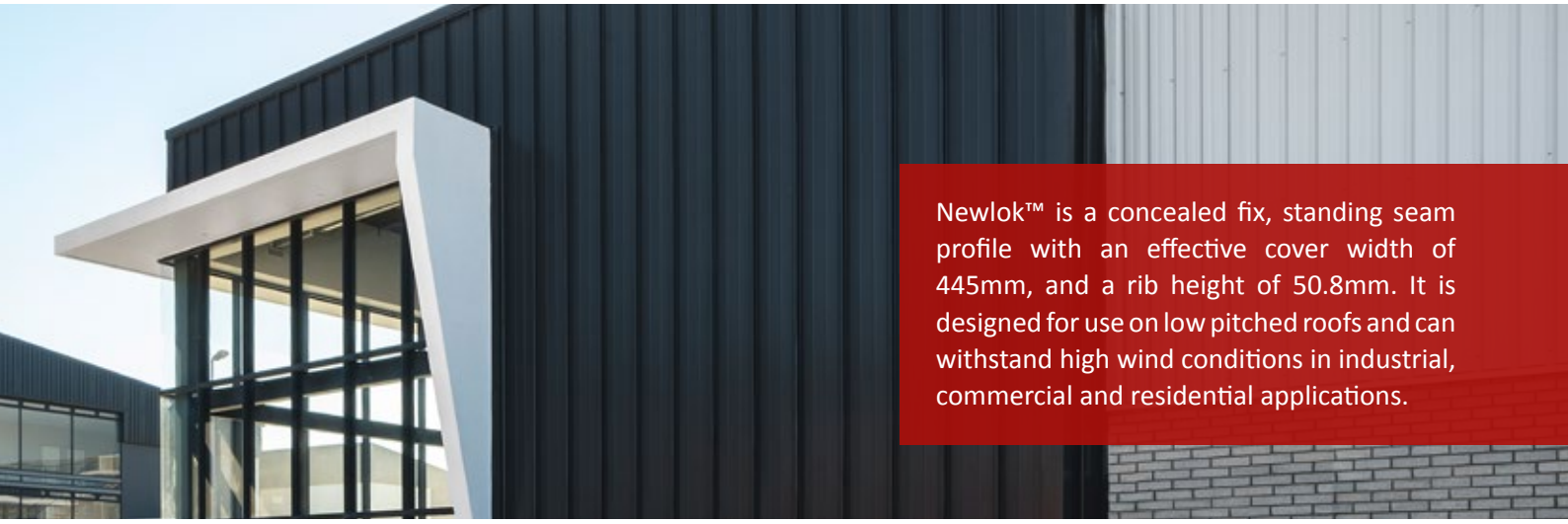
NEWLOK™
standing seam roofing



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.

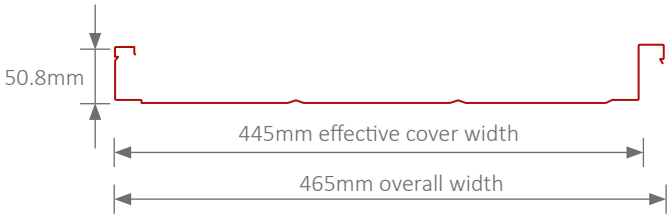
Newlok's™ unique interlocking clipping system incorporates a concealed cleat to positively hold down the male-female joint at every rib. The profile can be roll-formed by a mobile mill on the building site, in continuous lengths. The two-part cleat allows for natural thermal expansion and contraction 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.

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 0.58

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

Note 1: Newlok™ standing seam profile cannot be cranked.

Note 2: 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 (unstiffened)	150	150	150	150	100
Cantilever (stiffened)	300	300	300	300	200
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

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			
	1:50 (1°)	1:30 (2°)	1:20 (3°)	1:12 (5°)
150	208	294	360	465
200	156	220	270	349
250	125	176	216	279
300	104	147	180	233
350	89	126	154	199
400	78	110	135	174
500	62	88	108	139

Maximum roof sheet length (m)

Note 3: 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. Cladding is to be fixed in the pan of the sheet with #12x25mm Fixtite™ fasteners - Class 4 only.

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

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° on steel and 3° on timber.

Clip-in marks and oil canning might be visible on high pitched roofs or vertical applications. This visual effect might not be aesthetically pleasing in a residential application (refer to page 73).

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 metal-fix wafer head	#14 x 22mm metal-fix stitching screw, hex head, tapered
Timber	#10 x 45mm timber-fix wafer head	

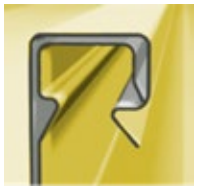
NEWLOK™ FEATURES AND BENEFITS

- Unique profile offers either an unseamed or seamed interlocking mechanism for optimum wind stability.
- Exceptional hold down strength, in excess of 3kPa hold down on negative wind uplift on the seamed profile.
- 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

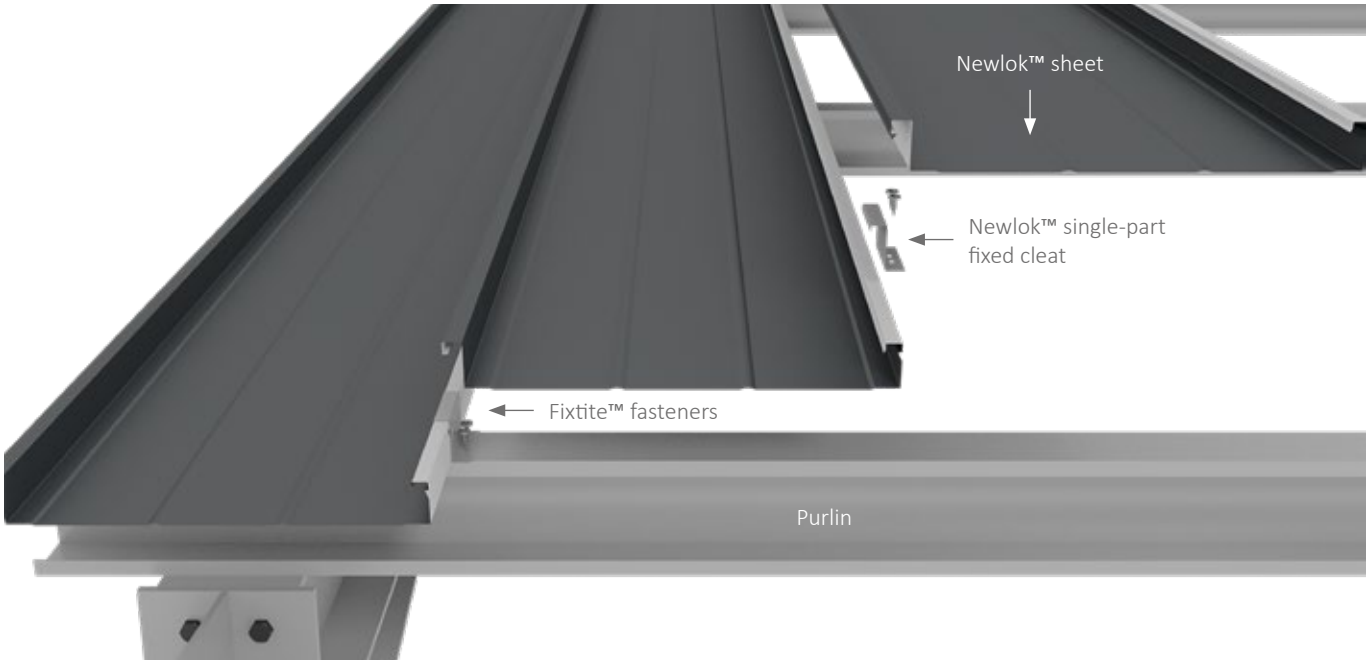
The Newlok™ fixed cleat is used to secure the Newlok™ profile to the purlins. These cleats are used on residential roofs where the sheets are not excessively long and thermal expansion is minimal.

Rolling the panels together



Unseamed system

Seamed system

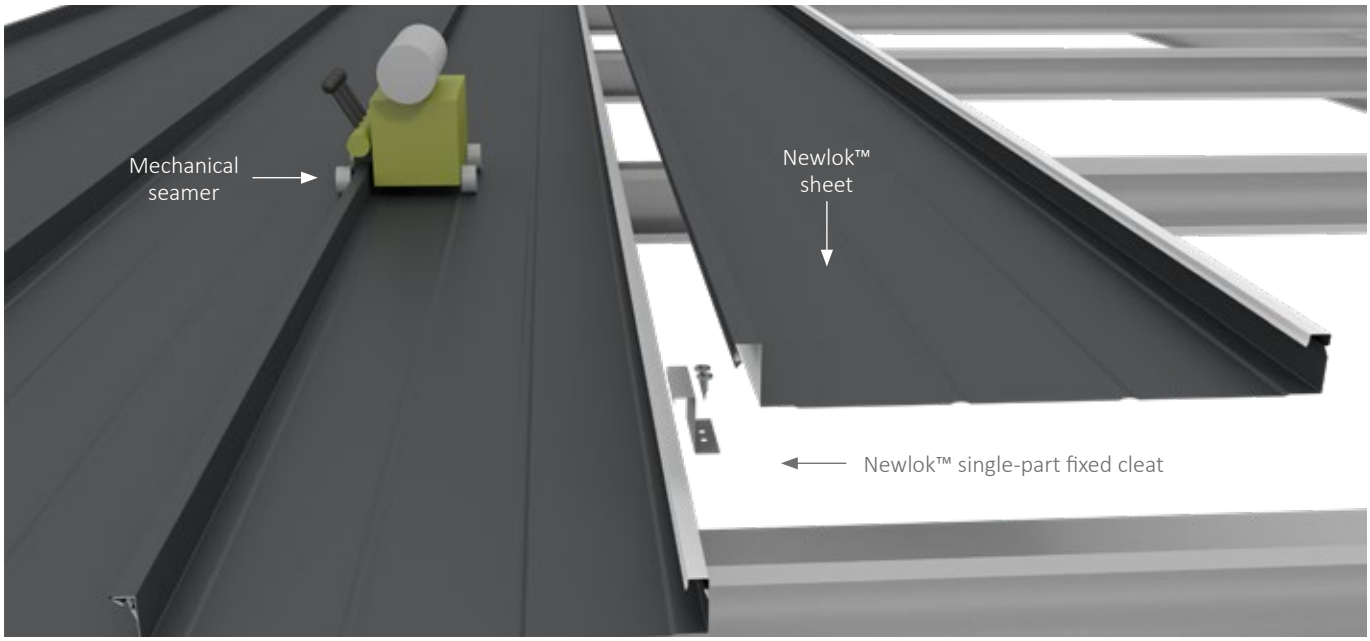


NEWLOK™ INSTALLATION

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 4: 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.

HIGH WIND LOAD SEAMING

90° hand crimper

Mechanical seamer

The mechanical seamer and hand crimper come as a complete package. The hand crimper is used to initiate the seaming process, which is then followed by the mechanical seamer. The mechanical seamer has a reverse function, for ease of use up and down the slope.

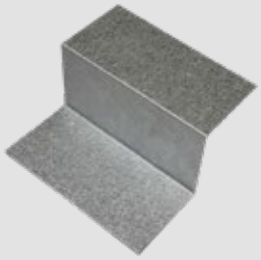
Care should be taken when using the mechanical seamer that all 3 handles are engaged to ensure complete forming of the seam. Care must also be taken when using the hand crimper, as over engagement of the seam can create seam markings on the rib of the profile.

Specialised Flashing Installation

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

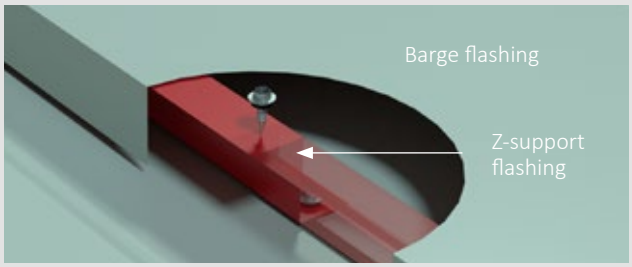
Sheet length (m)	Transverse flashings (ridge, apex, headwall)	Longitudinal flashings (barge, sidewall)
<30	Z-support flashing - Between ribs	Z-support flashing - Every 500mm
>30	F10 sliding bracket - Every rib	Z-sliding bracket - Every 500mm

Z-SUPPORT FLASHING

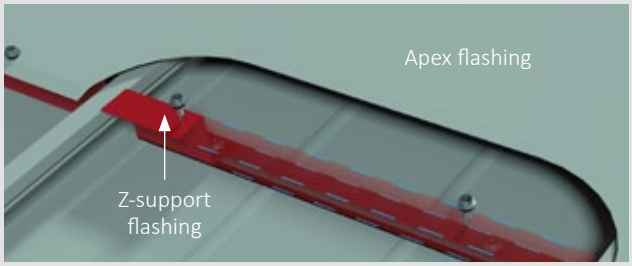


The Z-support flashing is used to create a false rib in the pan of the Newlok™ profile. This flashing is fastened through the sheet into the purlins and sealed with a butyl or neutral cure Silicone sealant. This flashing also creates a fixing platform for flashings. Other flashings are fastened to the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

Note 5: This flashing is positively fixed. Care should be taken when detailing industrial length sheeting and flashings due to thermal expansion.

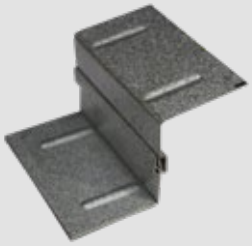


Newlok™ Z-support flashings for longitudinal flashings.

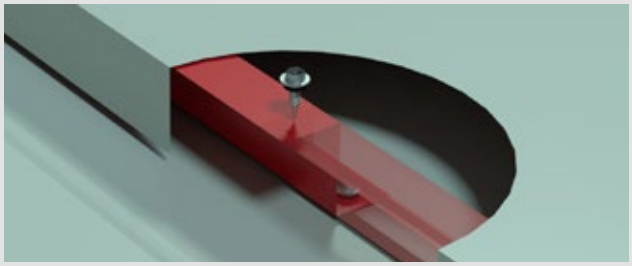


Newlok™ Z-support flashing for transverse flashings.

Z-SLIDING BRACKET



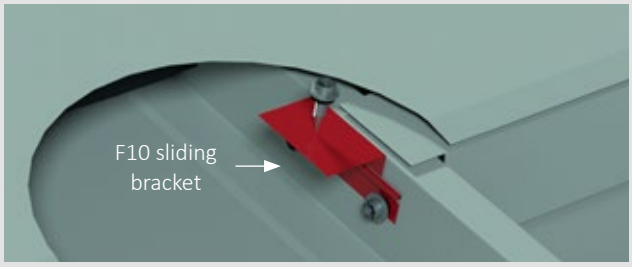
The Z-sliding bracket is designed to slide with the thermal expansion and contraction of the roof sheeting. It is recommended for sheet lengths exceeding 30 metres.



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.

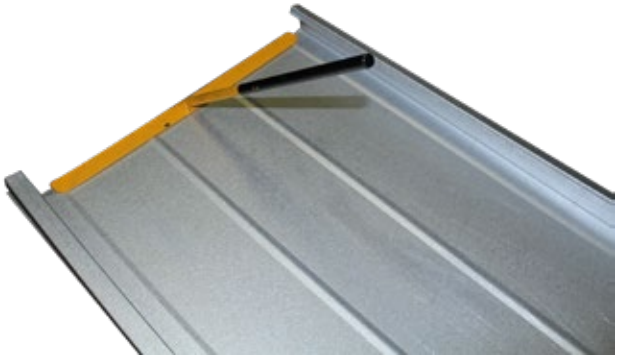


F10 sliding bracket for transverse flashings.

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 ±3mm are permissible.

Note 6: Newlok™ cannot be bullnosed, cranked or naturally sprung.

