

## Eco Slate Installation Guide

### Getting Started:

Please ensure that you follow the installation guidelines and the correct procedures as any variance to this will void your warranty.

Before starting please make sure you have read these instructions and have all necessary tools and materials together.

It is essential you ensure that you have all required tools and fixings before proceeding with the installation of Eco Slate. It is also essential that all access to roof and relevant areas where Eco Slate is to be installed and stored are safe and none hazardous environment and conform to Health & Safety regulations (UK, Health & Safety at work act 1974 <http://www.hse.gov.uk/pubns/hsc13.pdf> ) It is recommended that Roofing Building and / or Health & Safety professional advice is taken at every stage of the installation process.

**Roof Base:** Eco Slates must be installed onto 18mm ply board or oriented strand board (OSB). It is also recommended that all previous roofing materials be completely removed before installing Eco Slate

**Underlay:** A minimum of one layer of breathable membrane must be installed over the entire roof. A minimum of one layer of roof felt of synthetic underlay/breathable membrane must be installed over the entire roof. **The use of any tar-based felt underlay will void your warranty.**

*\* For AA fire rated roof systems use Firefly Phoenix underlay\**

### Tools:

It is of course up to the individual professional which tools are to be used, here are some suggestions for the installation of Eco Slate.

- Pencil/Marker
- Chalk Line
- Hammer
- Knife/Snips
- Relevant Health & Safety Equipment including PPE

### Slate details:

#### Price is per box of 34 slates

20° to 45° pitch = 17 slates per m<sup>2</sup>, 11.39 Kgs/m<sup>2</sup>

15-20° pitch = 19 slates per m<sup>2</sup>, 12.73 Kgs/m<sup>2</sup>

10-15° pitch = 22 per m<sup>2</sup>. 14.74 Kgs/m<sup>2</sup>

Each slate weighs 670 grams\*

Slates are 300mm x 420mm.

Alignment: See note below and picture right:

Slates have embossed guides for either 155mm (6") or 177mm (7") overlap.

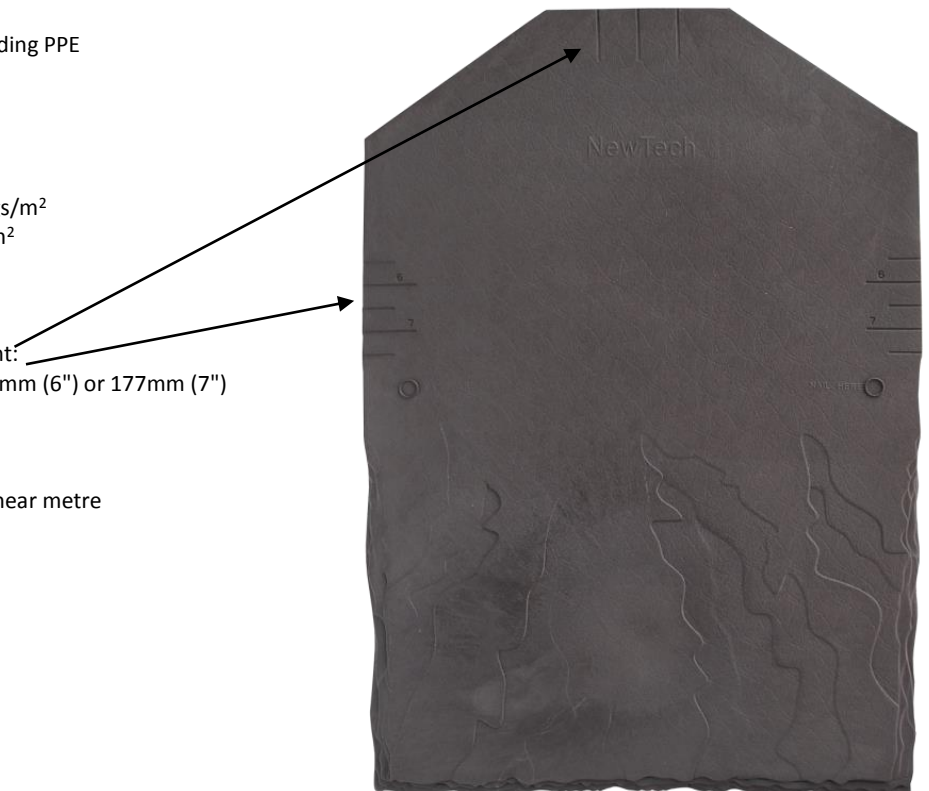
Thickness 6mm leading edge 3mm top\*

Ridge / hip 7 slates/ linear metre

Eaves (e.g. above gutter) add 3 slates per linear metre

Colour: Slate Grey

*\*nominal*



**Nails:** Eco Slates must be secured using the relevant size, copper, stainless steel or hot-dipped galvanised nails with a minimum head diameter of 5mm.

**Flashing:** Eco Slates can be used on valleys, ridges and as under flashings (soakers). For pitches between 10 and 20 degrees it is recommended to use Eco Slates as they are flexible and can be bent to join with a vertical surface (in cold weather the slates may need to be warmed using a hot air gun or by leaving in a warm place for several hours before use) enabling cap flashing to be dressed over it. Ensure the flashing lap is sufficient for adequate weatherproofing – minimum 150mm. If using existing flashing, it is imperative to ensure that it is sealed to the Eco Slates using a proprietary sealant suitable for use with materials containing PVB.

**Vents:** All roof structures should be vented in order to allow heat build-up and moisture to escape the attic area. Vents are to be placed proportionately at the eaves/soffits. Dry Ridge or Slate vents should be used. Please seek advice from a qualified roofing supplier or contractor before fitting.

**Important Reminder:**

Always ensure that your roof has adequate roof ventilation regardless of the roofing material being used. If not, you may be at risk of serious structural damage. You can find out more about the regulations regarding your roof by clicking this link.

<http://www.planningportal.gov.uk/permission/commonprojects/roof>

**Slate alignment and overlap:** Each slate has embossed guidelines to aid location, there are vertical lines at the top of the slate to assist in locating slates horizontally and lines on the edge of each slate as a guide to the overlap required dependent on pitch. To give the correct overlap for roof pitches of 10 to 15 degrees, set the line marked '6' on the slate level with the top of the slate(s) underneath, use the line between '6' and '7' to align slates for pitches between 15 degrees and 20 degrees and the line marked 7 to align slates for pitches between 20 and 45 degrees. This is to allow sufficient overlap to accommodate expansion and contraction.

**Quantities:** - 20 to 45 degree pitch = average 17 slates per sqm. 15-20 degrees = average 19 slates per sqm, 10-15 degrees = average 22 slates per sqm

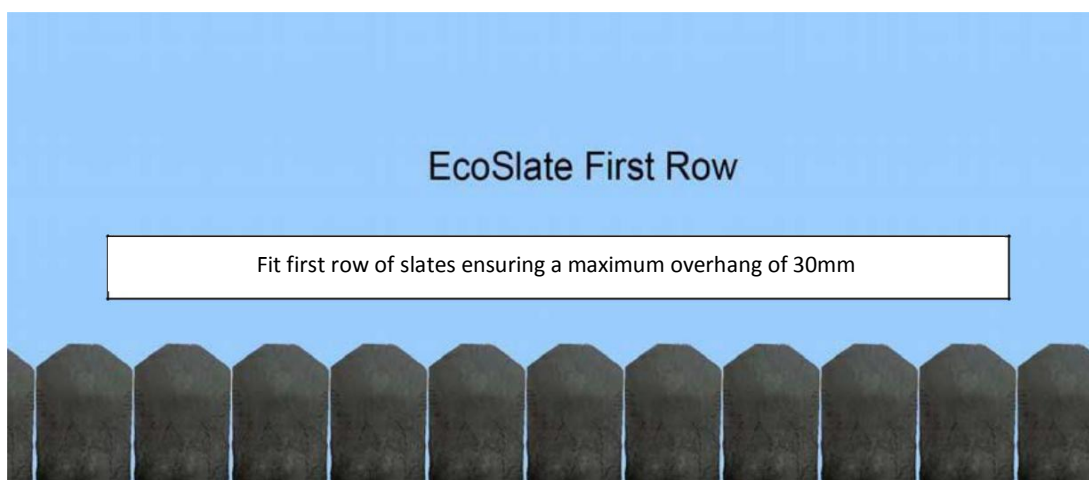
**Installation Procedure:**

Prepare roof base ensuring that the area is clean and free from debris, dirt and sharp edges. When laying the breathable membrane, make sure that the underlay is as flat to the base as possible.

**Tools:** Hammer/Nails, Chalk Line, Stanley Knife/Snips (or any preferred cutting equipment).

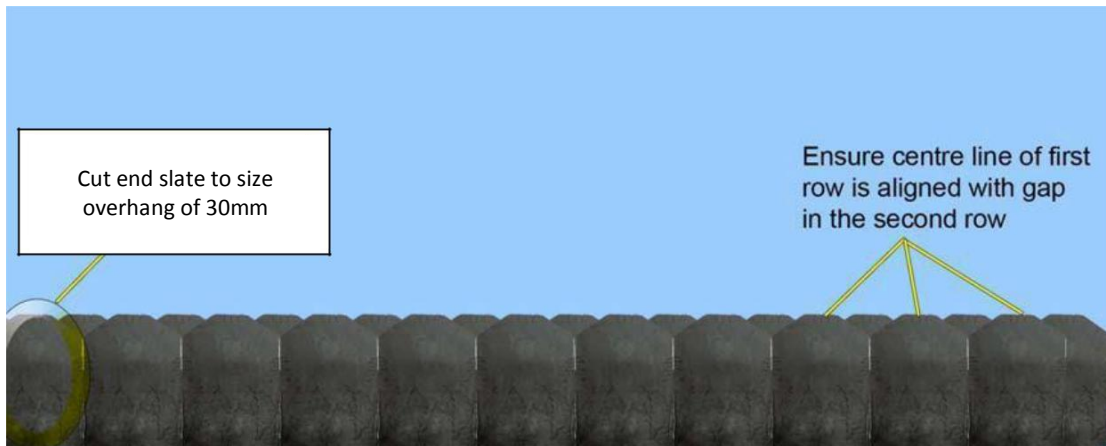
**Step 1:**

Lay the first row of slates as a starter course with no more than 30mm overhanging the roof board. The overhang should be supported with a bull nose or plain edge trim to prevent slate 'sag' in warm weather.



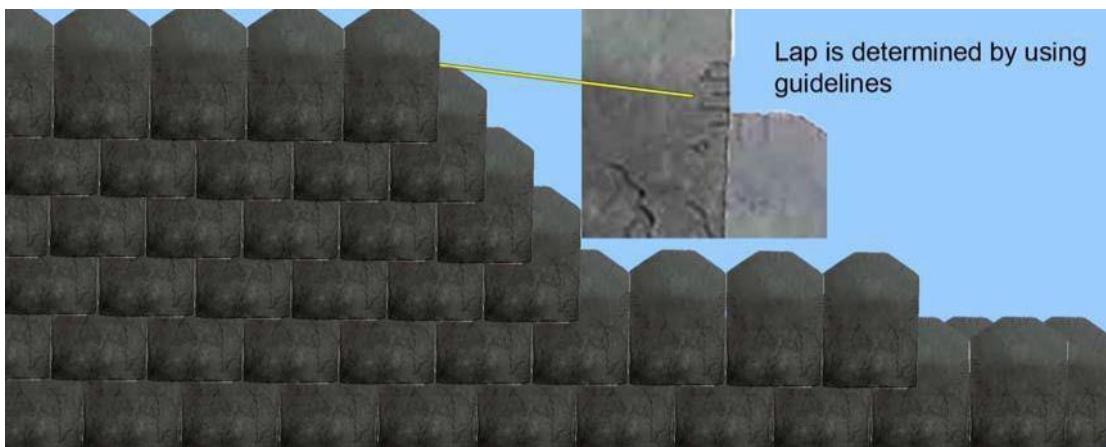
### Step 2:

Lay the second row directly on top of the starter course, stagger the slates so that the centre of the second row is on the gap of the starter row. Cut slates at ends of row to suit with a sharp knife.



### Step 3:

Stagger the third row with the second row ensuring required lap is achieved using the guidelines.



### Step 4:

Stagger the fourth row in a similar fashion to that of the previous rows, ensuring required lap is achieved. Follow this procedure up the roof until the ridge is reached.

### Step 5:

**Ridges & Hips:** Eco Slates can be used as a ridge and hip (7 per running metre). Please ensure induced bonding with warm air gun when necessary. A conventional ridge or dry ridge system can also be used.

### Step 6:

**Valleys:** Eco Slate can also be used for valleys, please note; these must be fitted BEFORE roof slates are fitted. Conventional valley materials such as lead can also be used.

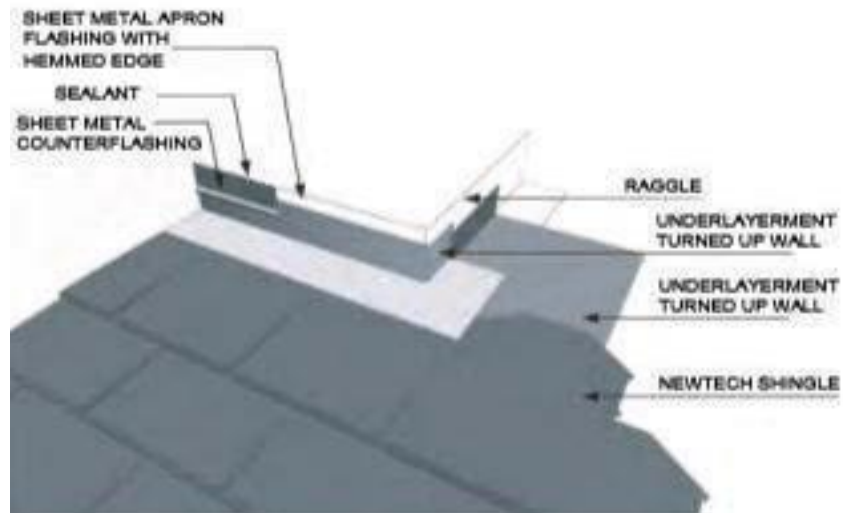
### Flashing:

Flashing is to be used around all obstructions on the roof. Such as dormers, chimneys, valleys, etc. Eco Slate recommends lead as one of the most durable materials that will last just as long as the Eco Slate itself.

**Apron (Roof to wall) Flashing:**

Apron flashing is used when a roof terminates to a wall causing a course to be cut and face nailed. It is installed over the Eco Slate and behind siding or counter/cap flashing.

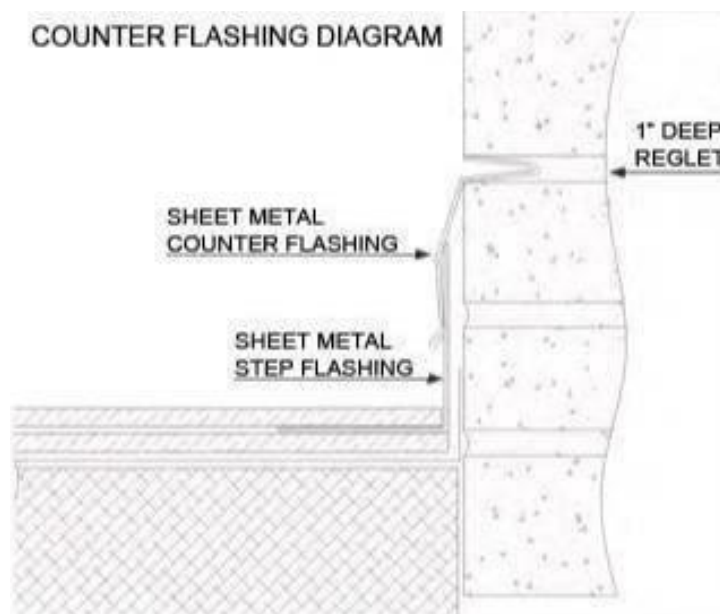
**APRON FLASHING DIAGRAM**



**Counter Flashing:**

Cut a minimum 1" (25.4mm) deep reglet (see diagram) into the masonry material. Custom bend the counter flashing to fit the reglet. Start by installing lowest piece first and work upwards for proper water runoff. Fasten the counter using either expandable anchors or masonry screws.

**COUNTER FLASHING DIAGRAM**

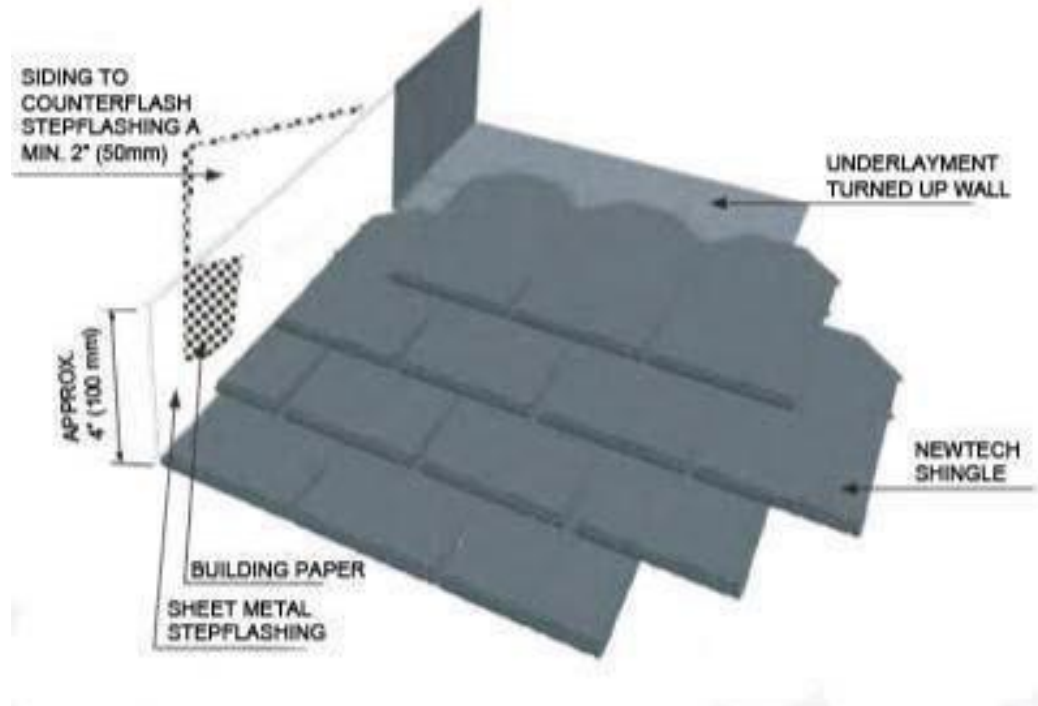


### Step Flashing:

Step flashing is to be used over or under the roof coverings and are turned up on the vertical surface. Step flashing should extend under the uppermost row of the roof tile the full depth of the roof tile or at least 4" (101.6mm) over the roof tile immediately below the metal. The vertical leg of the metal should be turned up a minimum of 4" and extend 4" on the roof tile with  $\frac{3}{4}$ " (19.05mm) hem.

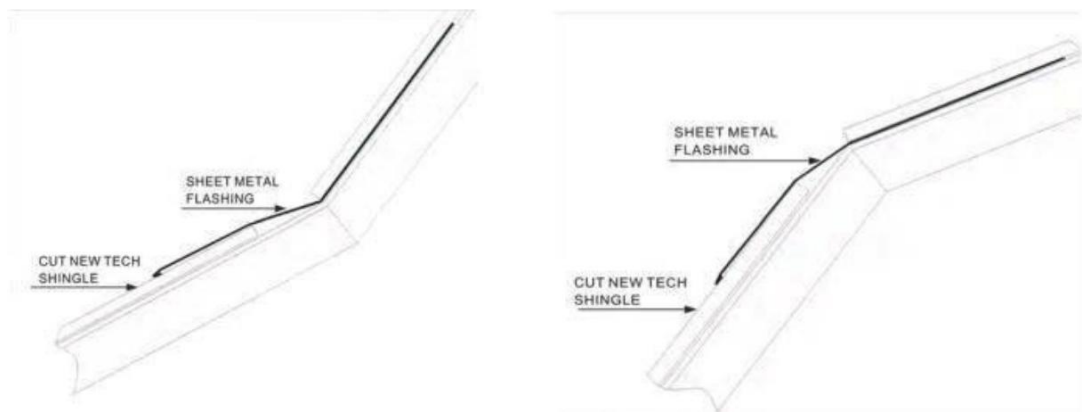
Flashing should have a minimum length of 9" (228.6mm) and must overlap a minimum of 2" (50.8mm).

STEP FLASHING DIAGRAM



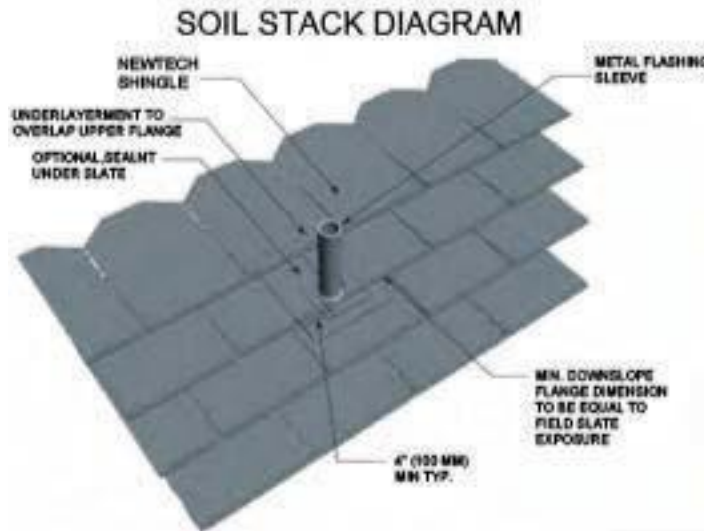
### Pitch Changes:

Eco Slates can be installed onto rolling roofs with a gradual pitch change. However, in the case of some roof designs, drastic pitch changes (>20 degrees) will require the use of metal flashing where necessary. For gentle pitch changes Eco Slates should be heat bonded into place using a hot air gun and may require extra nailing as conditions allow.



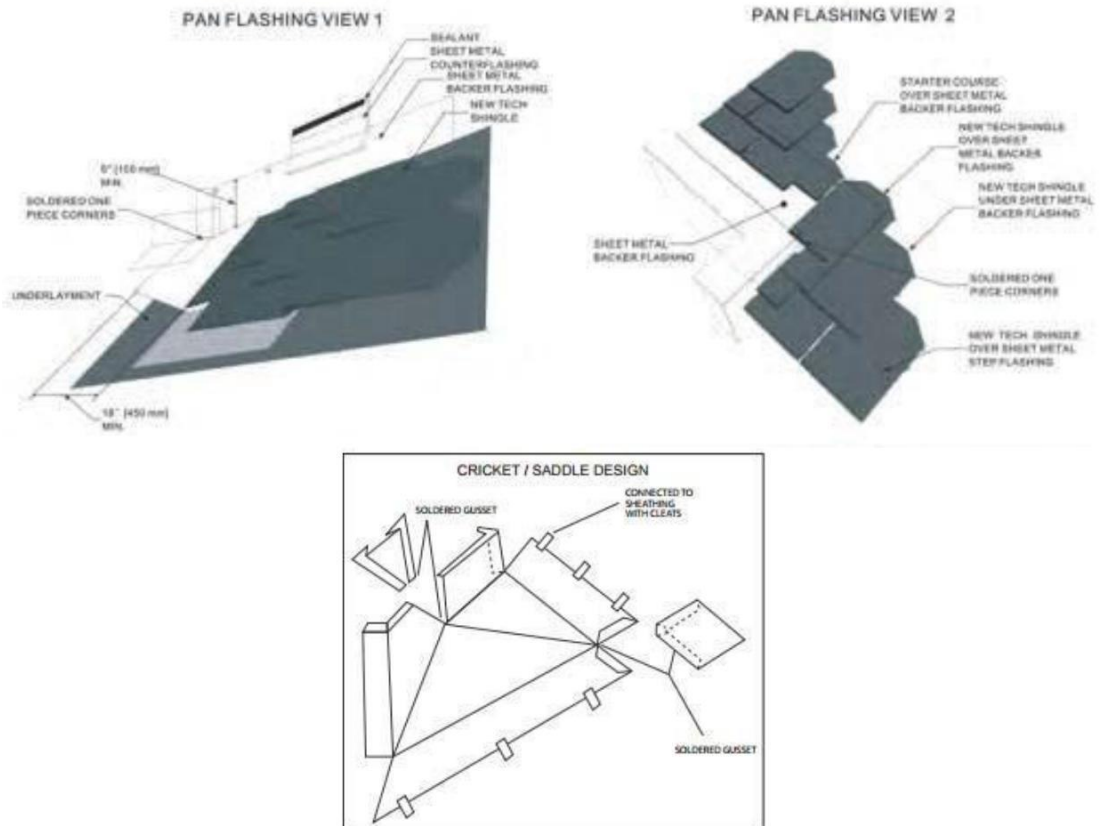
### Vent Flashing:

Normal type of roof vents or pipe boot flashing can be used. A lead or PVC stack for plumbing pipes is recommended. Materials with extended-life should always be used.



**Chimney Saddles:**

With chimneys more than 2 feet (60.96cm) wide it is recommended that a saddle be installed to divert water from the back of the chimney. Chimneys less than 2 feet may require only a simple pan flashing.



**IMPORTANT NOTE:**

Eco Slate is a self-bonding slate, which means that over time, and dependent on warm weather, the installed slates will form a permanent bond between each other, this bond is achieved more quickly on lower pitch roofs i.e. below 45 degrees where gravity helps increase the contact between the lapped slates. The BBA tests were carried out with un-bonded slates. Eco Slate is not recommended for vertical applications, dormer cheeks or Mansard style roofs or roofs with a pitch of over 45 degrees, use in such applications will invalidate your warranty