m²
- Width: 1.25m
- Length: 36m
- R-value range: 1.34 - 1.49*
- Fire rating: B/B3

Reflective Aluminium foil
PE tie layer
Woven fabric

Saftherm™ 202 ECO

- Non-tear double sided
- Area: 45m²
- Width: 1.25m
- Length: 36m
- R-value range: 1.36 - 1.49*
- Fire rating: B/B1

Reflective MPET
PE tie layer
Leno fabric
PE tie layer
Reflective Aluminium foil

Saftherm™ 202 FR

- Non-tear double sided
- Area: 50m²
- Width: 1.25m
- Length: 40m
- R-value range: 2.15 - 2.21*
- Fire rating: A/A1

Reflective Aluminium foil
PE tie layer
Woven fabric
PE tie layer
Reflective Aluminium foil

SAFTHERM™ RADIANT BARRIER COMMERCIAL/INDUSTRIAL

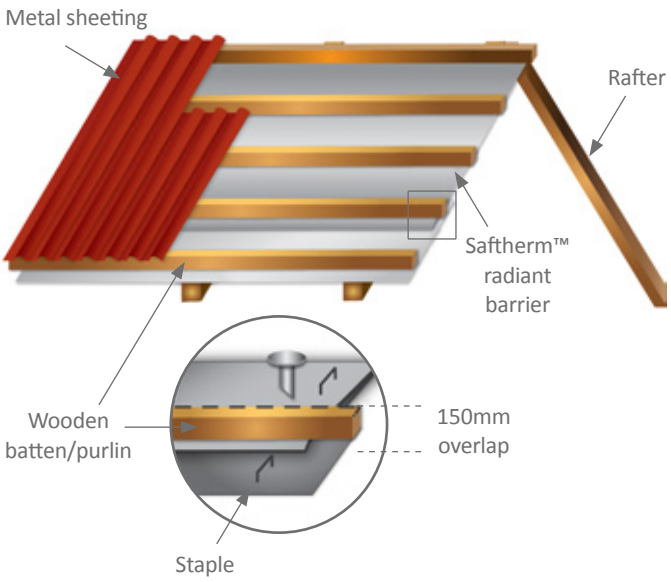
Saftherm™ 203 ECO

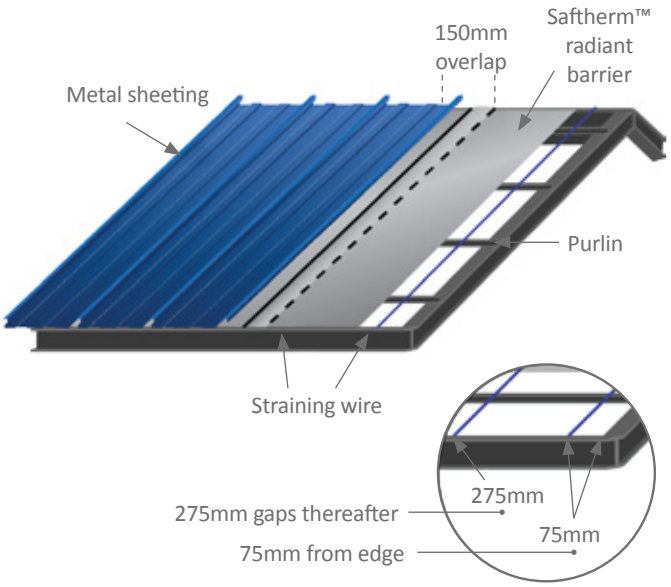
- Rigid double sided
- Area: 50m²
- Width: 1.25m
- Length: 40m
- R-value range: 2.31 - 2.42*
- Fire rating: B/B1/2/H only SP

Reflective Aluminium foil
PE tie layer
Paper
PE tie layer
Reinforcement
Reflective Aluminium foil

**Please contact us should you require further information on the R-value test methods.*

INSTALLATION





Residential Installation Method

1. Saftherm™ radiant barrier must be unrolled horizontally across the rafters with the printed side facing up.
2. Saftherm™ radiant barrier must be overlapped by 150mm at all joins. Overlap guideline markings are printed onto the rolls for ease of use.
3. To ensure maximum performance, an air gap is required between the Saftherm™ radiant barrier and the roof sheeting.
4. Saftherm™ radiant barrier must be fixed between the rafters and the battens.
5. It is suggested that Saftherm™ radiant barrier be pulled hand-taut across the rafters. Do not excessively stretch the material.
6. Saftherm™ radiant barrier should not be left exposed to sunlight or wind for long periods of time.

Industrial/Commercial Installation Method

1. Straining wire to be installed above the purlins and evenly tensioned. The initial straining wire is to be spaced 75mm away from the gable end, with subsequent spacing at 275mm.
2. Saftherm™ radiant barrier must be installed with the printed side facing up.
3. To ensure maximum performance, an air gap is required between the Saftherm™ radiant barrier and the roof sheeting.
4. Saftherm™ radiant barrier must be overlapped by 150mm at all joins. Overlap guideline markings are printed onto the rolls for ease of use.
5. It is suggested that Saftherm™ radiant barrier be pulled hand-taut across the rafters. Do not excessively stretch the material.
6. Saftherm™ radiant barrier should not be left exposed to sunlight or wind for long periods of time.

BENEFITS OF INSTALLING SAFTHERM™ RADIANT BARRIER

Energy Efficient
Allows for reduced energy consumption.

Economical
Maintenance free and prolonged longevity.

Vapour Barrier
Prevents moisture from entering the building.

Environmentally-friendly
Allows for reduced energy demand inside the building.

Thermal Resistance
Effectively reflects up to 97% of radiant heat.

Fire Rating
Fire Rating is SANS 428 compliant.

Dust Proofing
Reduces dust entering the roof space.

Temperature Control
Radiant barrier offers superior temperature control.

Saftherm™
thermal insulation
POLYESTER FIBRE BLANKET

Polyester fibre insulation blanket manufactured using recycled polyethylene terephthalate (PET) plastic. The blankets are supplied in rolls with various thickness.

PROPERTIES:

- Saftherm™ PET blankets are friendly to the touch, will not irritate the skin and do not affect breathing in any way.
- Saftherm™ PET blankets have been tested by SABS for thermal performance as well as for fire propagation (test reports available on request).
- Saftherm™ PET blankets are manufactured to ISO9001 Standards.
- Saftherm™ PET blankets do not collapse over time and retain their "loft".
- On flat ceilings, Saftherm™ can be laid in between the trusses on top of the battens.
- VOC Free / ODP 0%.

SAMPLE SPECIFICATION

Safintra Saftherm™ polyester fibre blanket, 100mm thick, with a density of 10 kg/m³ and a R-value of not less than 2.0m²K/W, cut to size and laid over battens within the ceiling void, offcuts to be inserted between the ceiling and rafter to ensure complete coverage.

See table below for thickness specification.

Note 1: The system R-value is a conservative estimate which includes the insulation layers, air gaps, roof, and ceiling.

PRODUCT RANGE OVERVIEW

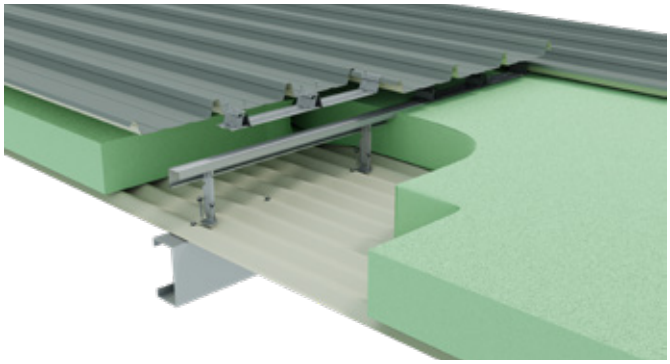
The R-value of Saftherm™ (m²K/W) is the measure of an insulation products availability to restrict heat transfer.

Thickness	Density	Width*	Length	R-value	System R-value
40mm	7.5kg/m³	1.2m	10m	0.8	1.2
55mm	6kg/m³	1.2m	10m	0.9	1.3
75mm	10kg/m³	1.2m	8m	1.5	1.9
100mm	10kg/m³	1.2m	6m	2.0	2.4
135mm	10kg/m³	1.2m	5m	2.7	3.1
100mm	11.5kg/m³	1.2m	8m	2.3	2.7
135mm	11.5kg/m³	1.2m	5m	3.1	3.5
145mm	11.5kg/m³	1.2m	5m	3.3	3.7

**750mm wide rolls available on request.*

INSTALLATION

Built-up system

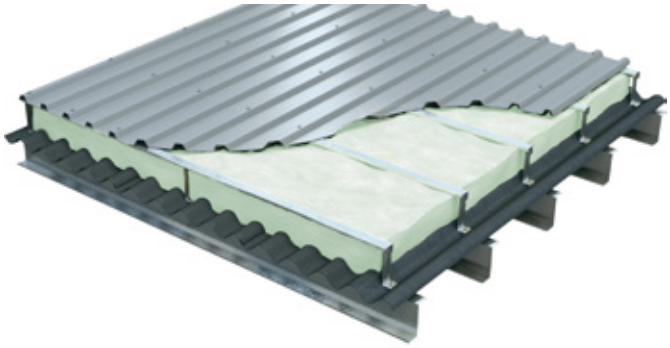


Spacer system in conjunction with a liner sheet to create a void for the Saftherm™ polyester blanket insulation.

In ceiling void (domestic application)

Saftherm™ polyester blanket insulation cut and snugly placed in the ceiling void between the trusses.

Over-roofing



Spacer system used to over-roof an existing asbestos roof with Saftherm™ polyester blanket insulation installed in the void created.

Note 2: Safintra does not recommend the compression of blanket insulation as it can negatively impact performance.

BENEFITS OF INSTALLING SAFTHERM™ POLYESTER BLANKETS

- **Easy to roll and cut**
- **The fibres won't absorb water, but the blanket will retain moisture when it gets wet**
- **Excellent thermal stability**
- **Electricity savings due to better temperature control (heating and cooling)**
- **Keeps homes warm in winter and cool in summer**
- **Extremely cost effective**
- **PET plastics are recyclable**
- **Increases the energy efficiency of buildings**
- **Maintenance free**
- **Ideal for built up roof systems**
- **Odourless**
- **Can be used in residential, commercial and industrial applications**
- **Can be used for acoustic noise reduction**

The metal sheeting and accessory products produced by Safintra are manufactured from the highest quality materials, and conform to the relevant South African National Standards. Safintra will not accept any form of liability for poor performance as a result of the incorrect or inferior fasteners being used in conjunction with their products. Ensure that all fasteners used in an installation are in accordance with Safintra's published recommendations.

CHOOSING THE CORRECT CLASS OF FASTENER

It is imperative when using superior corrosion resistant steel roofing, cladding and accessory materials that the performance of the fasteners used to fix these materials have the same or superior service life. Specifying the correct fasteners for these projects is critical for long term performance and aesthetics. The Fixtite™ fastener application guide table gives a general guide to the fastener metal type recommended for various Safintra steel roofing products. In the interest of quality assurance it is essential that fasteners used comply with the South African National Standard SANS 1273:2011.

FASTENER TYPES

There are two fastener designs to be considered for use with Safintra's materials:

- Fixtite™ self-drilling screws for fastening cladding to a building structure.
- Accessory fasteners for fastening roofing accessory items such as flashings.

Where accessory fasteners such as pop rivets are required, they should be manufactured from Aluminium when fastening Aluminium-Zinc coated steel. In the case of stainless steel, compatible stainless steel pop rivets must be used.

COMPATIBILITY

Fasteners containing elements of stainless steel, Lead, Copper, and Copper containing alloys (such as MONEL) should not be used in conjunction with Aluminium-Zinc coated steel or pre-painted steel.

WASHERS USED WITH FASTENERS

The rubber washer component of self-drilling screws must be manufactured from materials compatible with the roofing material.

Washers containing significant levels of conductive Carbon black fillers are NOT suitable for use with Aluminium-Zinc alloy coated and pre-painted Aluminium-Zinc coated products, particularly in marine environments. Therefore fasteners must be assembled with Carbon-black-free washers.

SHANK CORROSION

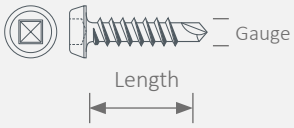
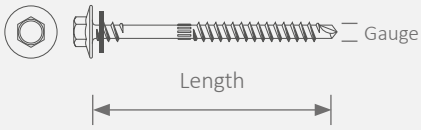
In certain applications the fastener may be exposed to a greater risk of corrosion as a result of specific environments (e.g. high condensation and specific service environments such as intensive animal farming). Under the South African National Standards, corrosion classification is based on the fastener heads rather than the shanks. It is advisable to enquire about the fastener's porosity rating if intended use will be under service specific conditions.

Corrosion Class	C3 (Class 3)	C4 (Class 4)
Environment corrosion	Average	High
Outdoors	Atmospheres with moderate levels of airborne pollution. Coastal areas with low salt levels. Urban and industrial areas.	Atmospheres with discernible levels of airborne pollution processes. Industrial areas. Coastal areas with moderate salt levels.
Indoors	Areas with moderate levels of humidity and some airborne pollution from production processes. Laundries, breweries, dairies.	Areas with high levels of considerable airborne pollution from production processes. Chemical plants, swimming pools, dockyards.
Steel: Mass loss (g/m²/year) Thickness reduction (µm)	>200 - 400 >25 - 50	>400 - 650 >50 - 80
Zinc: Mass loss (g/m²/year) Thickness reduction (µm)	>5 - 15 >0.7 - 2.1	>15 - 30 >2.1 - 4.2
Recommended fastener material and minimum surface treatment	Fixtite™ Class 3	Fixtite™ Class 4

Note 1: For concealed fix applications, nothing less than Class 3 is recommended.

All Fixtite™ fasteners carry a manufacturer's warranty and comply with SANS1273-2011 (AS3566-2-2002) Standards.
All Safintra roof systems will only be warranted if installed with Safintra-approved fasteners.

HOW TO READ OUR FASTENER SIZES

Gauge (mm)	Threads per inch	Length	Wafer head	Hex head
12	14	75mm		
(Diameter of shank including thread) #8 - 4.2mm #10 - 4.8mm #12 - 5.5mm #14 - 6.3mm	Number of thread crests that can be counted along a lineal measurement of 1 inch (TPI).	Overall length of shank including drill point, up to shank beneath head.		

Note 2:
- All Safintra Fixtite™ fasteners provide optimal service life with Aluminium-Zinc coated steel.
- Different lengths/types of fasteners are available on request, including stainless steel.
- For optimal performance, the service life warranty of fasteners must match the service life warranty of the sheeting.
- Only Class 3 (concealed fix) and Class 4 fasteners are suitable for use with Aluminium-Zinc coated steel (unpainted or pre-painted).
- Class 4 coastal application should be discussed with Safintra's technical team for guidance.
- Only use stainless steel fasteners for Aluminium sheeting.

FIXTITE™ FASTENER APPLICATION GUIDE

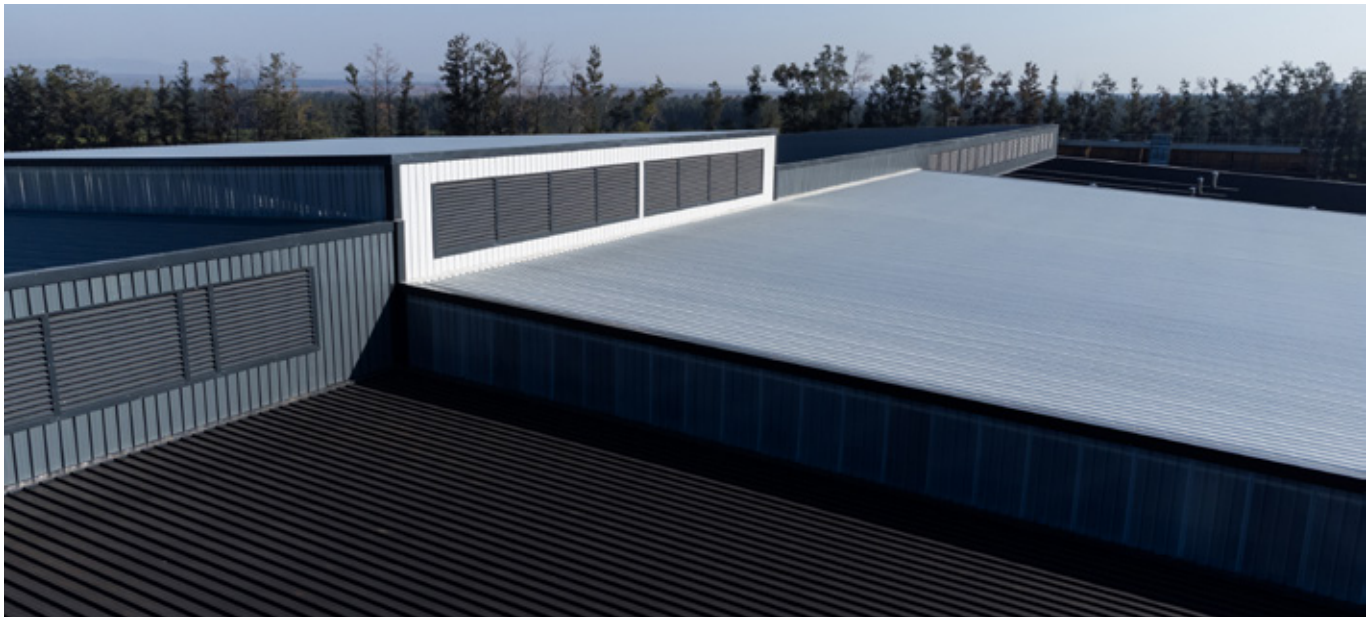
Metal applications

#10 x 22mm wafer head metal fastener	
For concealed fix onto metal (Saflok 700®, Saflok 410® and Newlok™)	
#12 x 65mm hex head metal fastener	
For trapezoidal onto metal (Tufdek® IBR, Widedek®, Fluteline® and Trimflute®)	
#12 x 38mm hex head metal fastener	
For pierced fix onto metal (Classicorr® corrugated)	
#14 x 22mm metal stitching fastener	
For stitching of sheeting and flashings, and use with 5-5 clamps	
#12 x 25mm hex head metal fastener	
For side cladding onto metal	

Timber applications

#10 x 45mm wafer head timber fastener	
For concealed fix onto timber (Saflok 700®, Saflok 410® and Newlok™)	
#12 x 85mm hex head timber fastener	
For trapezoidal onto timber (Tufdek® IBR, Widedek®, Fluteline® and Trimflute®)	
#12 x 65mm hex head timber fastener	
For pierced fix onto timber (Classicorr® corrugated)	

SAFINTRA® ROOF SPACER SYSTEM



BENEFITS OF OVER-ROOFING

Minimises building occupants risk and disruption of trade
Legislation stipulates that occupants of a building must vacate the premises when metal roof sheets are being removed. Leaving the existing roof covering in-situ allows the occupants of the building to continue with their 'day-to-day' business operations without costly disruptions to trade. Over-roofing also negates the consequential damage due to inclement weather and falling debris usually associated with conventional reroofing. This is eliminated when over-roofing.

Labour and time savings
Leaving the existing roof covering in place eliminates the removal phase. This, in turn, reduces the duration of the project which contributes to significant financial savings.

Improved health and safety
The existing metal roof sheets remain in place, providing the contractor with a platform to work from. This significantly simplifies the fall protection plan required.

Energy efficiency
Over-roofing with the Safintra® Roof Spacer System creates an engineered, structurally defined cavity between the old and new roof coverings. When insulated, this cavity dramatically improves the overall energy efficiency of the entire building. With ever-increasing electricity prices, energy consumption has become a big concern for most property owners and tenants. Significant financial savings are possible over the life cycle of the new roof covering when insulated appropriately.

Acoustic performance
Creation of an insulated cavity dramatically improves the acoustic performance of a roof. Acoustic performance is imperative when a conducive environment is required in places of learning, libraries, broadcasting facilities, courthouses etc.

Security
Over-roofing incorporates a second layer of roof covering that provides additional security. The majority of commercial break-ins occur through the roof. This additional layer of roof covering provides an extra barrier to deter criminals.

All spacer support systems are at risk during the installation stage when they are not restrained by the sheeting and are subjected to forces from foot traffic, temporary loading and high winds.

Accurate, close-fitting and reliable bar connections are also required to ensure the stability of any spacer support system during construction with some systems even having to rely upon screw fixings to prevent their bars from separating*.

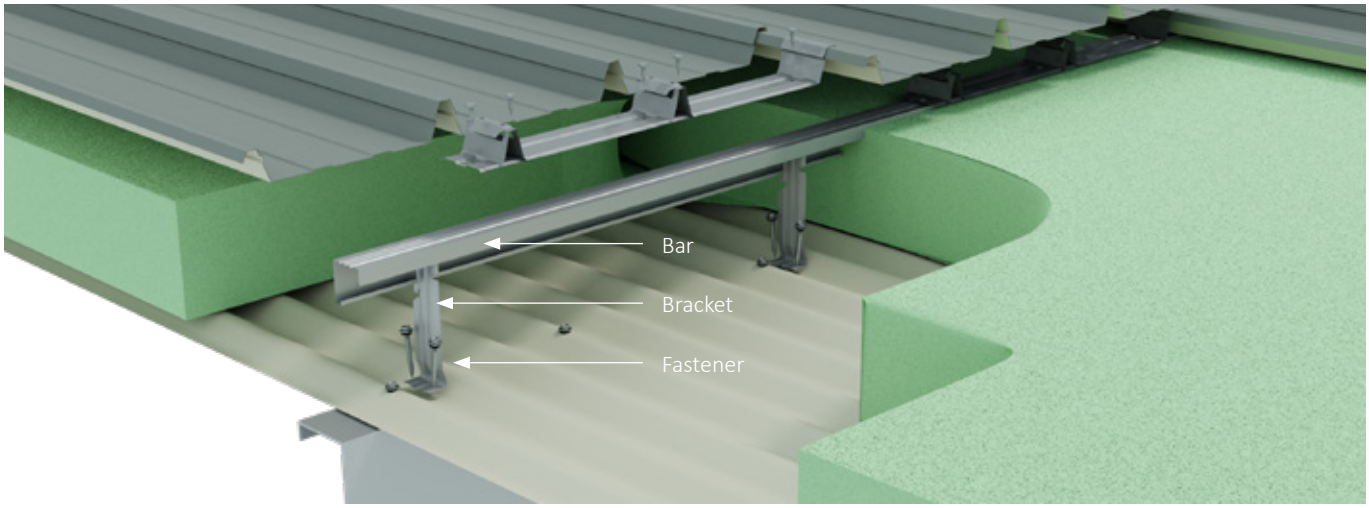
- The Safintra® Roof Spacer System can accommodate any depth of insulation required by legislation.
- No need for bar end fixings - saving time and cost.
- Raises the standards for spacer support systems.
- Maximum spigot efficiency is always achieved and a consistent module maintained.
- Allows continuous load transfer throughout the bar run.
- High performance brackets with deeper ribs for improved structural performance.
- Brackets include an EPDM base pad to eliminate thermal bridging.
- No requirement for anti-sway brackets below 250mm** construction depth.
- Quick, easy and safe insertion of brackets from the side or from the bar ends.
- Brackets can be easily repositioned if required.

- High fixing torque and increased pull-out strengths achieved.
- Comprehensive and friendly technical backup with nationwide distribution.
- Products manufactured to BS EN ISO 9001: 2000.

**Inline forces can be transmitted through the joint without the need for screw fasteners.*

***For exceptional site loading conditions and for heights above 250mm advice on performance should be sought from the Safintra SA Technical Department.*

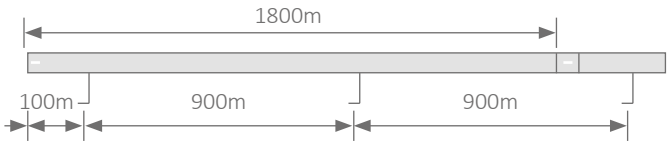
SYSTEM COMPONENTS AND BRACKET CONFIGURATION



FASTENERS FOR SAFINTRA® SPACER SYSTEM

Steel purlin	#12 x 25mm hex head metal fastener
Timber purlin	#12 x 45mm hex head timber fastener

Note 1: A bracket must always be placed within 100mm of each end of the total Safintra® roof system section.

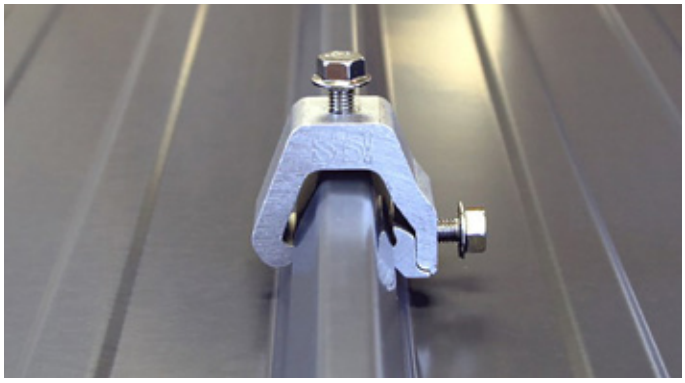


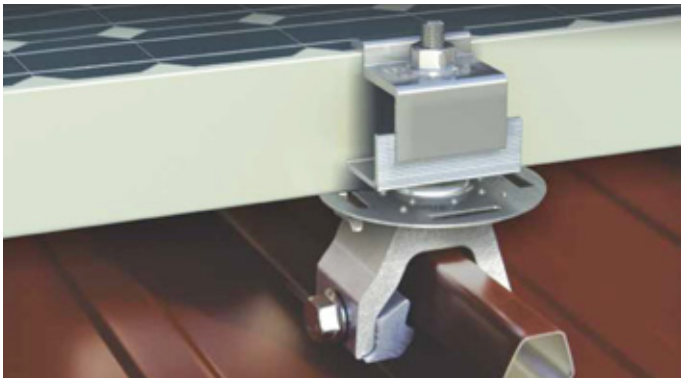
Multi-span bracket configuration

Multi-span condition - bracket configuration

Bar spacing (m)	Direction of loading	Bracket centres along bar (m)
		0.90
		Loading in kN/m²
1.0	Download Uplift	3.33 3.07
1.1	Download Uplift	3.03 2.79
1.2	Download Uplift	2.78 2.56
1.3	Download Uplift	2.56 2.36
1.4	Download Uplift	2.38 2.19
1.5	Download Uplift	2.22 2.05
1.6	Download Uplift	2.08 1.92
1.7	Download Uplift	1.96 1.81
1.8	Download Uplift	1.85 1.71
2.0	Download Uplift	1.67 1.53
2.1	Download Uplift	1.59 1.46

SAFINTRA® ROOF CLAMPS





WHY USE SAFINTRA ROOF BRACKETS?

The Safintra® roof clamp does not penetrate the sheet for concealed fix systems and therefore will not void the warranty on the material. Furthermore, clamps are tested for performance and compatibility with Safintra's roofing and cladding profiles specifically.

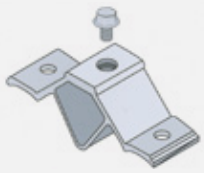
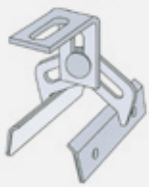
Safintra® roof clamps are all Aluminium with stainless steel hardware and are fully compatible with Aluminium and Aluminium alloy products. You have a rated/proven connector platform for all add-ons.

Note 1: Technical consultation with Safintra SA is mandatory on this product line.

Note 2: Roof clamps must not be fixed onto overlaps or installed within 75mm of the supporting structure where sheets are fixed using concealed fix clips or cleats.

Compatible profile	Clamp	Accessories	
NEWLOK™ standing seam roofing 	**S-5-H90 Standard**		
			S-5-PV kit with edge-grab
			S-5-PV kit with mid-grab
	S-5-H90 Mini		
			S-5-PV kit with edge-grab
			S-5-PV kit with mid-grab

Compatible profile	Clamp	Inserts		Accessories	
SAFLOK 700® concealed fix roofing	**S-5-K Grip standard**				
			S-5 700 standard insert		S-5-PV kit with edge-grab
			S-5 410 standard Insert		S-5-PV kit with mid-grab
	Clamp			**Accessories**	
	LM-KS-700				
					LM-EC end clamp
					LM-IC inter clamp
SAFLOK 410® concealed fix roofing	**S-5-K Grip mini**				
			S-5 700 standard Insert		S-5-PV kit with edge-grab
			S-5 410 standard Insert		S-5-PV kit with mid-grab

Compatible profile	Clamp	Accessories	
classicorr® corrugated	**S-5 Corrubracket standard**		
			S-5-PV kit with edge-grab
			S-5-PV kit with mid-grab
	S-5 Corrubracket mini		
			S-5-PV kit with edge-grab
			S-5-PV kit with mid-grab
TUFDEK IBR®	**S-5 Trap bracket**		
			S-5-PV kit with edge-grab
			S-5-PV kit with mid-grab
TUFDEK IBR® Trimflute® FLUTELINE® WIDEDEK® VERSATILE®	**S-5 Protea bracket**		
			S-5-PV kit with edge-grab
			S-5-PV kit with mid-grab

Classicorr® Corrugated
Trout Haven - Western Cape

Technical Considerations

BULLNOSING AND CRANKING
A GUIDE TO SUCCESSFUL CUSTOMISATION

ADDITIONAL SERVICES
WHERE EXCELLENCE SURPASSES AVERAGE

STORAGE, HANDLING AND TRANSPORTATION
IN AID OF OPTIMAL PRODUCT PERFORMANCE

MATERIAL AND INSTALLATION
KEY CONSIDERATIONS FOR SUCCESS

METALS
FOR INDUSTRIAL AND ARCHITECTURAL APPLICATIONS

BULLNOSING AND CRANKING

CRANKING OF PROFILED SHEETING

Cranking of a profiled sheet incorporates lateral rib castellations pressed in at uniform distances which vary according to the radius requirements.

Cranked sheets can be supplied in standard radii as follows:

Profile	Cranking minimum inside radii		Naturally sprung minimum radii	
	Cranking (mm)	Reverse cranking (mm)	Convex (m)*	Concave (m)
Saflok 700®	450	N/A	36	60
Saflok 410®	450	N/A	36	60
Newlok™	N/A	N/A	N/A	N/A
Classicorr®	400	400	23	23
Tufdek® IBR	400	400	28	60
Widedek®	400	400	26	55
Fluteline®	400	400	36	60
Trimflute®	N/A	N/A	26	55

**Please note that oil canning is to be expected.*

When ordering cranked sheets, details should be given using our standard information sheet. Please contact the Technical Department at your nearest branch.

Note 1: Negative (reverse) cranking on Saflok® cannot be performed due to the nature of the profile.

EXPANSION

It should be noted that Aluminium has an expansion co-efficient which is twice that of conventional steel substrates. If the sheet is to be bullnosed on one end, then expansion must be allowed for in the opposite direction.

With the use of Saflok 700® this problem is reduced due to the fact that the profile will slide on the clip.

Note 2: Profiles can be cranked in 275 and 550 MPa material.

STANDARD CRANK

Standard cranking is normally with the narrow flute uppermost and the bend away from the angular inclination.

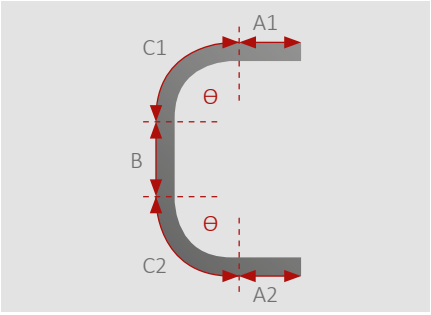
REVERSE CRANK

Reverse cranking is normally with the narrow flute downward and the bend into the narrow flute. Applies to pierced fix profiles only.

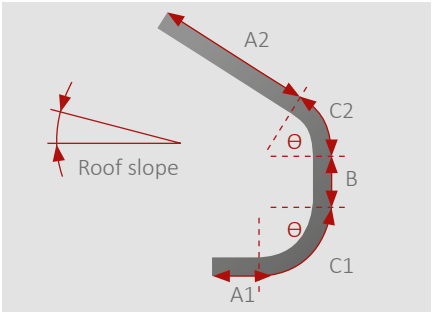
DIFFERENT TYPES OF BULLNOSING AND CRANKING

These drawings show the various types of bullnosing and cranking available on Safintra sheeting. Before production may commence, we will require a detailed drawing giving all the required data, and duly authorised by the customer.

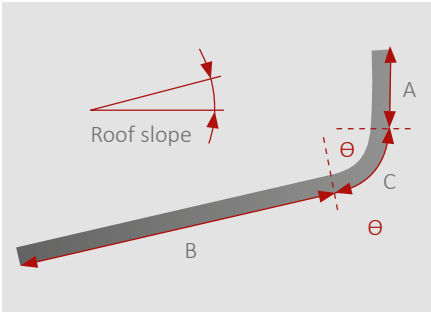
Double crank



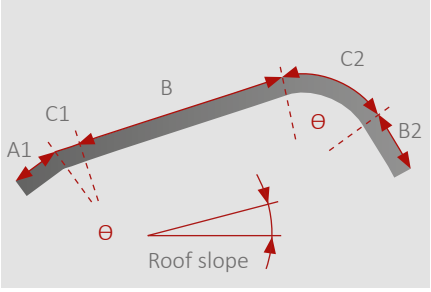
Monitor crank



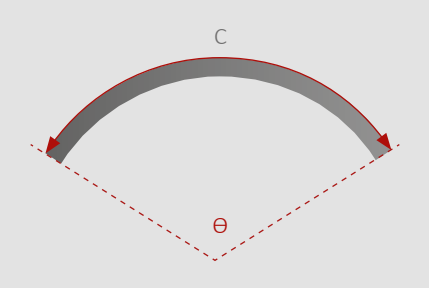
Reverse bullnose roof slope down



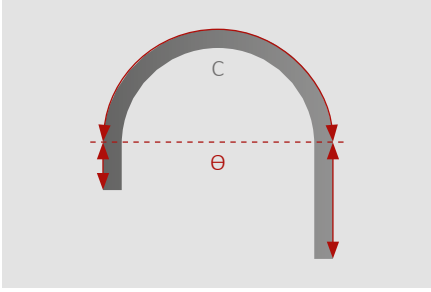
Bullnose off-centre crank



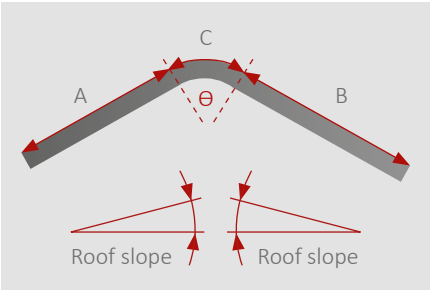
Radius curved sheet



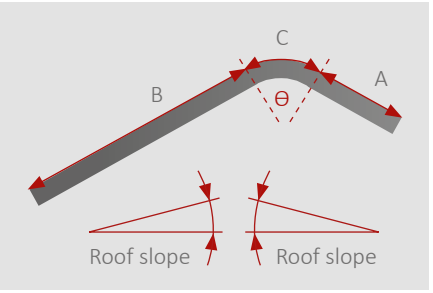
Half circle



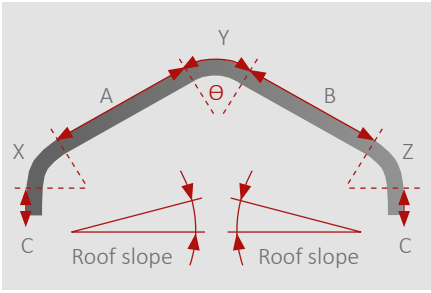
Centre crank



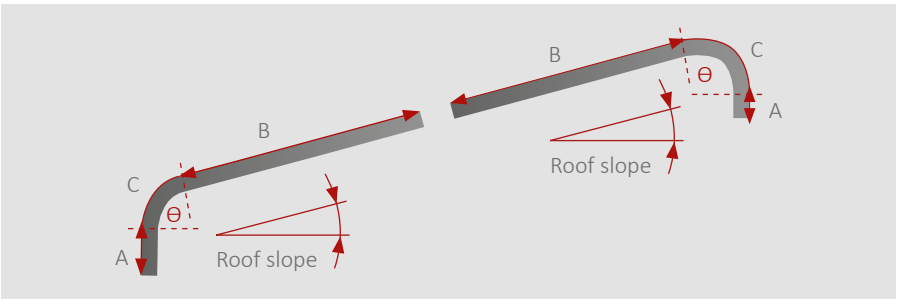
Off-centre crank



Triple crank



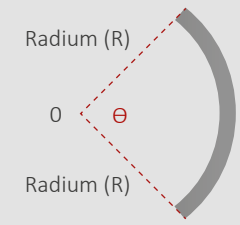
Roof slope up



Note 4: During installation, clean the roof daily by removing all swarf, pop rivets and unused fasteners or any other debris.

Note 3:
θ = Arc angle
0 = Centre of the circle
R = Equal to radius (½ diameter)

$$\text{Arc length} = \frac{\theta}{360°} \cdot 2\prod \cdot \text{Radius}$$



ADDITIONAL SERVICES

TECHNICAL AND ESTIMATING SUPPORT SERVICES

Safintra offers technical support from all its branches.

Our Technical Division's areas of focus include research and development, project guidance, troubleshooting and training in the professional sector.

Safintra is a SAIA, ECSA and ASAQS accredited CPD presenter and prides itself on the continuous development of training material.

An estimating service is available to support with material quantity requirements.

Note 1: Services mentioned above can vary regionally, as equipment and skills vary.

ON-SITE ROLLING SERVICES

Safintra offers on-site rolling of Saflok 700®, Saflok 410® and Newlok™.

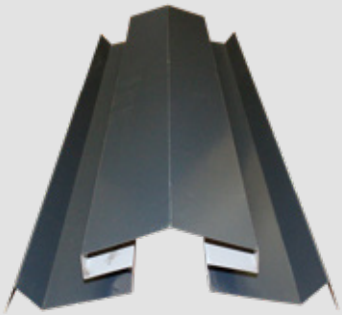
Saflok 700® mobile mill.

Saflok 410® mobile mill.

Newlok™ mobile mill.

CUSTOMISED FLASHINGS

With industry-leading technology, Safintra can cater for individual site requirements.



Folding machine for flashings.

STORAGE, HANDLING AND TRANSPORTATION

WET STORAGE STAIN

Steel sheets are normally treated with a special chromate solution, under strictly controlled conditions (i.e. the sheet is passivated) before leaving the coating mill. Although this process ensures long and satisfactory protection, wet storage stain can still occur. One of the main conditions which may give rise to this problem is sheets being exposed to water while stacked, which restricts air circulation between sheets.

It is therefore important that sheets remain dry and that they do not come into contact with each other at any point if exposed to water. If sheets cannot be stored in a dry storage space, they should be stood on end, elevated and spaced out at the bottom.

A drop in temperature after a warm, humid day may also lead to condensation of moisture throughout the stack. As sheets are often placed on the ground or very close to it, where the temperature is usually at its lowest during the night, the risk of condensation is increased.

The stain that is created does not compromise the integrity of the sheet, but does have a negative impact on the aesthetic value.

STORAGE AND HANDLING GUIDELINES

Keep the product dry and out of direct contact with the ground. If stacked or bundled product becomes wet, separate it, wipe it with a clean, soft cloth to dry thoroughly.

Handle materials carefully to avoid damage, don't drag materials over rough surfaces or over each other, don't drag tools over material and protect from swarf.

Note 1: When storing coils on site, keep them dry and out of direct contact with gravel. Ensure that the coils are well ventilated. For further guidelines, please consult the Safintra Technical Department.

TRANSPORTATION GUIDELINES

Safintra profiles can be supplied in any length, limited only by handling and transport ordinance regulations. The normal length that can be transported by road is 13.2 metres. Saflok 700®, Saflok 410® and Newlok™ can be rolled on-site to any length required.

MATERIAL AND INSTALLATION

MATERIAL COMPATIBILITY

Lead, Copper, Carbon and bare steel are not compatible with Aluminium-Zinc coated steel or Aluminium material. Don't allow any contact with those materials, nor discharge of rainwater from them onto the material.

Supporting structural members should be coated to avoid problems with underside condensation. If there are doubts about the compatibility of other products being used, consult the technical staff at your nearest Safintra branch.

COMPATIBILITY OF METAL COATINGS

Acceptability of direct contact between metals or alloys

Cladding material	Contact surface						
	Zinc-coated steel and Zinc	Aluminium/Zinc alloy-coated steel	Aluminium and Aluminium alloys	Stainless steel	Copper and Copper alloys	Lead	Unseasoned or wet timber
Zinc-coated steel and Zinc	Yes	Yes	Yes	No	No	No	No
Aluminium/Zinc alloy-coated steel	Yes	Yes	Yes	No	No	No	No
Aluminium and Aluminium alloys	Yes	Yes	Yes	No	No	No	No
Stainless steel	No	No	No	Yes	No	No	No

Note: Unless adequate separation can be ensured, steel based pre-painted cladding materials or Aluminium or stainless steel should be considered in terms of the base material.

MAINTENANCE

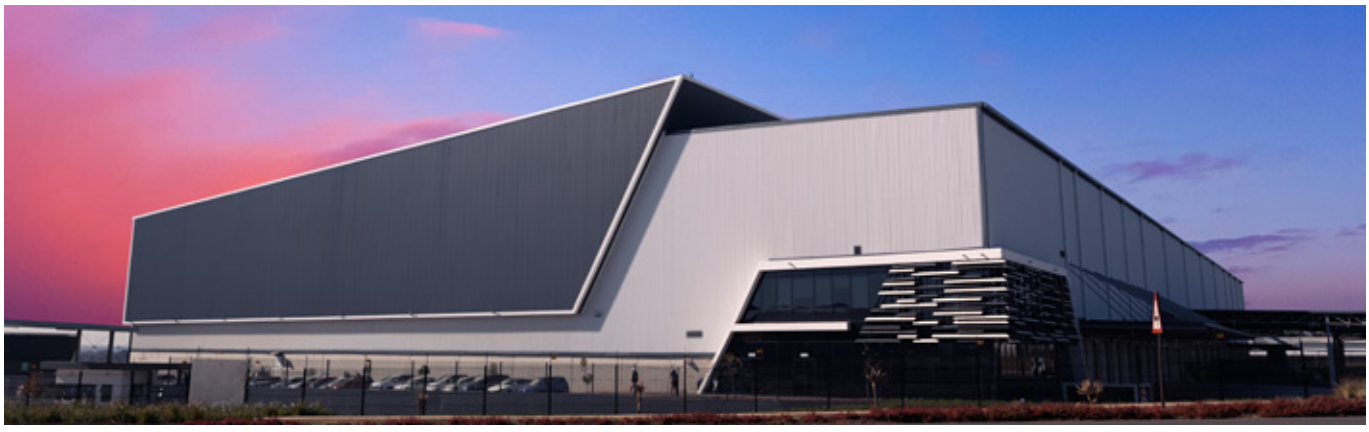
Optimum product life will be achieved if all external surfaces are washed regularly. Areas not cleaned by natural rainfall (such as the underside of sheeting at the eaves of the building) should be washed down every six months. Regular maintenance and inspections, especially after severe storms, are essential.

Care should be taken to ensure that none of the debris arising from the fixing of a steel roof remains on the sheets after completion of work. If nails, swarf, etc. are allowed to remain on roof sheets, unsightly spots will soon appear. Initially these rust spots will merely be stains from rapidly rusting fine particles of steel, if allowed to develop further, a loss of Zinc coating in the stained areas will appear. Sheets are often subject to wet cement splashes that create an area that is subject to alkali attack. Cement splashes should therefore be cleaned off immediately.

IMPORTANT NOTES

- Touch up paint is not recommended.
- Never use abrasive or solvent type cleaners.
- Clean with soft cloths and avoid wire brushes/steel wool to clean roof.
- A fine automotive polish can be used to remove swarf.

Note 1: During installation, clean the roof daily by removing all swarf, pop rivets and unused fasteners or any other debris.



Acceptability of drainage from one surface to a lower metal or alloy surface						
Upper material	**Lower cladding/accessory material**					
	Aluminium and Aluminium alloys	**Copper and copper alloys**	**Stainless steel (300 Series)**	**Zinc-coated steel and Zinc**	**Aluminium/Zinc alloy-coated steel**	**Lead**
Zinc-coated steel and Zinc	Yes	Yes	Yes	Yes	Yes	Yes
Aluminium/Zinc alloy-coated	Yes	Yes	Yes	No	Yes	Yes
Pre-painted metal	Yes	Yes	Yes	No	Yes	Yes
Aluminium and Aluminium alloys	Yes	Yes	Yes	No	Yes	Yes
Stainless steel	Yes	Yes	Yes	No	Yes	Yes
Copper and Copper alloys	No	Yes	Yes	No	No	Yes
Lead	Yes	Yes	Yes	Yes	No	Yes
Acrylic + plastics	Yes	Yes	Yes	No	No	Yes
Glass	Yes	Yes	No	No	No	Yes
Glazed roof tiles + slate	Yes	Yes	Yes	No	No	Yes
Unglazed roof tiles	Yes	Yes	Yes	Yes	Yes	Yes
Fibre cement	Yes	Yes	Yes	Yes	Yes	Yes

Note: Whilst drainage between the materials shown would be acceptable, direct material contact should be avoided (refer to the table on page 70).

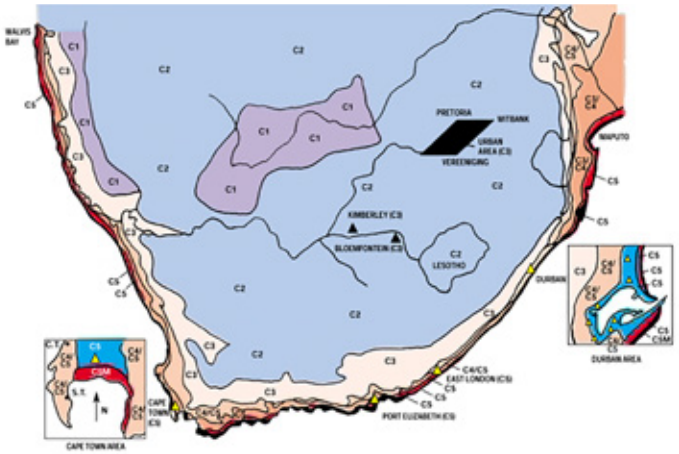
CORROSION

The coastline of South Africa is a particularly harsh environment which carries chlorides. In urban areas, corrosion is accelerated by the presence of sulphur emissions from industry and traffic. The choice of the correct steel substrate is therefore important to avoid high replacement costs and losses in rentals, etc. Please request additional information from Safintra in this regard.

SEVERE CORROSIVE CONDITIONS

If this product is to be used in marine, severe industrial, or unusually corrosive environments, consult the technical staff at your nearest Safintra branch for guidance.

MATERIAL AND INSTALLATION



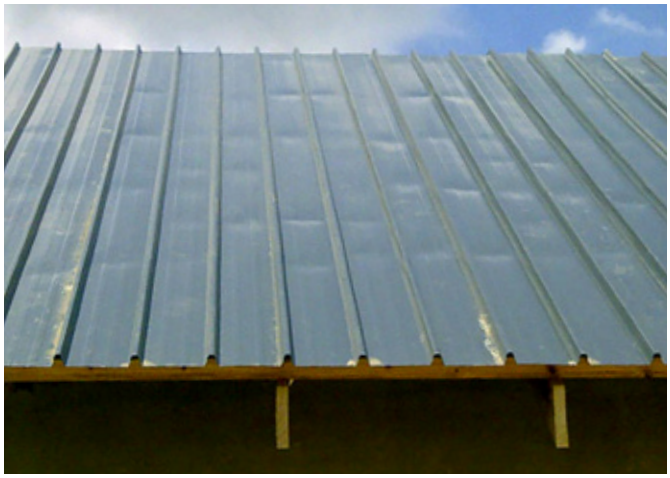
ATMOSPHERIC CORROSION REGIONS

The above map provides a general indication of corrosion rates throughout the subcontinent. Micro-climatic conditions can vary substantially from one local site to another depending on factors such as wind direction, land contours, height above sea level and industrial pollution.

Category	Description	Legend	Severity of corrosion	Corrosion rate uncoated mild steel	Zinc coating loss
C5M	Usually less than 50m from H.W.M.		Severe marine	+300 µm/year	>30 µm/year
C5	Usually 50km to 1km from H.W.M.		Marine	200-300 µm/year	15-30 µm/year
C4/ C5	1km to 40km from sea		Average marine	20-200 µm/year	2-15 µm/year
C3	40km to 100km from sea		Mildly marine	10-20 µm/year	1-2 µm/year
C2	Inland		Rural	Less than 10µm/year	<0.8 µm/year
C1	Inland		Desert	Less than 5µm/year	<0.5 µm/year
C3	Urban inland		Industrial	10-30 µm/year	1-3 µm/year
C5	Urban inland		Marine industrial	50-150 µm/year	5-15 µm/year

**H.W.M - High Water Mark*
Source: www.kare.co.za

Edge wave



Oil canning

CUTTING

For cutting thin metal on site, we recommend a circular saw with a metal cutting blade as it produces fewer damaging hot metal particles and leaves less resultant burr than a carborundum disc.

Cut materials over the ground and not over other materials. Sweep all metallic swarf and other debris from roof areas and gutters at the end of each day and at the completion of the installation. Failure to do so can lead to surface staining when the metal particles rust.

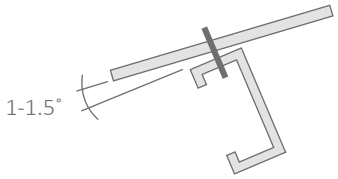
OIL CANNING AND EDGE WAVE

Various factors may contribute to a phenomenon described as oil canning. These include material, manufacturing and structural alignment criteria. The effect is aesthetic in nature and bears no influence on the structural integrity of the roofing system. Edge wave will manifest on the sides of roof sheeting where the overlap is likely to conceal the issue.

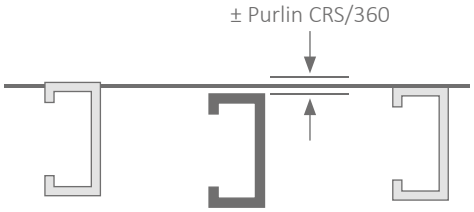
REQUIRED STRUCTURAL TOLERANCES

To ensure system functionality and performance, the following structural support criteria should be adhered to:

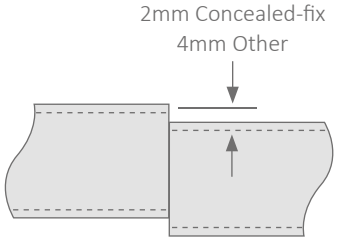
- Maximum purlin twist 1.5°.



- Purlin plane alignment a maximum of purlin centres/360. In a case of varying purlin centres the deviation is to be restricted to the lessor of this calculation.



- Adjacent purlin alignment at the rafter connection point should be ≤2mm.



- Clip/cleat alignment within 1° referenced to the sheeting longitudinal axis. Lateral deflection of purlins (sagging) between rafter should be limited to a maximum of 20mm.

WIND TERRAIN CATEGORIES

Areas where structures are exposed include canopies, walkways, exposed lean-to roofs, loading bays, gate entrances or aesthetic structures such as wings or buttresses. Overhangs are prone to a buildup of wind pressure below the sheet surface and are considered a weaker point in the roof structure.

To ensure the correct specification of purlin spacing and roof sheet gauge, it is important to consult an engineer at design stage. Steel products can be affected by some environmental conditions such as industrial, agricultural, marine, intensive animal farming, swimming pools or other aggressive conditions. If any of our products are to be used in these conditions, or unusually corrosive environments, seek advice from your local Safintra branch.

The terrain category would determine the fixing method and purlin spacing. All materials and fixings have been designed to accommodate terrain category C.

Terrain Category A
Exposed smooth terrain with virtually no obstructions and in which the height of any obstructions is less than 1.5m. The category includes open sea shores, lake shores and flat, treeless plains with little vegetation other than short grass.

Terrain Category B
Open terrain with widely spaced obstructions (more than 100m apart) having heights and plan dimensions generally between 1.5m and 10m. This category includes large airfields, open parklands or farmlands and undeveloped outskirts of towns and suburbs, with few trees, hillside or other exposed areas.

Terrain Category C
Terrain having numerous closely spaced obstructions generally the size of domestic houses. This category includes wooded areas and suburbs, towns and industrial areas, fully or substantially developed.

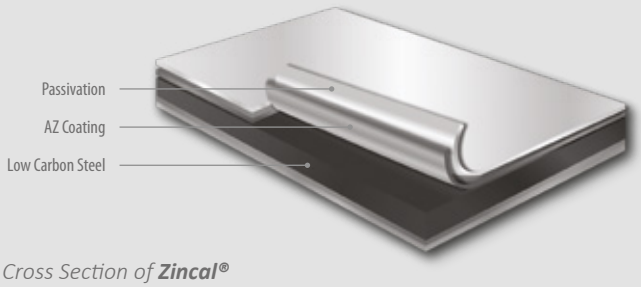
Terrain Category D
Terrain with numerous large, tall, closely-spaced obstructions. This category includes large city centres.

Note 2: Overhangs of 600mm and greater are classified as exposed.

A WORLD CLASS ROOF DESERVES WORLD CLASS MATERIAL

ZincAL®

Superior Corrosion Performance

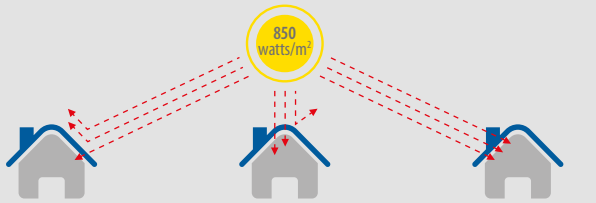


*Cross Section of **Zincal®***

***Superior Thermal Performance:** Less heat transmitted into building interior giving cooler interiors in hot climates.*

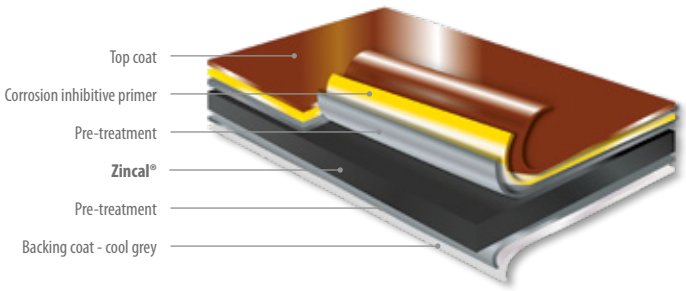
Zincal® is manufactured using a patented Aluminium-Zinc coating alloy applied to Carbon steel, and is recognised worldwide for its outstanding corrosion resistance.

When used in the correct application, **Zincal®** offers you: a considerable increase in service life, distinctive aesthetic appeal and superior thermal performance. The coating alloy consists of 55% Aluminium, 43.5% Zinc and 1.5% Silicon, which increases the service life of the steel core by up to 4 times that of traditional Zinc galvanized steel with the same coating thickness in the same physical environment.



COLORPLUS®

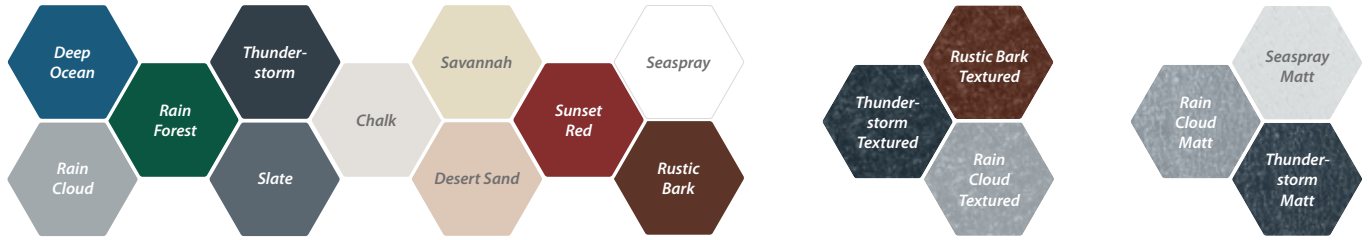
Long Lasting Beauty



*Cross Section of **Colorplus®***

Colorplus® is a factory pre-painted product, with colour applied over a Zincal® substrate, offering all the advantages of Zincal® with the option of colour for added aesthetic appeal.

The Colorplus® paint system has been carefully selected to endure the harsh African climate and resist dirt or contaminant retention. This ensures that the surface stays clean and the colour is fresh looking for as long as possible. For buildings in areas of severe marine or industrial pollution (e.g. 100m - 1km from breaking surf), please request Colorplus® Ultima, which has an AZ 200 metallic coating (200 grams per sqm of Aluminium-Zinc coating for enhanced corrosion protection) plus additional colour coating layers, designed specifically for these conditions.



COLORPLUS®

COLORPLUS® Ultima

Colorplus® Ultima is available in Colorplus® colours. Bespoke paint colours and paint systems such as PVDF by special request only.

COLORPLUS® Textured

COLORPLUS® Matt

A member of SAFAL™ GROUP

**Disclaimer: Colours shown are those available from Safal Steel. Please consult your closest Safintra branch to confirm regional availability. Colours as shown are indicative only and can vary slightly from the actual colour coated steel.*

ZincAL®
Superior Corrosion Performance

TECHNICAL DATA AZ TECHNOLOGY VS. GI TECHNOLOGY

Steel is an important part of economic activity in most countries. Its use extends to almost all sectors of the economy, such as engineering, construction, railways, shipbuilding, automotive and consumer goods. Steel does however have an inherent weakness in that when used unprotected and exposed to the environment, it corrodes very easily. To extend the service life of steel, it is generally coated with a corrosion inhibiting coating. The 2 most commonly used coatings to protect steel are:

Aluminium-Zinc coating: The mild steel substrate is continuously hot dipped in a formulation of Aluminium (55%), Zinc (43.5%) and Silicon (1.5%). The combination of Aluminium and Zinc increases the sacrificial properties therefore extending the service lifespan of a steel roof by up to 4 times that of galvanized steel. The Aluminium components of the coating provide a tough physical barrier between the extreme atmospheric conditions and the inner core of steel. The Zinc in the coating protects the steel where exposed. Aluminium-Zinc coating is a patented coating technology. Legitimate producers are registered with the license authority BIEC.

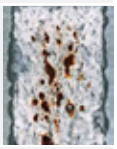
Galvanized coating: The mild steel substrate is continuously hot dipped in an almost pure Zinc formulation. Zinc has inherent sacrificial properties and corrodes first before the mild steel core. Galvanizing offers almost twice the service life of the steel substrate. A unique shiny spangle appearance gives galvanized steel its signature in the market.

COATING COMPARISON

AZ coating weight g/m²	Nominal AZ coating thickness in microns	GI coating weight g/m²	Nominal GI coating thickness in microns
AZ 100	27	Z200	27
AZ 150	40.5	Z275	40.5
AZ 200	54	Z350	54

˚The higher Aluminium content in the coating alloy results in a lower density. ˚AZ offers an increase in service life up to 4x longer. ˚Please note coating thickness under AZ 100 or Z200 is not recommended for coastal or heavy industry applications. ˚Micron count is approximate and is calculated as the sum of both sides.

PRODUCT COMPARISON

AZ coating	GI coating
Continuous hot dipped process	Continuous hot dipped process
55% Aluminium	0.2% Aluminium
43.5% Zinc	99.7% Zinc
1.5% Silicon	-
Balance % trace elements	Balance % trace elements
Superior corrosion resistance: Aluminium offers barrier protection Zinc offers sacrificial protection *AZ 150 after 240 hours of salt spray testing - no signs of deterioration 	**Medium corrosion resistance:** Zinc offers sacrificial protection *Z275 after 240 hours of salt spray testing- signs of red dust appear 
Excellent heat reflectivity: *Roofing applications:* creates a cooler internal temperature in summer and a warmer temperature in winter due to reflection *Appliance application:* AZ increases the appliance's efficiency therefore lower energy consumption	**Moderate heat reflectivity:** Due to low reflection values the heat loss is greater creating a hotter internal temperature in summer and a colder temperature in winter
Heat resistance: AZ can reach temperatures up to 675˚C Product can be used up to 538˚C before discolouration	**Heat resistance:** GI can reach temperatures up to 480˚C Product can be used up to 232˚C before discolouration
Superior cut edge protection	Superior cut edge protection
Superior formability	Superior formability
Superior weld ability: generates less Zinc fumes	Medium weld ability
Small, uniform unique spangle 	Medium/large irregular spangle 
Silver, white in colour	Silver, grey in colour
Matt finish	Shiny, bright finish

Safal Steel (Pty) Ltd is a licensed producer of AZ Coated Products - manufactured under licence to BIEC International Inc.

www.safalsteel.com

SAFAL STEEL

SAFINTRA

SAFINTRA SOUTH AFRICA:

www.safintra.co.za / www.safintra.com **info.safintrasa@safalgroup.com**

JOHANNESBURG
4 Fobian Street, Hughes Ext. 31, Boksburg, Johannesburg
Tel: +27 11 323 6300

CAPE TOWN
Goud Crescent, Mida Park, Brackenfell, Cape Town
Tel: +27 21 981 3130

DURBAN
30 Lanner Road, New Germany, Durban
Tel: +27 31 713 3600

NELSPRUIT
10 Water Lily Street, Riverside, Industrial Ext. 12, Nelspruit
Tel: +27 13 750 2060

NAMIBIA (Windhoek)
Industria Street, Lafrenz Industrial Area, Windhoek, Namibia
Tel: +2646 130 0558

NAMIBIA (Ondangwa)
Unit 16, Olunkono Centre, Ondangwa, Erf 1744, Namibia
Tel: +2646 524 6238

MOZAMBIQUE
Rua do Jardim Talhao no. 1318 Q20 Machava, Matola, Maputo, Mozambique
Tel: +2588 4309 7365

ZAMBIA
Plot No. 7239, Mukatasha Road,
Light Industrial Area, Lusaka, Zambia
Tel: +260 975 095 895

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