

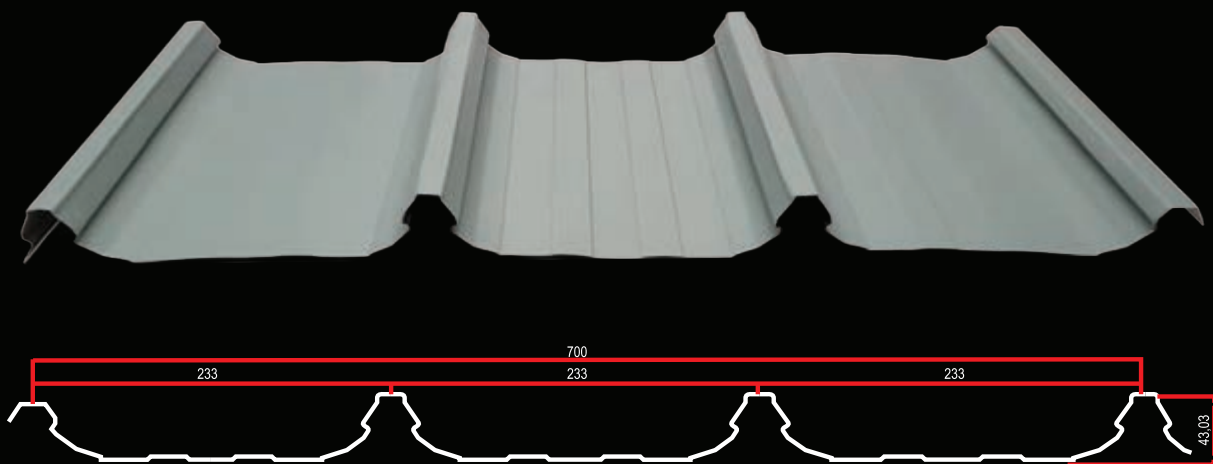


SPRINGLOK

700

THE PREMIUM CONCEALED-FIX ROOFING SYSTEM

TECHNICAL GUIDE



OUR B.C'S OF
EXCELLENCE
OUR DIFFERENCE YOUR GUARANTEE


Youngman
ROOFING AND INSULATION

FOR OVER 35 YEARS, YOUNGMAN ROOFING & INSULATION HAS BEEN A TRUSTED NAME IN THE **CONSTRUCTION INDUSTRY.**

As one of South Africa's leading suppliers, we deliver roofing and insulation solutions that combine quality, service, and reliability.

With a national presence spanning the Western Cape, Southern Cape, Gqeberha, Gauteng, and beyond, our reach ensures that wherever your project is located, Youngman is there to support it.

Our reputation is founded on customer service. From homeowners to large contractors, our team offers expert knowledge and a dedication to efficiency and professionalism in every order.

**Youngman Roofing & Insulation is trusted nationwide
for quality, service and prompt delivery.**



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☎ 021 511 8125

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✉ ottery@youngman.co.za
☎ 021 704 0073

PRETORIA

✉ jhb@youngman.co.za
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WEST COAST

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GEORGE

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EASTERN CAPE

✉ easterncape@youngman.co.za
☎ 041 451 1115/8



Introduction

Springlok 700 is manufactured and distributed by Youngman Roofing and Insulation, who offer specialized advice, free estimates and a friendly and efficient service, ensuring that each client receives the best solution for his application.



The sleek looking Springlok 700 was designed to be unique in appearance and include excellent resistance to wind uplift. This is the newest addition to the very successful and well known Diamondek range of concealed-fix profiles.

The profile is perfectly suited for both industrial and commercial applications and can also be easily specified and installed on residential dwellings, schools, etc. The profile can also be used in cladding applications. (In prior consultation with a Youngman representative, it can be arranged to be roll formed to length on-site where long, full-length sheets are required.)

Springlok 700 is manufactured by cold rolling G550 material using a mobile mill and is available in BlueScope and SAFAL Steel's product offering using appropriate thicknesses and spelters depending on the application and location.

Clipping System

The Springlok 700's unique clip utilizes high-strength, spring-steel flanges on top of the A-frame pillars that in turn, are mounted onto the clip baseplate.

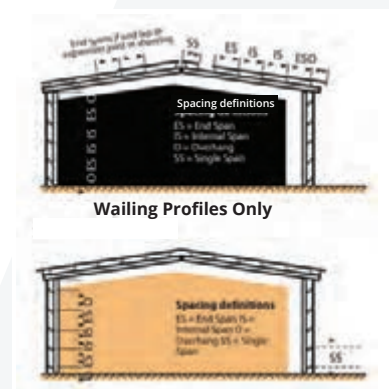
These flanges interlock with the Springlok 700 profile's pronounced S-bends, to ensure an extremely secure and dynamic clipping action while the spring steel allows for a degree of upward lift during wind gust periods. (Under these circumstances the spring steel flanges will flex upwards and outwards to clasp the sheeting even more securely). The clip has been designed and tested to be a dynamic component and is thus spring-loaded (not rigid); this design results in providing supreme wind-uplift performance.

Note: the base-plate has five pre-punched holes; it is critical that all five receive the specified wafer head fastener.

We recommend that a minimum Class 3 fastener be utilized to secure the clips to the purlin / cladding rails.



MAXIMUM RECOMMENDED PURLIN SPACING (metres)			
THICKNESS (TCT - Total Coated Thickness)	0.47mm	0.50mm	0.53mm
GRADE (Yield Strength)	G 550	G 550	G 550
ROOF			
Single Span	1,30	1,40	1,50
Internal Span	1,80	2,00	2,10
End Span	1,60	1,70	1,80
Cantiever (add 0.22m if stiffened)	0,15	0,18	0,18
WALLS/CLADDING			
Single Span	2,00	2,10	2,20
Internal Span	2,40	2,50	2,60
End Span	2,20	2,30	2,40
Ultimate Uplift Loading Capacity (in kPa)*	1,74*	2,41	3,07*



***Independently tested by Dr. Adam Goliger in terms of the stipulations of the newly proposed SANS 10237-2014. Compliant with Eurocode: EN 1993-1-3:2006 (cold formed thin gauge sheeting and members)**

Specifications

SHEETING

The roof sheeting shall be double-interlocking concealed fix Youngman Roofing Springlok 700 Concealed Fix profile roll formed in continuous lengths and cut to length by a pneumatic cut-off process from certified AZ150 or AZ200, BLUESCOPE or SAFAL steel, and Z200 OR Z275 CHROMADEK (Gauteng areas only). The profile shall be roll formed with four ribs at centres not exceeding 233mm and a cover width not exceeding 700mm. When interlocked, the minimum sheet depth shall be 43mm. Each trough shall incorporate two stiffener ribs.

The Springlok 700 sheets shall be fixed to every purlin by means of patented, directional, AZ150 coated clips having spring steel flanges which will securely hold the sheets in position and lock into the centre rib, with the following clip fixed over the top of the male rib to accommodate the next roof sheet.

These clips will be fixed to purlins using 5, Corroshield TT 10 x 45mm wafer head Class 3 screws (for timber purlins) or 5, Corroshield 10 x 22mm wafer head Class 3 self-drilling screws (into roll formed lipped channels). (Recommended with a vapour barrier laid over purlin, below sheet to form a vapour and a chemical barrier between concealed fix roof and steel/ timber purlins). Should any form of insulation be required please contact your Youngman Representative for the best advice.

Side Cladding shall be fixed by means of Corroshield MT 12-14 x 25mm Hex Head Class 4 METAPP fixing for steel girts when sheets are Broad flute Out (BFO). When sheets are narrow flute out (NFO) Sheets to be fixed to every purlin by means of patented, directional, AZ150 coated clips having spring steel flanges which will securely hold the sheets in position and lock into the centre rib, with the following clip fixed over the top of the male rib to accommodate the next roof sheet.

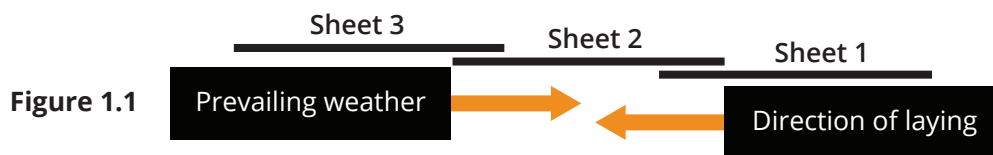
These clips will be fixed to purlins using 5 Corroshield TT 10 x 45mm wafer head Class 3 screws (for timber purlins) or 5 Corroshield MT 10 x 22mm wafer head Class 3 self-drilling screws (into roll formed lipped channels). To prevent Springlok 700 from sliding downward in the fixing clips, you should pierce-fix through each sheet under the flashing or capping, along the top of the sheets, into the top purlin by means of Corroshield MT 12-14 x 25mm Hex Head Class 4 METAPP fixed in the centre of each pan of the Springlok 700 cladding sheet but not less than 25mm from the ends of a sheet, three fixings per sheet.

NB. All fasteners to be either a minimum Class 3 or Class 4 rated according to manufacturer's recommendation.

Installation

Consider which end of the building is best to start from. Ensure the structure is aligned and in plane and level (please refer to Youngman roofing structure tolerances bulletin). It is much easier and safer to turn sheets on the ground than up on the roof. Before lifting sheets on to the roof, check that they are the correct way up and the overlapping side is towards the edge of the roof from which installation will start. Place bundles of sheets over or near firm supports, not at mid span of roof members. Industry practice is for the sheets to start laying from the end of the building that will be in the lee of the prevailing weather wherever possible (Figure 1.1). This is more important when the roofing profile is more vulnerable (shallow profile, simple nesting of the side-laps, longer spans, shallow slopes, etc.) and when the vulnerable roof profile is in exposed situations. Deeper/stiffer roofing profiles and roofing profiles that interlock at the side-lap (e.g. Diamondek 407 or Springlok 700 type roofing) have considerably less reliance on laying direction.

Sheet lay direction when prevailing weather is a consideration.



WALLING

Generally, wall sheets can be installed either vertically or horizontally. Ensure the structure is aligned and in plane and level (please refer to Youngman roofing structure tolerances bulletin). Vertical installation is more common and the principles above for roofing can be applied. Horizontal installation is carried out with the first sheet at the bottom with the overlap facing down. Following sheets are progressively installed up the wall.

POSITION FIRST SHEET

Position the first sheet with particular care before fixing to ensure that it is correctly located in relation to other parts of the building. Check that the sheet is aligned with the end wall (or its barge or fascia), taking into account the type of flashing or capping to be used. Confirm that the sheet aligns correctly at its ends in relation to the gutter and ridge, parapet or transverse wall, and that overhang requirements are not compromised. Fix the sheet as described in the Specifications.

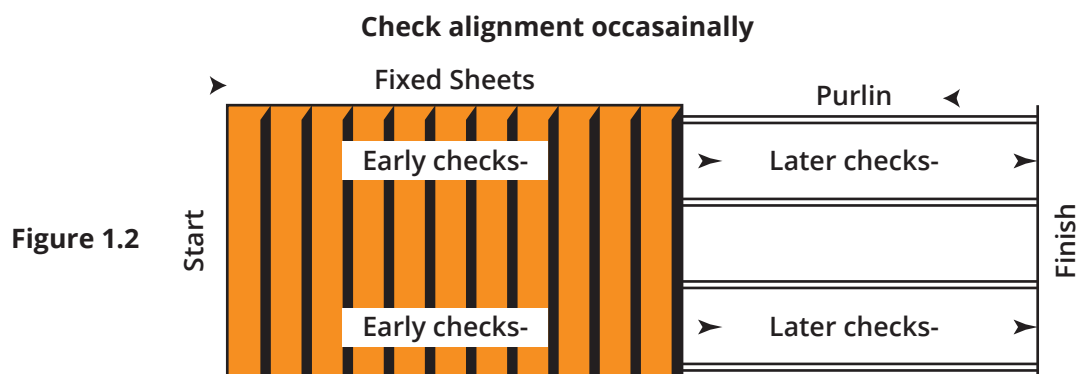
Installation

POSITION OTHER SHEETS

After fixing the first sheet in position, align the following sheets using the long edge of the previous sheet and a measurement from the end of the sheet to the fascia or purlin at the gutter. It is important that the gutter end of all sheets is kept in a straight line. Fix the sheet by either fixing each sheet completely before laying the next, or by fixing the sheet sufficiently to ensure it cannot move, completing the laying of all sheets, and then returning to place all the intermediate fasteners.

CHECK ALIGNMENT OCCASIONALLY

Occasionally check that the sheets are still parallel with the first sheet, by taking two measurements across the width of the fixed cladding (Figure 1.2). At about halfway through the installation, perform a similar check but take the measurements from the finishing line to aim for the final sheet to be parallel with the end of the roof.



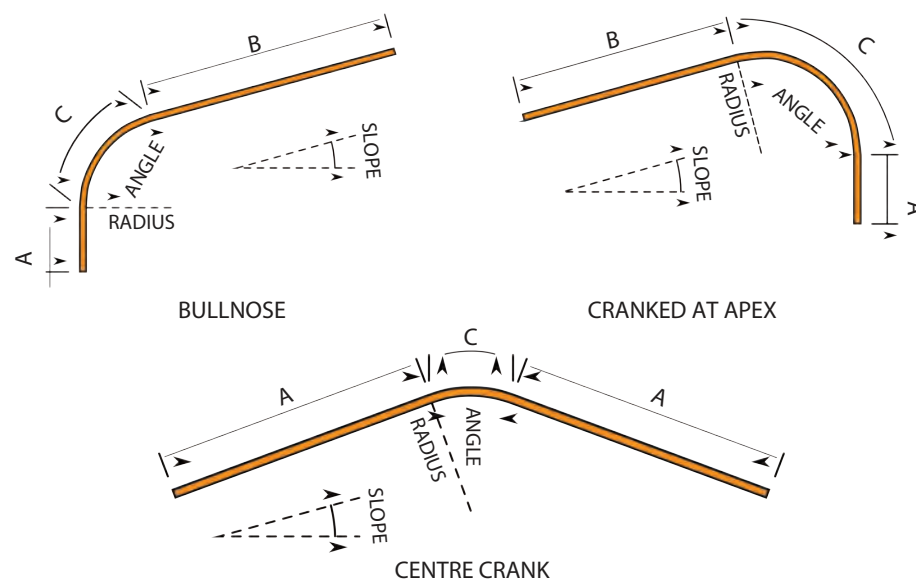
MINIMUM ROOF PITCH

Springlok 700 roofing will perform at very low pitches. This is owing to the profile having the highest crown when compared to competing products. It therefore follows that the profile can carry more water than competing profiles.

Minimum roof pitch of 1.5 degrees is required for an effective installation. See installation methodology for full details.

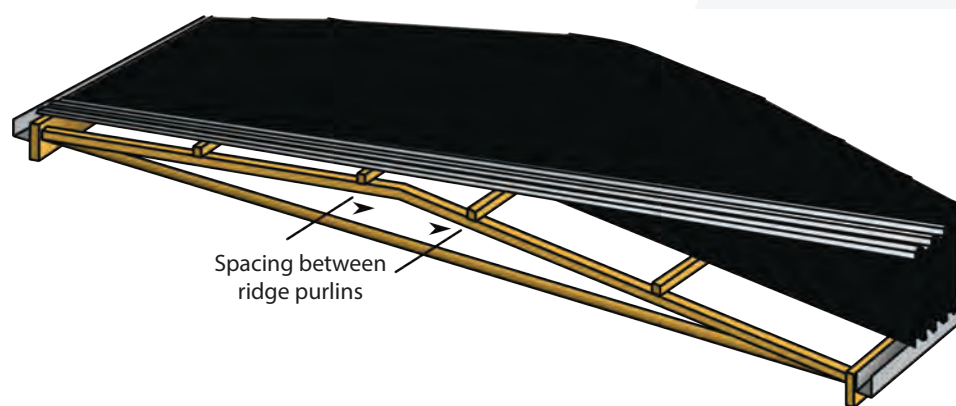
Bullnose, Cranks and Sprung

Bull-nosing is the cranking of profile sheeting to the required radius (minimum radius 550mm) with a minimum runoff of 100mm (A). This technique provides the client with various attractive design options to enhance the appearance of any building. The cranking of profile sheets entails lateral rib indentations pressed in at regular intervals that may vary according to the specific radius. Standard cranking is usually done with the narrow flute uppermost and the bend away from the angular inclination. Cranks can be at the end/ends or at any position along the length of the sheeting. No reverse or negative cranks are possible.



SPRINGING

Springlok 700 can be sprung to a minimum radius of 42m (convex only) with internal span of purlins 1.5m maximum. Please note that when Springing the sheet, there might be a chance of oil canning in the pan of the sheet.



Materials Available

Materials	Tensile	Thickness	Colour One Side	Approx. Weight/m
Bluescope Steel				
Zincalume AZ150	G550	0,47mm	-	3,20kg/m
Zincalume AZ150	G550	0,53mm	-	3,64kg/m
Colorbond AZ150	G550	0,47mm	☑	3,26kg/m
Colorbond AZ150	G550	0,53mm	☑	3,69kg/m
Zincalume AZ200	G550	0,48mm	-	3,25kg/m
Zincalume AZ200	G550	0,54mm	-	3,68kg/m
Colorbond Ultra AZ200	G550	0,48mm	☑	3,31kg/m
Colorbond Ultra AZ200	G550	0,54mm	☑	3,75kg/m
Colorbond Matt AZ150	G550	0,48mm	☑	3,26kg/m
Colorbond Matt AZ150	G550	0,54mm	☑	3,69kg/m
Colorbond Matt Ultra AZ200	G550	0,48mm	☑	3,31kg/m
Colorbond Matt Ultra AZ200	G550	0,54mm	☑	3,75kg/m

Materials	Tensile	Thickness	Colour One Side	Approx. Weight/m
Safal Steel				
ZincAl AZ150	G550	0,47mm	-	3,22kg/m
ZincAl AZ150	G550	0,53mm	-	3,66kg/m
Colorplus AZ150	G550	0,47mm	☑	3,27kg/m
Colorplus AZ150	G550	0,53mm	☑	3,71kg/m
ZincAl AZ150	G550	0,48mm	-	3,17kg/m
ZincAl AZ150	G550	0,54mm	-	3,68kg/m
Colorplus Ultima AZ200	G550	0,48mm	☑	3,22kg/m
Colorplus Ultra AZ200	G550	0,54mm	☑	3,66kg/m
Colorplus Matt AZ150	G550	0,48mm	☑	3,27kg/m
Colorplus Matt AZ150	G550	0,54mm	☑	3,71kg/m
Colorplus Matt Ultra AZ200	G550	0,48mm	☑	3,22kg/m
Colorplus Matt Ultra AZ200	G550	0,54mm	☑	3,66kg/m

Materials	Tensile	Thickness	Colour One Side	Approx. Weight/m
Arcelor Mittal				
Galv Z275	ISQ550	0,47mm	-	3,49kg/m
Galv Z275	ISQ550	0,50mm	-	3,71kg/m
Galv Z275	ISQ550	0,53mm	-	3,93kg/m
Galv Z275	ISQ550	0,58mm	-	4,31kg/m
Galv Z275	ISQ550	0,80mm	-	5,96kg/m
Chromadek Z200	ISQ550	0,47mm	☑	3,49kg/m
Chromadek Z200	ISQ550	0,50mm	☑	3,71kg/m
Chromadek Z200	ISQ550	0,53mm	☑	3,93kg/m
Chromadek Z200	ISQ550	0,58mm	☑	4,31kg/m
Chromadek Z200	ISQ550	0,80mm	☑	5,96kg/m
Chromadek Ultim	ISQ550	0,47mm	☑	3,49kg/m
Chromadek Ultim	ISQ550	0,50mm	☑	3,71kg/m
Chromadek Ultim	ISQ550	0,53mm	☑	3,93kg/m
Chromadek Ultim	ISQ550	0,58mm	☑	4,3kg/m

OUR DIFFERENCE,
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Materials Available

Owing to their vastly superior performance, COLORBOND™ steel, COLORBOND™ Ultra steel, ZINCALUME steel, Colorplus steel, Colorplus Ultima steel, and ZINCAL and CHROMADEK or CHROMADEK Ultim (Gauteng only) are the preferred materials used to manufacture Springlok.

Youngman Roofing is the authorised distributor of COLORBOND™ steel, COLORBOND™ Ultra steel, ZINCALUME® steel Colorplus steel, Colorplus Ultima steel and ZINCAL and CHROMADEK or CHROMADEK Ultim (Gauteng only).

Note: the above colour material also come in a range of Matt colours.

Please contact the Youngman roofing office to confirm Colour and availability.

Drainage Tables

In line with the calculations attached and provided by DG Consulting Engineers the following assumptions were made:

Table 1: Max Roof Sheet Length (m)			
	Roof Slope		
Rainfall Intensity (mm/hr)	1:30(2)	1:20(3)	1:12(5)
150	201	246	318
200	151	185	238
250	121	148	191
300	100	123	159
350	86	105	136
400	75	92	119
500	60	74	95

Compatible Materials

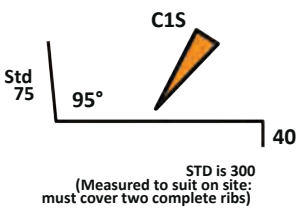
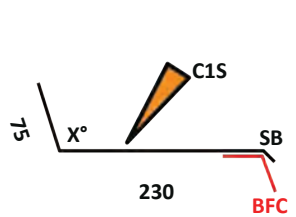
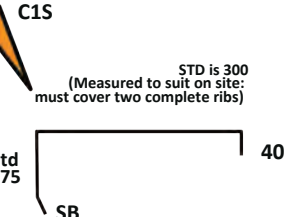
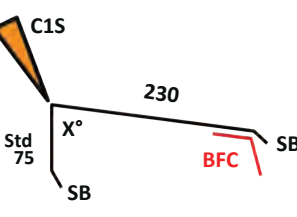
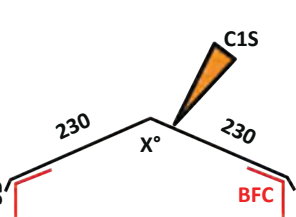
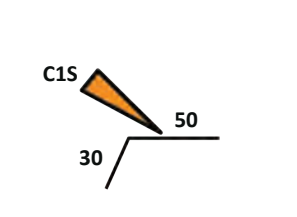
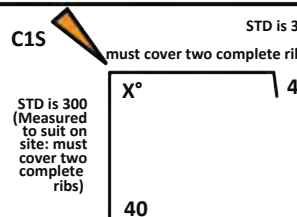
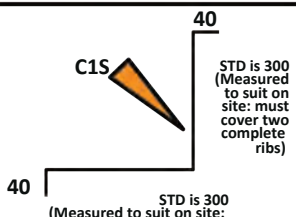
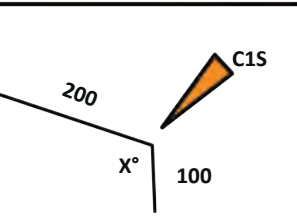
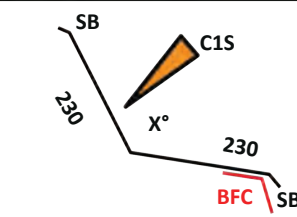
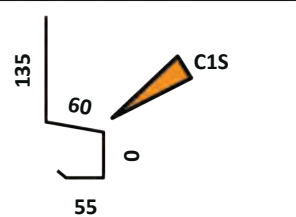
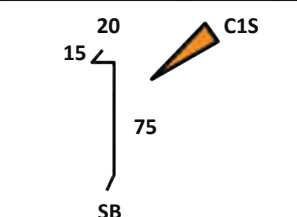
Always ensure that all materials used are compatible with each other. It is not desirable to use non-compatible materials on a structure. Use of non-compatible materials can lead to bimetallic corrosion or staining of materials as well as contamination of the water run-off.

COMPATIBILITY OF DIRECT CONTACT BETWEEN MATERIALS OR ALLOYS									
Accessories or Fasteners or (Upper Surface)									
Roof drainage system components & any Cladding Material	ZINCALUME®	GALVANISED (ZINC COATED STEEL)	ZINC	COLORBOND® COLORBOND® ULTRA COLORBOND® METALLIC	STAINLESS COLORBOND®	STAINLESS STEEL	ALUMINIUM ALLOYS	COPPER & COPPER(1) ALLOYS	LEAD
ZINCALUME®	YES	YES	YES	YES	NO	NO	YES	NO	NO
GALVANISED (ZINC COATED STEEL)	YES	YES	YES	YES	NO	NO	YES	NO	NO
ZINC	YES	YES	YES	YES	NO	NO	YES	NO	NO
COLORBOND® COLORBOND® ULTRA COLORBOND® METALLIC	YES	YES	YES	YES	NO	NO	YES	NO	NO
COLORBOND® STAINLESS	NO	NO	NO	NO	YES	YES	NO	NO	NO
STAINLESS STEEL	NO	NO	NO	NO	YES	YES	NO	NO	NO
ALUMINIUM ALLOYS	YES	YES	YES	YES	NO	NO	YES	NO	NO
COPPER AND COPPER ALLOYS(1)	NO	NO	NO	NO	NO	NO	NO	YES	NO
LEAD	NO	NO	NO	NO	NO	NO	NO	YES	YES

COMPATIBILITY OF DIRECT CONTACT BETWEEN MATERIALS OR ALLOYS										
Upper Cladding or Roof Drainage System Material										
Lower roof drainage system material	ZINCALUME®	GALVANISED (ZINC COATED STEEL)	ZINC	COLORBOND® COLORBOND® ULTRA COLORBOND® METALLIC	STAINLESS COLORBOND®	STAINLESS STEEL	ALUMINIUM ALLOYS	COPPER & COPPER(1) ALLOYS	LEAD	GLASS & PLASTIC GLAZED ROOF TILES
ZINCALUME®	YES	YES	YES	YES	YES	YES	NO	NO	NO	YES
GALVANISED (ZINC COATED STEEL)	NO	YES	YES	NO	NO	NO	NO	NO	YES	NO
ZINC	NO	YES	YES	NO	NO	NO	NO	NO	YES	NO
COLORBOND® COLORBOND® ULTRA COLORBOND® METALLIC	YES	YES	YES	YES	YES	YES	NO	NO	NO	YES
COLORBOND® STAINLESS	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
STAINLESS STEEL	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
ALUMINIUM ALLOYS	YES	YES	YES	YES	YES	YES	YES	NO	NO	YES
COPPER AND COPPER ALLOYS(1)	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
LEAD	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Popular Flashings

Purpose designed flashings, in compatible* materials, can be obtained from Youngman Roofing. Those shown in this brochure are suitable for a Springlok 700 roof, but other architectural designs may be desirable in particular circumstances. These custom made flashings can be made to suit the architect's requirements.

SIDEWALL FLASHING	HEADWALL FLASHING	BARGE FLASHING
 STD is 300 (Measured to suit on site: must cover two complete ribs)	 STD is 300 (Measured to suit on site: must cover two complete ribs)	 STD is 300 (Measured to suit on site: must cover two complete ribs)
SWF +415mm girth	HWF 305mm girth	BB +415mm girth
APEX FLASHING	PLAIN TOP RIDGE/HIP CAPPING	FIXING/CLOSURE ANGLE
 STD is 300 (Measured to suit on site: must cover two complete ribs)	 STD is 300 (Measured to suit on site: must cover two complete ribs)	
AF 305mm girth	PTR/PTH 460mm girth	FA 80mm girth
EXT. CORNER/GABLE FLASHING	INTERNAL CORNER FLASHING	GUTTER FLASHING
 STD is 300 (Measured to suit on site: must cover two complete ribs)	 STD is 300 (Measured to suit on site: must cover two complete ribs)	
ECF +680mm girth	ICF +680mm girth	GF 300mm girth
APRON FLASHING	DRIP FLASHING	COUNTER FLASHING
 STD is 300 (Measured to suit on site: must cover two complete ribs)		
APF 460mm girth	DF 300mm girth	CF 110mm girth

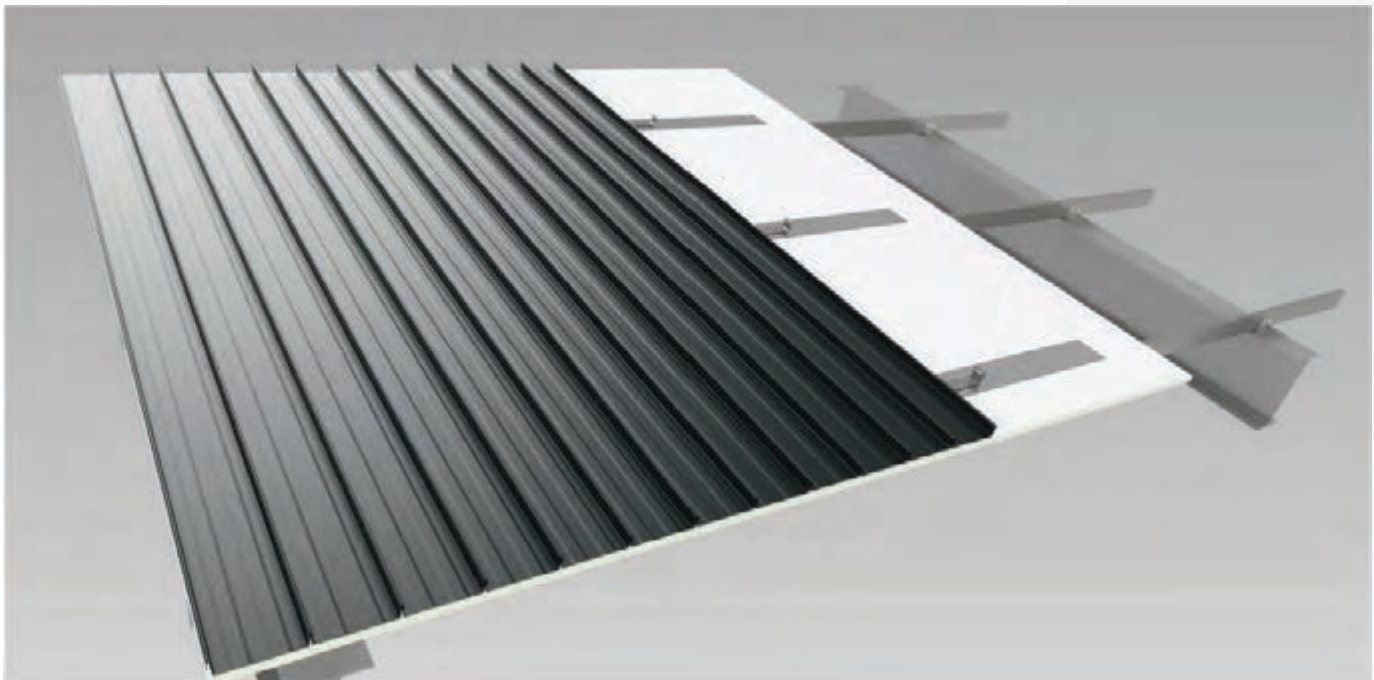
Insulation Over Purlin

BULK INSULATION:

Please refer to Youngman Roofing's Bulletin 1 on Bulk insulation over purlin. It is imperative that bulk insulation maintains its design depth throughout the roof assembly in order for it to achieve its designed thermal performance. Suitable mechanical spacer systems should be employed in these instances to prevent or reduce compression.

RIGID BOARD INSULATION:

LAMBDABOARD® is a laminated polyisocyanurate core board with a minimum core density of 34 kg/m³, available in various thicknesses. Finish will be white mineral and natural mineral and laminated on each side. LAMBDABOARD® to be installed above purlin and in conjunction with roof cover in accordance with manufacturer's specifications. Flat stabilizer strips minimum 150mm (see example below) wide need to be allowed for, placed directly under the Clip of the sheeting profile to prevent the clips from pulling into the board in the case of over tightening.



Delivery, On-Site Milling and Site Handling

Roof sheeting can be roll-formed to length on-site for long sheets, with labour arranged by the contractor. Sheets up to 15m can be delivered directly to the site, but the client must arrange for offloading. Please refer to Youngman Roofing onsite milling procedure documents. Steel Roofing products are normally delivered to the building site in strapped bundles. If not required for immediate use, sheets should be neatly stacked clear of the ground. If left open, they should be protected from the rain and moisture with covers. On no account should steel sheeting be allowed to get wet while still bundled in stacks. Rain and condensation are easily drawn between the surfaces of nested sheets by capillary action or driven in by wind action and, as this trapped moisture cannot evaporate normally, it can cause deterioration of the coating which may lead to a reduced life expectancy or poor appearance. If stacks become wet the sheets should be separated without delay. Sheets should then be stacked so that air circulation completes the drying process. Wet storage stain can occur from condensation alone - even in dry weather. Therefore keep the product dry to reduce the risks of water damage and keep storage time to a minimum. Sheets should be stored away from risk of damage by building operations, contractors with cement, dust, lime and abrasive dust, until installation takes place.

Solar Clamps

There is a growing demand for eco-friendly solutions. Solar energy is a sustainable choice, and your solar brackets enable easier adoption of renewable energy. Youngman Roofing have a range of tested and approved brackets that Seamlessly Integrates with our Springlok 700 concealed fix profile allowing for a clean, aesthetically pleasing finish, ensuring the brackets do not interfere with the roofing design.

No Penetration Mounting, one of the standout features is that the Springlok 700 profile enables the installation of solar panels without penetrating the roof surface, preventing potential leaks or structural issues. The combination of solar brackets and Springlok 700 profile offers long-lasting durability, perfect for areas with extreme weather. The adaptability of these brackets with various roof types and profiles, make it suitable for both residential and commercial installations. Lower maintenance costs due to the durability and integrity of concealed fix installations. For more details, please refer to our Solar Installation guidelines.



Our Offering



Get a quote

OUR OFFERING INCLUDES:

ROOF SHEETING: IBR, Corrugated, Widek, and Concealed-fix profiles.

INSULATION SOLUTIONS:

Including Youngtherm Insulation, Lambdaboard and other thermal products.

ROOF FASTENERS:

CORROSHIELD® fasteners engineered for performance.

POLYCARBONATE SHEETING:

Durable Palram solutions for light transmission.

CUSTOM FLASHINGS & ACCESSORIES:

Precision-made for every project.

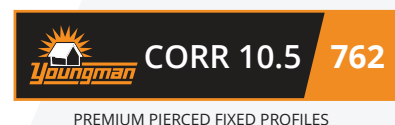
ON-SITE MILLING SERVICES:

We provide specialised on-site milling services for our concealed fix roofing profiles.

PROJECT CONSULTANCY SERVICES:

Our project consultancy services are designed to guide clients through every stage of their roofing project.

Whether for industrial, commercial, or residential applications, our products are backed by decades of expertise and a commitment to supply chain reliability.



Build with confidence.
Build with Youngman Roofing and Insulation.



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ROOFING AND INSULATION