



# ROOFING SHEETS

## Installation Guide



Manufacturing and supplying profiled metal roofing sheets since 1972

## Introduction and Disclaimer

This Installation Guide is intended for the use of Cladco Profiles' customers. It provides general advice on how to install a single skin sheeted metal roof. The advice provided is of a limited nature and should not be relied upon to set out exactly how a roof should be installed which will vary with the particular circumstances.

Customers who are in any doubt about how to install their roof should call our Customer Service Team on **01837 659 901**.

Cladco Profiles accepts no liability for any loss or injury caused by any reliance placed on this document.

# Before you get started

## Placing your order

Our single skin profiled metal sheets are made from 0.5mm or 0.7mm thickness pre-painted coated galvanized steel that comes off a roll and is pushed through a roll-forming machine or folder. Sheets generally give 1m width cover after lapping and can be cut to any length up to 5m for tile sheets, 6m for 13/3 corrugated and 32/1000 profile sheets and 8m for 34/1000 profile sheets. Flashings are available in standard lengths of 3m.

Working out the sheets, flashings, fixing screws and fillers that are needed for a job can be difficult. If you let us know the details of your roof we can help you figure out what you need and ensure that you place the right order.

Remember that sheets and flashings are often fabricated to order and it could be 1 to 2 weeks before you take receipt of your order. Make sure your plans allow for a suitable lead time prior to delivery.

## Work safely!

Roofing work can be hazardous. Caution should be exercised and appropriate safety precautions taken including the wearing of suitable protective gloves, clothing, footwear and hard hat.

Ideally crawling boards should be used to walk on sheeting. If this isn't possible ensure you walk over or close to the purlin supports keeping your weight evenly distributed. Clean soft-soled footwear should be worn for maximum grip and to reduce any damage to sheets.

UK law requires employers and self-employed contractors to formally assess the risks associated with each roofing job and, before starting their work, to plan and organise their work so that it is carried out in a safe manner. Further information on this and other applicable legislative requirements can be found by visiting the Health and Safety Executive's website [www.hse.gov.uk](http://www.hse.gov.uk).

## Receipt of goods

Sheets and flashings are bundled together and shipped in packs that are heavy and awkward to handle making delivery worth the extra expense.

Upon receipt of your order, check that it's correct and consistent with the accompanying delivery note. Any issues should be reported to us immediately by phoning our Customer Service Team on **01837 659 901**.

Two people should be able to lift a single sheet at a time off a delivery truck. The edges of sheets and flashings can be sharp so remember to wear protective gloves with rubber palms for grip.



# Before you get started

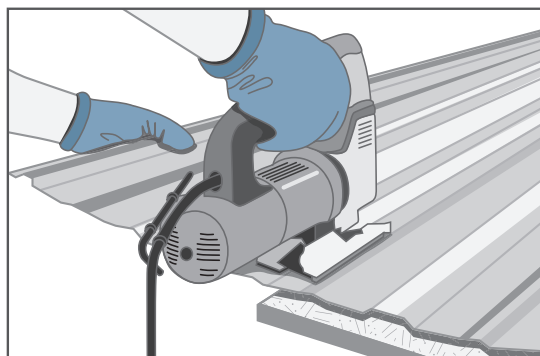
## Handling sheets

Care should be taken when handling sheets to prevent damage during installation. If possible mechanical handling equipment should be used (e.g. a forklift truck). Dragging one sheet's edge across another when unloading may cause scratching of the sheet below, so make sure the sheet is lifted clear and not dragged. Any packaging should be removed before lifting sheets onto a roof.

When on the roof and prior to fixing, sheets should be kept secured to the roof, close to the rafter line and, in so far as is possible, spread out so their weight is evenly distributed across the purlins. Debris arising during the installation process should be removed and off-cuts of insulation, surplus fasteners and similar not be left on the sheeting.

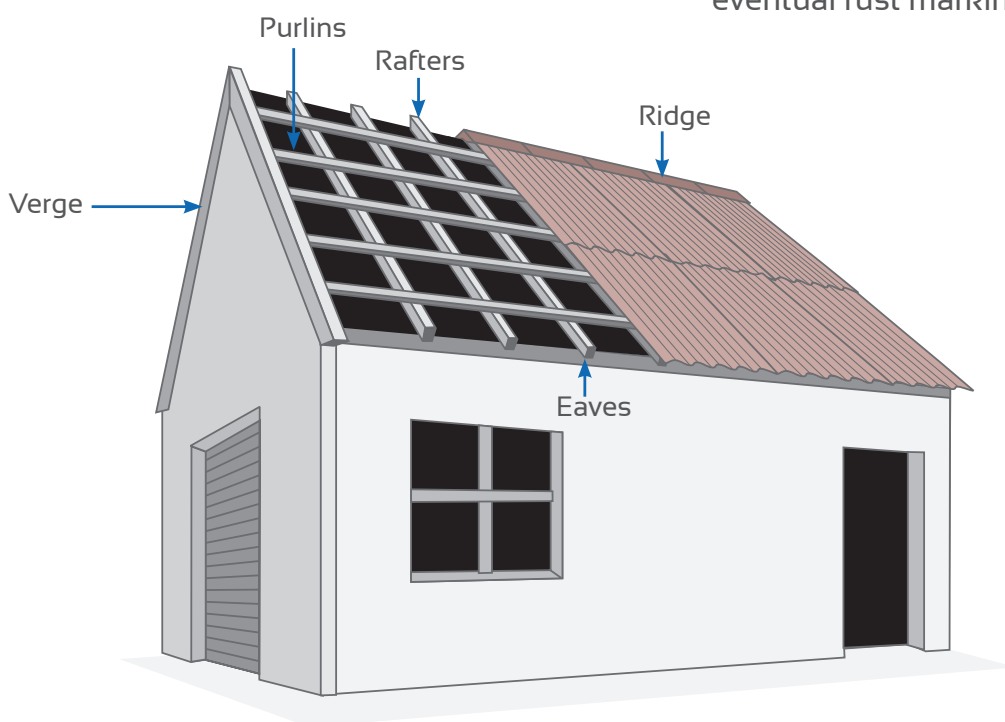
## Cutting sheets on-site

If necessary, we recommend sheets are cut whilst on the ground and resting face down on padded supports. Sheets should be cut using tools that produce little heat as this can damage a sheet's coating.

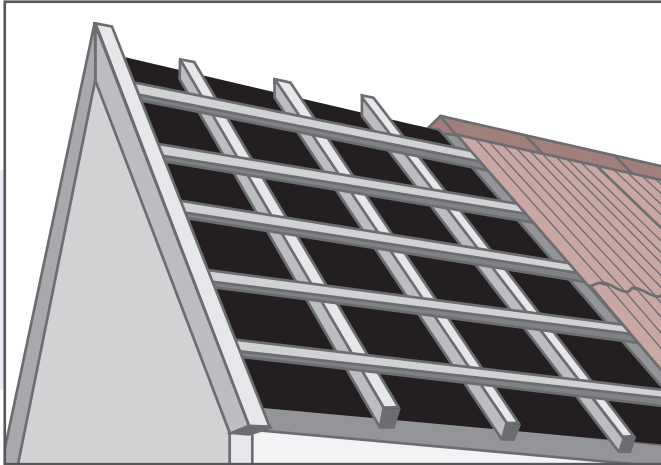


For longer straight cuts we recommend a circular saw with a fine-tooth metal cutting blade that produces a cold cut. For small cut-outs, openings and cuts that are not straight, a jigsaw or a reciprocating saw is recommended. In other circumstances an angle grinder with a small tooth blade or disc is usually suggested although reciprocating nibblers which are widely used in the roofing trade also produce an excellent cut. Swarf should be removed with a brush to prevent eventual rust marking and scratches.

## Glossary



# Step-by-Step

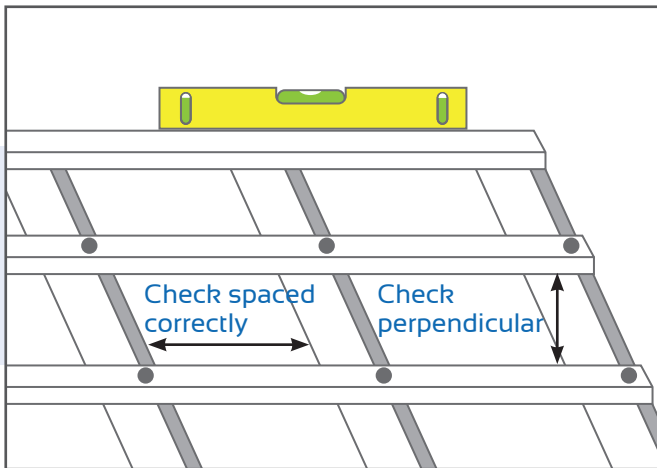


## 1a. PURLINS

Use purlins to create a supporting framework and to transfer the loads imposed by the sheeting onto the primary building structure.

As a rough guide purlins should have a width of at least 50mm to ensure sheets can be easily fixed, and, in the case of 0.7mm thickness sheeting, be spaced no further than 1.2m apart; 1m apart in the case of 0.5mm thickness sheeting. Exact requirements will vary.

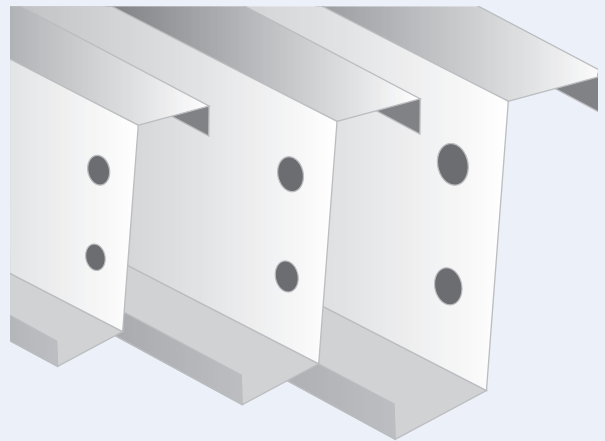
All purlin joins or laps should be supported by a rafter. Purlins can be fixed to rafters using boltable cleats



## 1b. PURLINS

Once purlins have been fitted and a supporting framework created, an inspection should be carried out before further work is commenced. It should be checked that:

- ☐ The purlin framework is correctly aligned and levelled;
- ☐ The purlins that make up the framework are correctly spaced and within specified tolerances;
- ☐ There are no protrusions such as bolt heads and cleats on the face of the framework.

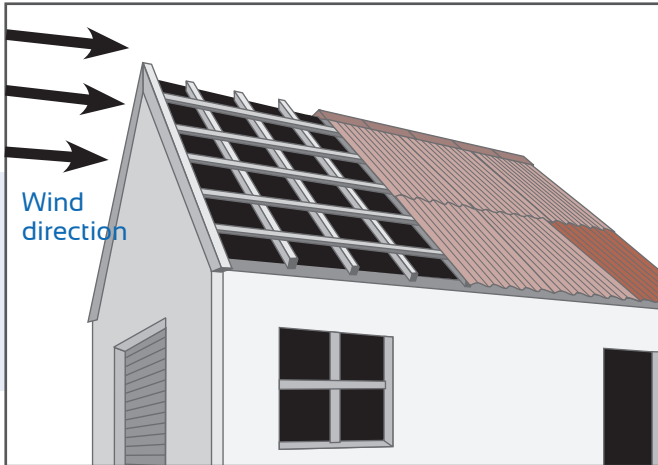


## Z SECTION PURLINS

Cladco Profiles now produces metal Z section purlins in Z39 structural grade galvanised steel. These are available with a 140mm, 175mm or 200mm depth Z section and in 1.6mm, 1.8mm and 2mm thickness steel.

Z section purlins can be made to any length and can be joined by overlapping (one Z section can be turned around and slotted inside another) or by using short sleeves where two longer sections meet.

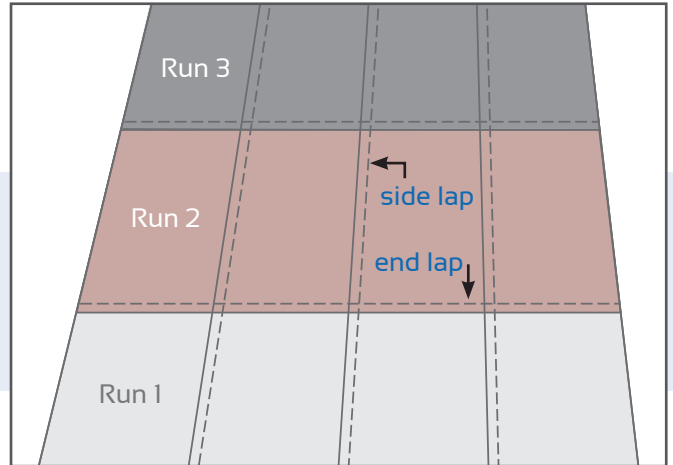
## Step-by-Step (continued)



### 2a. LAYING SHEETS

Lay sheets in runs. Start at the eaves and in the corner away from the direction of the prevailing wind (this will help to prevent side laps facing into the wind and water ingress).

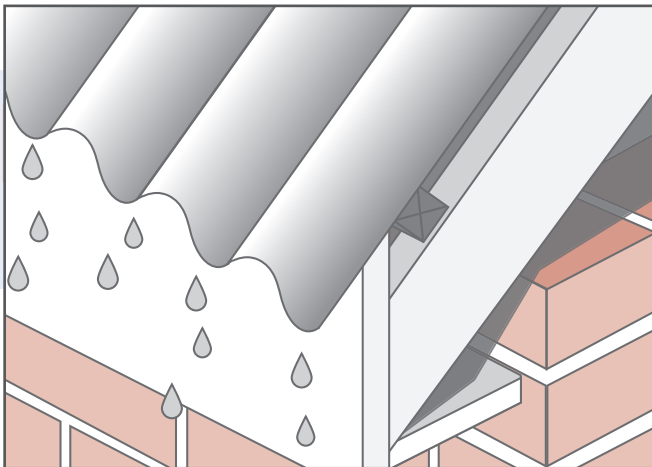
If the first sheet is not laid perpendicular to the eaves and ridge, adjustments will have to be regularly made when laying other sheets and a 'saw tooth' effect at the eaves will be seen. This may be unavoidable if the building is not square.



### 2b. LAYING SHEETS

Sheets should be overlapped by the next sheet in the run by at least one profile or corrugation ('side laps').

Adjacent runs of sheets should overlap each other by at least 250mm ('end laps').



### 2c. LAYING SHEETS

The first row of sheets should extend over the bottom purlin and the eaves so that rainwater can drain into a gutter or beyond the wall.

#### Top Tip!

When laying your first few sheets it may be helpful to not fully fix them until sure they are correctly aligned. This can help mitigate the impact of false starts! Once sure put the remaining fixings in and carry on.

#### Top Tip!

A stretched string along the purlin line can make it easier to keep the fixings in line when the sheet is laid on the purlins.

## Step-by-Step (continued)



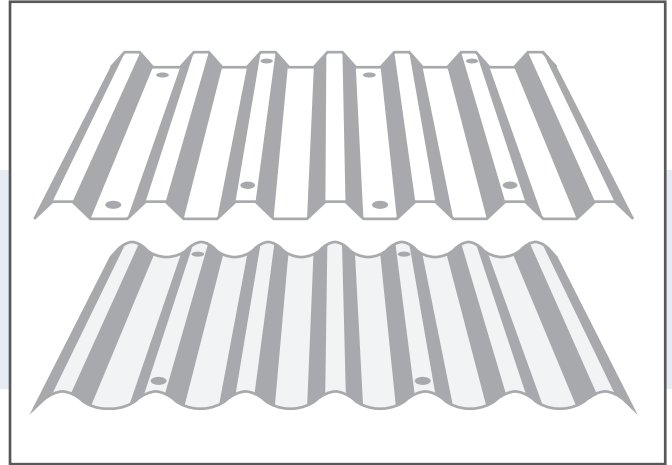
### 3a. FIXING SHEETS TO PURLINS

The fixings used to attach sheets to purlins must be durable and able to withstand considerable wind pressures. We usually recommend self-drilling 'TEK' type screws with a 5/16th hex head.

These have a drill point for drilling through the sheet and purlin before tapping into the purlin. Under the head is a 19mm stainless steel washer with bonded neoprene pad that compresses to create a seal with the roof sheet.

The type of screw required will depend on the sheet and type of purlin (timber/light steel/heavy steel).

See [www.cladco.co.uk/accessories/fixings](http://www.cladco.co.uk/accessories/fixings)



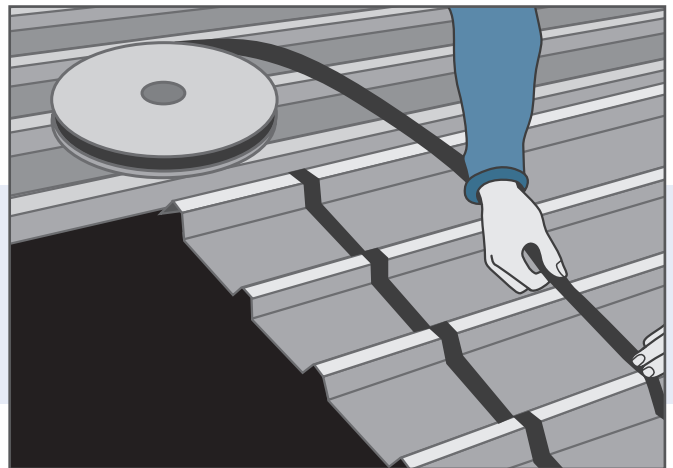
### 3b. FIXING SHEETS TO PURLINS

TEK screws are fitted through the trough or pan sections of a sheet's profile, or if fixing corrugated sheets, through the crest of the sheet's profile using a longer screw with a soft BAZ washer. It can be helpful to use a centre punch to put an indentation in the sheet at the point you want the screw to go through to keep the screw on course when screwing it in. Make sure fixings are not over tightened as this can burn off the soft neoprene pad under the washer.

Under normal conditions sheets should typically be fixed to supporting purlins at every second trough or third corrugation with fixings in every trough at the bottom/eaves to help protect against wind uplift if the roof is in an exposed position. The exact fixings required however will depend on the circumstances.

### Top Tip!

Remember it is very difficult to separate sheets once they are joined by lapping tape, make sure of your sheet position before placing one sheet on another!



## 4. SIDE LAPS

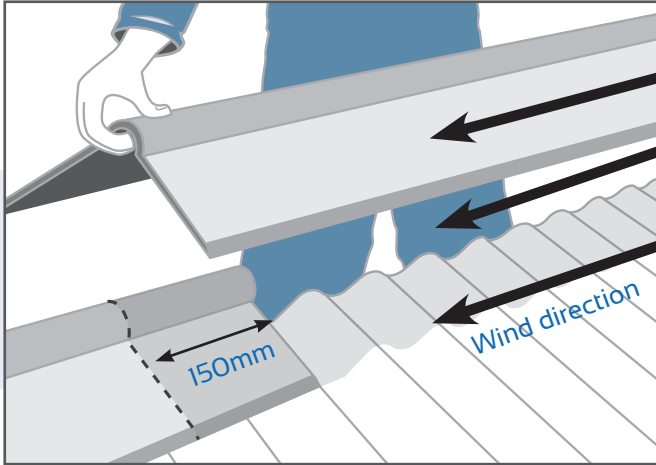
It is good practice to use mastic lapping tape and stitching screws to ensure a robust weather resistant joint on side laps. Lapping tape with a section of 9mm x 1.5mm mastic should be run along the crest of the profile that is to be lapped, sheet to sheet stitching screws should then be used at 600mm intervals down the lap to consolidate the bond created by the lapping tape.

## 5. END LAPS

A minimum sheet over sheet overlap of 250mm should be allowed for where sheets lap, this lap must be supported underneath by a purlin.

As with side laps, it is good practice to use lapping tape to help create a robust weather resistant joint. A strip of tape should be placed across the full width of the lap approximately 25mm from the end of the top end of the overlapped or bottom sheet. Lapping tape is considered more effectively than silicone.

## Step-by-Step (continued)



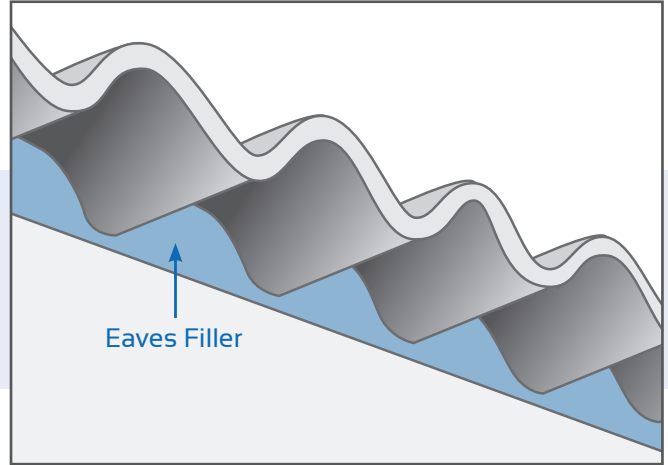
### 6. RIDGE CAPS

Lay ridge caps from the opposite end of the roof to the direction of prevailing winds. Each cap should be overlapped by the next cap in the run by a minimum of 150mm.

We usually recommend ridge caps are fixed using self-drilling TEK type stitching screws to the high point of each profile they cover and through the appropriate ridge filler if one is being used. This helps ensure a robust weather resistant joint as well as keeping out birds and vermin.

#### Top Tip!

When constructing your purlin support structure, consideration should be given to the need for additional purlins to support your ridge caps and other flashings.



### 7. GAPS AT EAVES AND RIDGE

In order for a roof to be properly weatherproofed, the gaps that occur under the sheeting at the eaves, and between the sheeting and the ridge flashing, need to be sealed. This can be done using foam filler strips that match the profile of the sheeting being used.

An 'eaves' filler strip is designed to go under a sheet. An 'opposite ridge' filler strip is designed to go over a sheet. Foam filler strips should be bonded to the pans or valleys of the sheeting with a flexible waterproof silicon sealant and should be continuous over the entire width of the sheeting.

### 8. PROTRUSIONS THROUGH SHEETED SURFACES

Protrusions such as pipes and ducts should be adequately flashed where they pass through the sheeting surface. Where ribs have to be cut away to permit penetration, additional framing should be installed as required to support the sheeting.

Depending on the position of the penetration through the roof, special attention should be given to back flashing the sheeting to the ridge or point of water entry up the roof from the protrusion.

In all cases, all cutting and flashings should be so arranged that adequate provision is made for the drainage of all troughs and corrugations.

### ONGOING CARE

Your new roof should be inspected at least yearly and cleaned of debris such as leaves to ensure a long useful life. Areas that have become marked may be cleaned using soap and water. More persistent marks may be addressed through the usage of white spirit or car paint cutting compound.





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