

CONCEALED FIX ROOFING INTRODUCTION

Saflok and Newlok (unseamed) are both concealed fix or secret fix profiles as the anchoring system is not visible, which provides unrestrained thermal expansion or contraction.

The difference between concealed fix and standing seam (Newlok) is that the Newlok profile can be seamed either mechanically or by hand, giving it additional wind uplift strength.

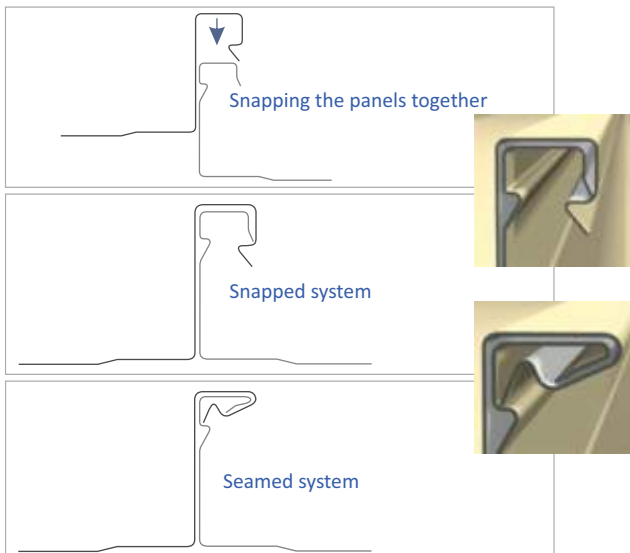
Concealed fix roofing (also referred to as secret fix), is designed for very low pitched roofs. Because clips under the sheet hold it down, the sheet is not punctured with fasteners, and remains completely watertight even at a very low slope. The securing clips are fixed over the male rib of the previous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

As a concealed fix sheet can also expand and contract with the clips as the temperature changes, this system is ideal for long spans on industrial and commercial buildings.

CLIPPING SYSTEM

The NEWLOK clip incorporates a two-part component to positively hold down the male-female joint on every rib. It also incorporates a sliding halter to allow for thermal movement.

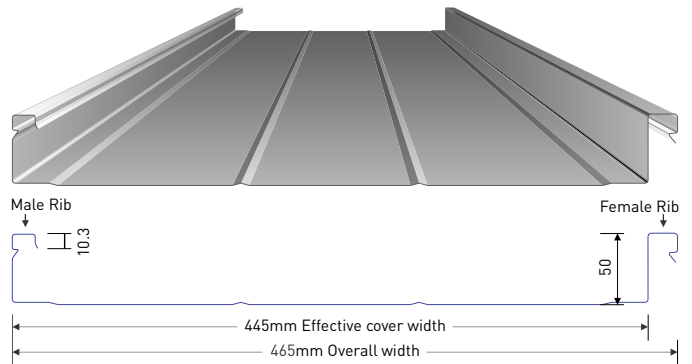
*Seaming is recommended for Industrial and Commercial applications. For residential purposes, a snapped configuration is adequate due to reduced loadings.



NEWLOK PRODUCT DESCRIPTION

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

NEWLOK'S unique interlocking clipping system incorporates a concealed clip to positively hold down the male-female joint at every rib. The profile is usually roll formed on mobile mills on the building site, in lengths of up to 120m. The two-part clip allows for natural thermal expansion and contraction of the sheet, and the 50mm rib height delivers optimal water shedding capabilities at slopes as low as 1.5 degrees.

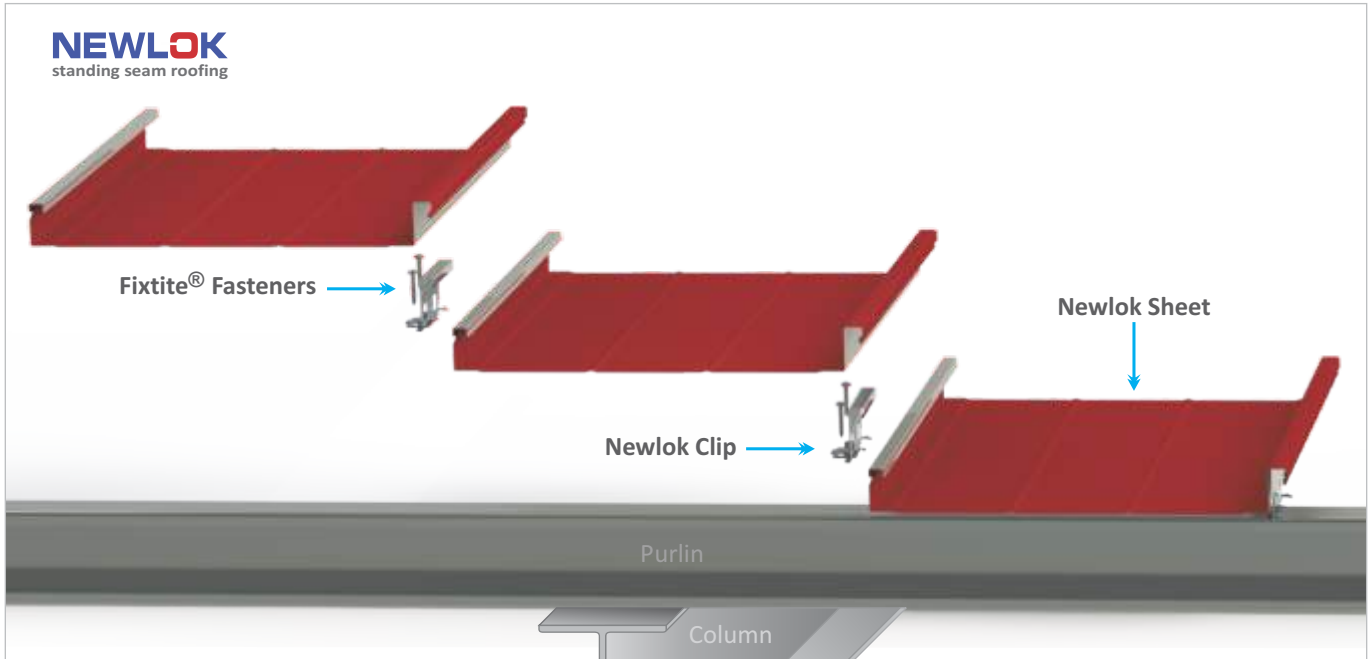


NEWLOK FEATURES AND BENEFITS

- Unique profile offers either a snap-together or a snap-and-seam 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

MATERIAL OPTIONS

Aluminium - Zinc	Gauge (mm)
AZ100/150/200 G550	0.50 0.55
Unpainted or pre-painted	
Aluminium	Gauge (mm)
Aluminium	0.80
Unpainted or pre-painted	



PURLIN SPACINGS

Purlin Spacing is dependant on both downward loading and negative suction loading caused by wind. Your engineer should be consulted to calculate your load (kN/m²) for your particular application.

Span tables are for NEWLOK with light foot traffic only. Span Tables are based on 1.5kN downward pressure, 1.6kPa upward pressure and 0.75kPa for the side cladding, inward or outward.

The span tables are for a maximum of recommended spans based on buildings up to 10m high in medium wind zone, Terrain Category B.

ROOFS:
Cpi=+0.20, Cpe=-0.90, Kl=2.0 for single and end spans, Kl=1.5 for internal Spans.

WALLS:
Cpi=-0.20, Cpe=-0.65, Kl=2.0 for single and end spans, Kl=1.5 for internal Spans. These spacings may vary by serviceability and strength limit stated for particular projects.

	WIND LOADING		POINT LOAD		GAUGE		
	*ASTE 1592-01				0.5mm	0.55mm	0.8mm
MATERIAL	0.55mm Negative wind pressure (Unfactored)	0.55mm Negative wind pressure [‡]	0.55mm Live point load (Unfactored)	0.55mm Live point load [‡]	ALUMINIUM-ZINC	ALUMINIUM-ZINC	ALUMINIUM
ROOFS	kPa	kPa		kN	mm	mm	mm
End Span	3.597	2.767		1.5	1 300	1 600	900
Internal/Double Span	3.284	2.526		1.5	1 500	1 800	1 400
Cantilever (Unstiffened)	-	-		-	150	150	100
Cantilever (Stiffened)	-	-		-	300	300	200
SIDE CLADDING							
Single Span	3.027	2.329		-	1 700	2 000	1 400
End Span	2.916	2.243		-	1 800	2 100	1 600
Internal Span	2.548	1.960		-	2 100	2 500	1 900
Cantilever	-	-		-	300	300	300
Approximate Mass/m ²	-	-		-	5.4kg	6.2kg	2.9kg

NEWLOK clips are calculated at 110g per clip - require approximately 3 clips per m².

*Factored ultimate loading (SANS 10237 - reduction factor of 1.3)

Note:

It is important to reduce purlin spacings by 20% when spring curving a roof.

SAMPLE SPECIFICATION

Safintra NEWLOK, roll-formed in 0.50mm Colorplus® AZ150, and snap-locked or snap locked and seamed roof sheeting, fixed to steel internal purlins at 1500mm, and steel ridge/eaves purlins at 1300mm centres using NEWLOK clips which must be screw fixed to purlins with Fixtite® or Safintra approved wafer head self-tapping screws, all in accordance with manufacturer's recommendations.

The roof sheeting shall be manufactured by Safintra Roofing, 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.

LENGTH

With the aid of a mobile rolling mill, custom lengths can be rolled on-site. To date the longest continuous sheets in South Africa have been in the region of 130m long. Off-site rolled sheets are cut to transportable lengths (approximately 12m).



NEWLOK Mobile Mill



Mechanical Seamer



90° Hand Crimper

AVAILABLE TESTING	DESCRIPTION	RESULT
ASTM E-1592	1 Foot and 5 Foot Wind Test	The max. sustained test pressure was -3.735kPa for 1 foot & -12.942kPa for 5 foot.
ASTM E-1680	Air Leakage Test	Air Infiltration @ 7.665kPa has leakage of 2.631 x 10 ⁻⁶ m ³ /min per m ² & 0.017m ³ /min per m. Air Infiltration @ 30.466kPa has leakage of 5.261 x 10 ⁻⁶ m ³ /min per m ² & 0.026 x 10 ⁻³ m ³ /min per m.
ASTM E-1646	Water Penetration Test	Water penetration @ 30.466kPa has no water leakage.
FM 4471	Foot Traffic Test (Pending)	Results Pending.

NEWLOK ROOFING WITH S-5 CLAMPS

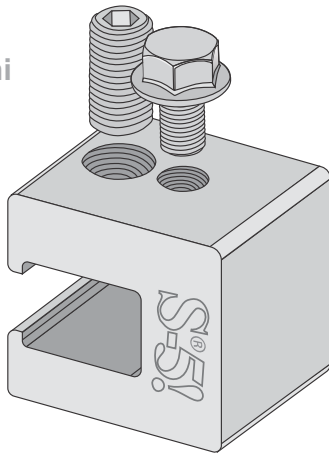
Top quality clamps, such as the S-5 range, may be attached to the ribs without penetrating the roof sheet, thus preserving metal material warranties as well as installation warranties on water-tightness.

The S-5 H90 Mini clamp (pictured) is ideal for the NEWLOK profile, particularly for light weight attachments such as solar arrays, satellite dishes, walkways and mechanical equipment.



S-5 H90 Mini clamp affixed to a trapezoidal standing seam profile.

S-5-H90 Mini



RAIL ATTACHMENT OF SOLAR PV PANELS

In some cases, rails may be required to maximise space, but at a premium cost of substructure. Even in this instance, the rails can be attached using S-5, with zero penetration of the roof sheet.



DIRECT ATTACHMENT

Direct attachment maximises economy, removing the need for expensive railing. The S-5 PV attachment unit has a Mid-Fix option (pictured above) and End-Fix option to accommodate any solar array design.

Disclaimers:

- Test results available on S-5 website
- S-5 H90 mini clamps are suitable for seamed profiles only
- S-5 H-Clamp available ex USA for unseamed NEWLOK

Disclaimer:

- Care has been taken to ensure that the information provided is accurate. SAFINTRA does not assume responsibility for inaccuracies or misinterpretations of this data.
- SAFINTRA is continuously engaged in product development, please ensure that you have the most recent issue of information from SAFINTRA.
- Photographs and illustrations are typical examples of roofing and cladding products and applications.