pop up™ penetration
the engineered solution

LYSAGHT

POP UP PENETRATION®

INSTALLATION GUIDE

INSPIRATION TO BUILD BETTER

POP UP PENETRATION®

The only penetration system that does not affect roof run performance.

Unlike unattractive and poorly performing dry pan flashing, the patented Pop Up Penetration® system, exclusively distributed by Lysaght, facilitates the even flow of rainwater where roof penetrations are located thanks to a unique and elegant design which ensures a long run roof carries water away evenly and efficiently.

Suitable for roof pitches equal or above two degrees and available in a range of quality materials, finishes and colours to complement any roof, the clever Pop Up Penetration® system also easily accommodates multiple roof penetrations by ensuring each penetration re-diverts its own water correctly and does not affect roof run performance.

DIFFERENCES AND ADVANTAGES

- Manufactured using genuine COLORBOND® steel and ZINCALUME® steel.
- Clean, elegant design in a range of finishes and colours to suit any roof and architecture.
- The engineered solution that correctly redirects water flow to all pans of the roof sheet to avoid flooding of the laps.
- Can be ordered in kit form, off a plan, months in advance.
- No site measure is required, saving time on site.
- Design has been engineered, independently certified and is endorsed by Lysaght for use with its products.
- The system is covered by the BlueScope Roofing Warranty*.
- Complete peace of mind that your project will be watertight.

*Subject to application and eligibility criteria being met.

Note: To be used in conjunction with Lysaght design guides.

You have made the right choice! Pop Up Penetration® kits have been designed with the installer in mind. We believe you have purchased the easiest, highest performing flashing assembly you will ever install.

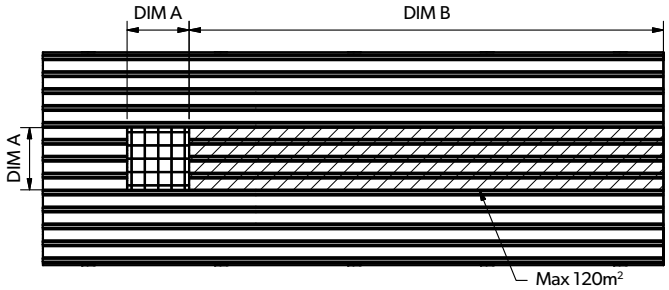
Pop Up Penetration® kits are available in five convenient sizes covering roof penetration sizes from 100mm to 3300mm.

Table 1

Kit Size Cutout Dimensions		**Max Roof Run Behind Penetration (120² Kit)**
Kit No	**DIM A (mm)**	**DIM B (m)***
1	UP TO 570	210.5
2	571 - 1100	210.2 - 109.1
3	1101 - 1700	109.0 - 70.6
4	1701 - 2400	70.5 - 50.0
5	2401 - 3300	50.0 - 36.4

Standard Pop Up Penetration® kits are available for Lysaght TRIMDEK®, SPANDEK®, CUSTOM ORB®, and KLIP-LOK® roofing profiles*. Kits for Lysaght TRIMDEK®, SPANDEK®, and CUSTOM ORB® profiles are suitable for both new and retrofit applications. As Lysaght KLIP-LOK® profiles are very difficult to remove once installed without damage, KLIP-LOK® kits are only suitable for new sheeting applications.

Standard Pop Up Penetration® kits are suitable for roof pitchs equal or above 2 degrees and a maximum of 120 m² of "upstream" roof. This is suitable for the majority of applications, with max upstream runs for each kit shown as DIM B in table 1. Special Pop Up Penetration® kits are available for a maximum of 240m² of "upstream" roof. Please contact your local Lysaght Branch for details.



INSTALLATION

To ensure optimum performance of the Pop Up Penetration® Kit's, the following steps must be observed.

STEP 1:

Marking the penetration - cut hole in roof and turn lower sheets up as per sheet manufacturer's recommendation.

Note: When cutting and removing insulation be sure to remove only the insulation that is required to suit the hole size. Removing excess insulation may cause condensation issues.

DO NOT remove safety wire at any stage of the installation.

WHAT YOU WILL NEED:

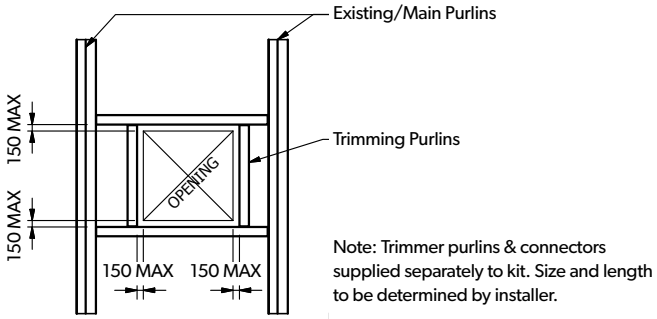
- Snips, Shears or Cold Cut Saw (this is the preferred option for cutting the rib of the sheeting, particularly on KLIP-LOK® profile)
- Silicone Gun + 1 tube 100% Natural Cure Silicone (Grey for ZINCALUME® steel, Clear for COLORBOND® steel)
- Battery Drill + 5/16 Socket and 3/8 Socket
- Tape Measure
- Lead Free Pencil
- Folding Pliers
- Square

STEP 2:

Install roof trimmers (not supplied) as per roofing manufacturers recommendations.

Figure 2.1

Example trimmer Installation.



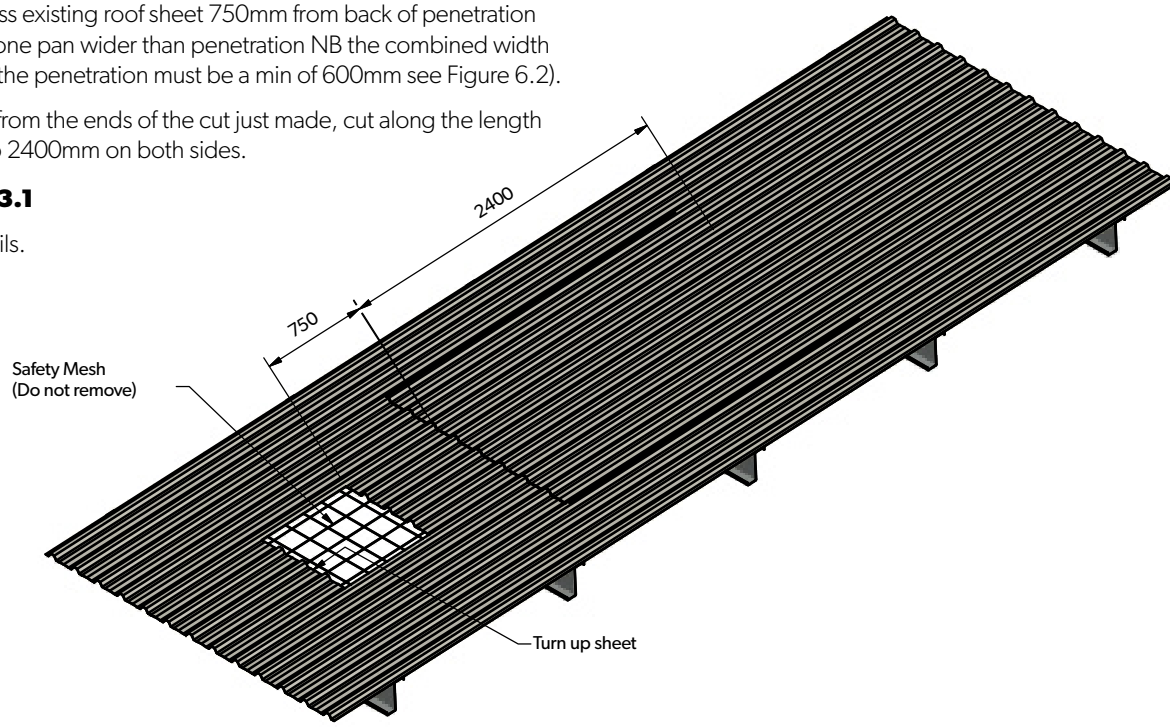
STEP 3:

Cut across existing roof sheet 750mm from back of penetration (at least one pan wider than penetration NB the combined width beyond the penetration must be a min of 600mm see Figure 6.2).

Starting from the ends of the cut just made, cut along the length of the rib 2400mm on both sides.

Figure 3.1

Cut details.



STEP 4:

Line up support channels with the back of the penetration (high side) and place over each rib for TRIMDEK® and KLIP-LOK® profiles. For SPANDEK® and CUSTOM ORB® profiles place over each screw fixed rib (typically every second rib).

Figure 4.1

Place support channels.

STEP 5:

Fix down the support channels to the purlins below with two No 12-14 teks screws. Screw length will need to allow for insulation thickness. On the outside ribs (cut ribs) invert a support batten and fix it inline with the other battens as shown in Figure 5.3.1.

Figure 5.1

Screw fix support channels.

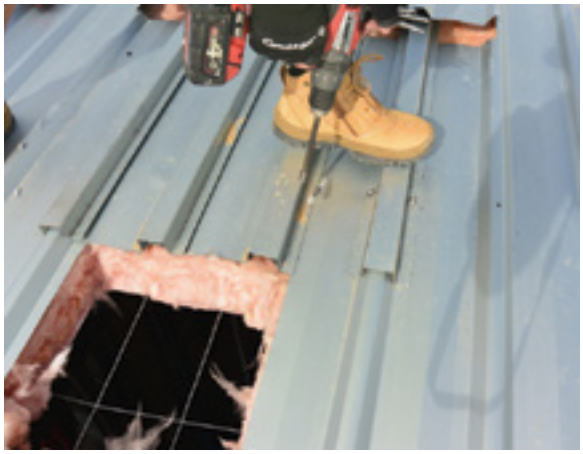


Figure 5.2

Support channel placement.

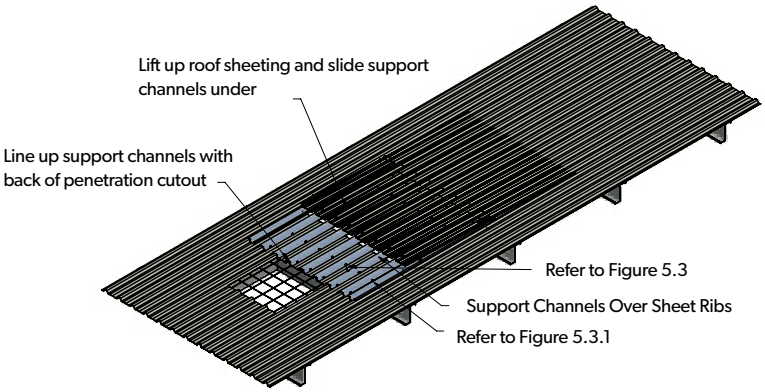


Figure 5.3

Support channel fixing.

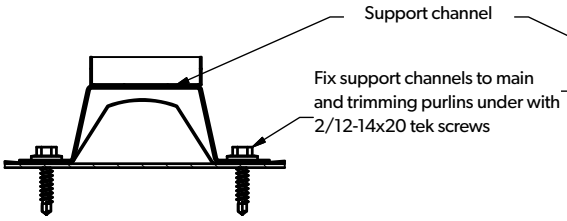
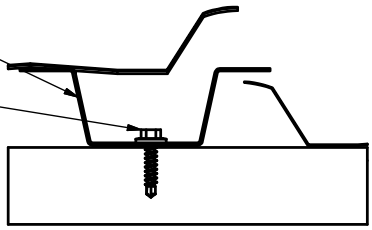


Figure 5.3.1

Support channel fixing.

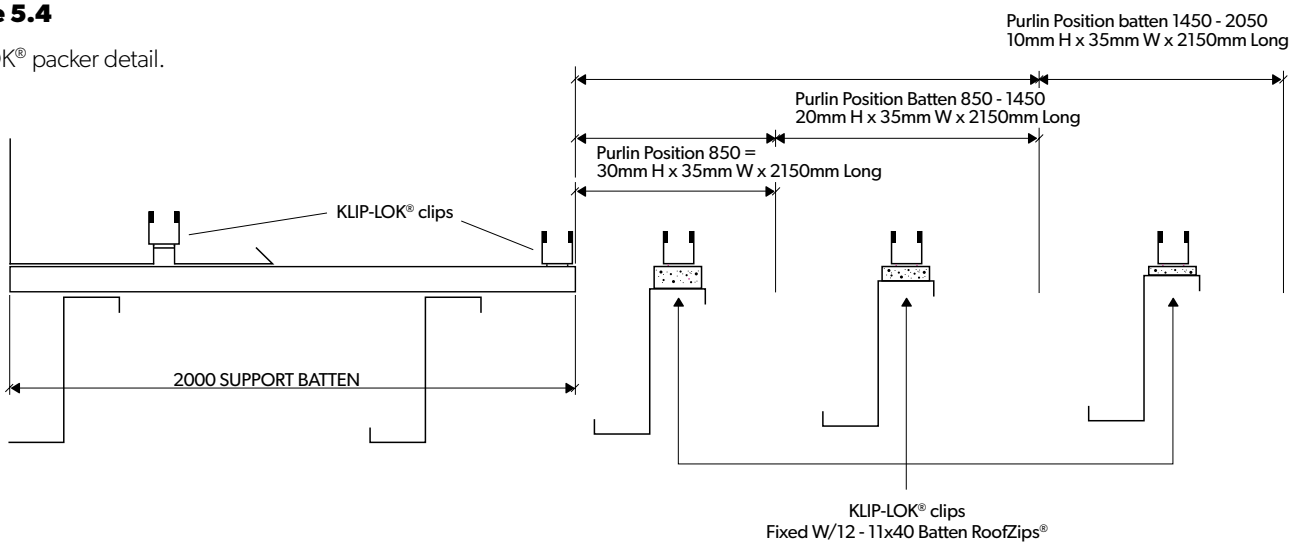


STEP 5A - LYSAGHT KLIP-LOK® PROFILE ONLY:

Install KLIP-LOK® sheets up to side of penetration. Sheets may also be installed below the penetration but should not be installed above the penetration prior to the installation of the supplied closed cell foam packers and KLIP-LOK® clips to purlins upstream of support channels as per Figure 5.4

Figure 5.4

KLIP-LOK® packer detail.



STEP 6:

Place the rear apron in position, to mark and then cut to lenght, as per Figure 6.1. The apron needs to be the same width as the upper sheet cut in Step 3 extending 5-10mm beyond the top of the rib. Once cut, slide the rear apron up under the roof sheets and line it up with the back of the penetration.

Figure 6.1

Rear tray cutout.

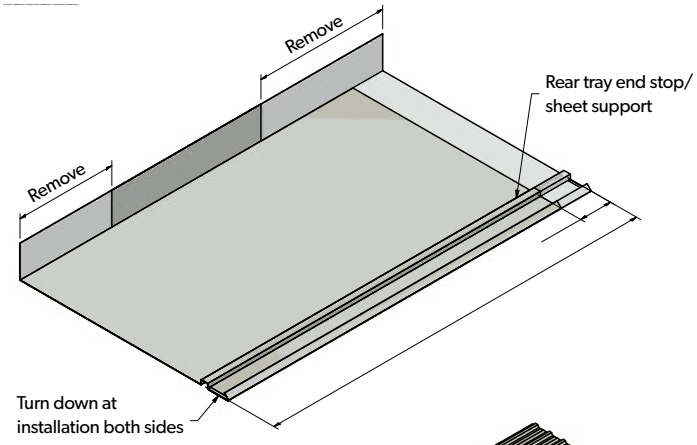


Figure 6.2

Rear tray placement.

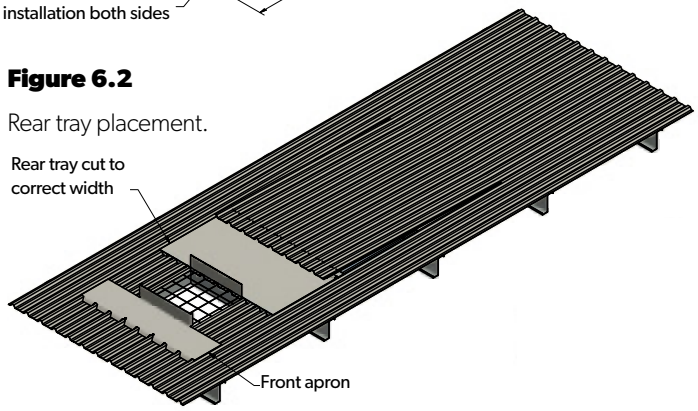


Figure 6.3

Installing Rear Tray.

STEP 6A - KLIP-LOK® ONLY:

Install KLIP-LOK® sheets around and upstream of the penetration.

STEP 7:

Place the front apron in position, to mark and then cut to length, as per Figure 7.1. The apron needs to be the same width as the upper sheet cut in Step 3 extending 5-10mm beyond the top of the rib either side.

Figure 7.1

Front apron cutout.

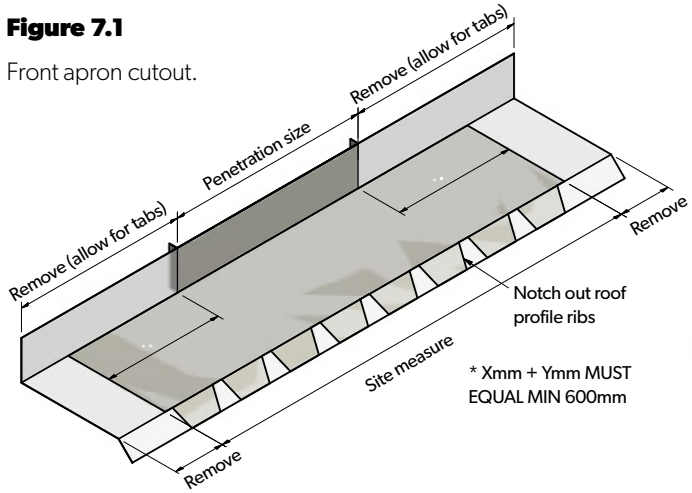
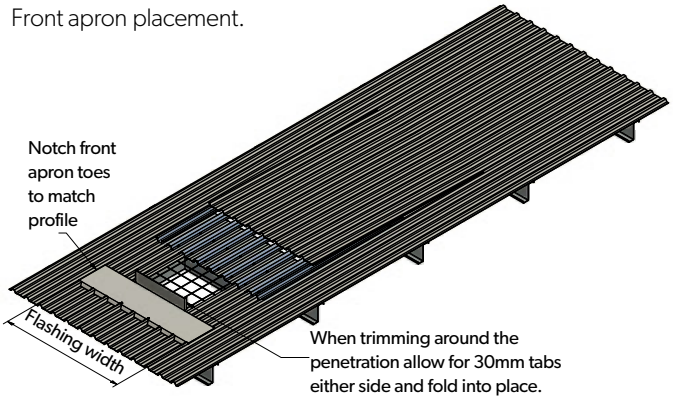


Figure 7.2

Front apron placement.



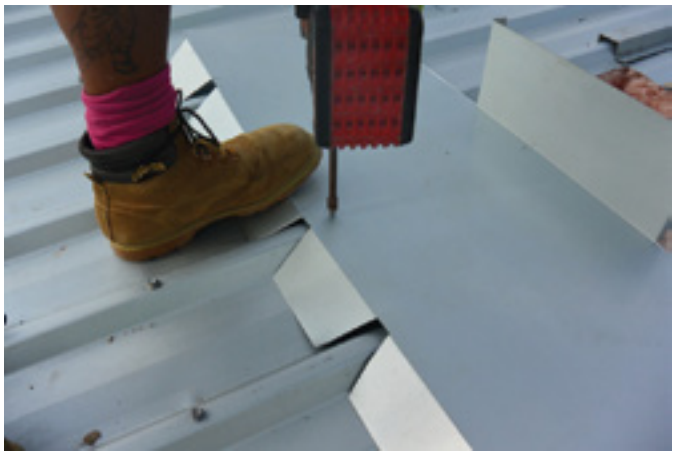
STEP 8:

Once the apron is cut to width, you will now need to turn the support tabs to support the side apron – 30mm minimum (as you would normally do on apron flashings around a penetration).

Temporarily fix the apron in place with two/M6 x 25 RoofZips® screws. NB. Position screws 40mm from the from edge of the apron flashing to align with later fitment of front diffuser towers.

Figure 8.1

Fix front apron.

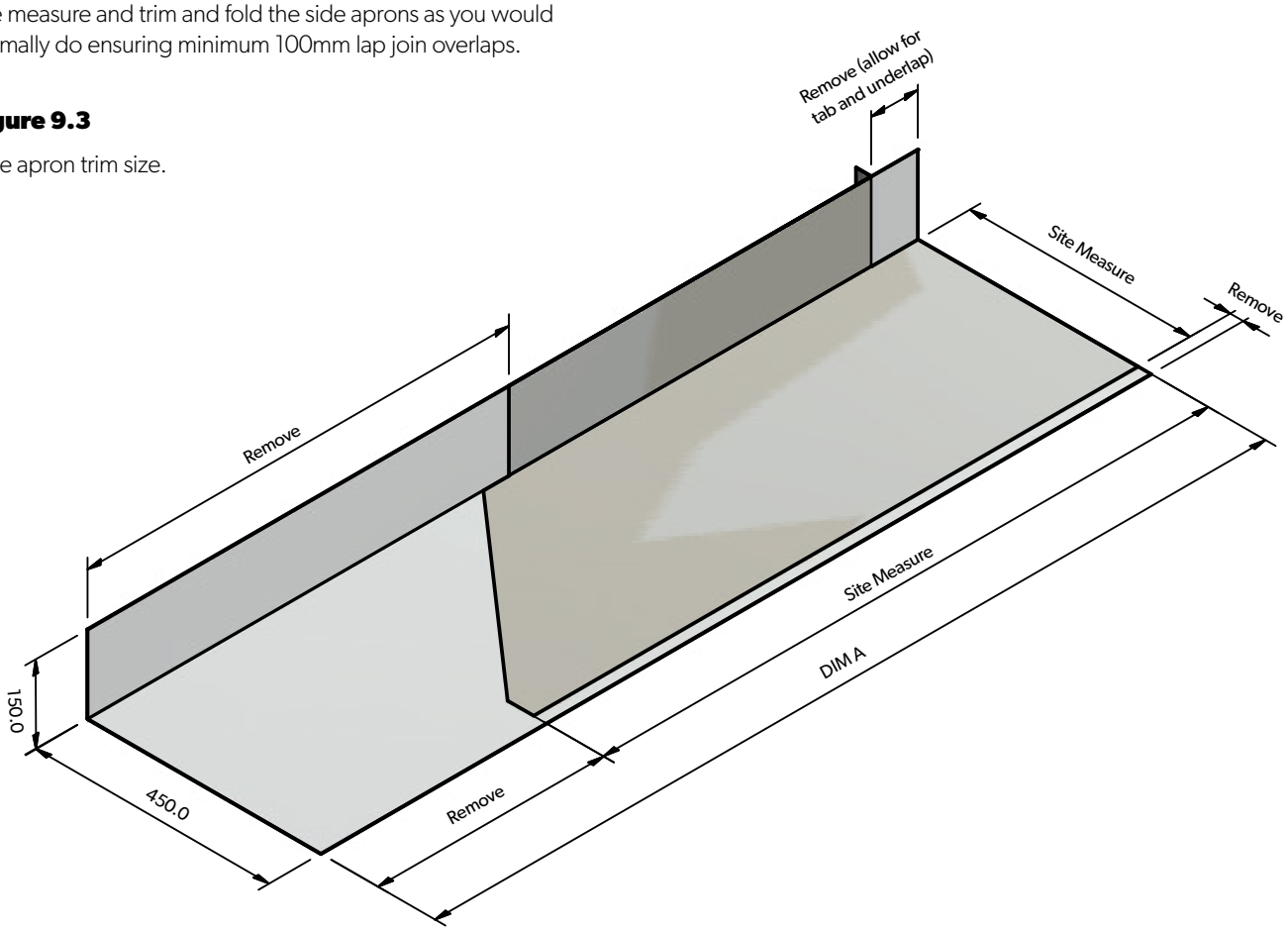


STEP 9:

Site measure and trim and fold the side aprons as you would normally do ensuring minimum 100mm lap join overlaps.

Figure 9.3

Side apron trim size.



STEP 10:

Trim side aprons back so they line up with the front apron and rear tray.

Apply neutral cure silicone as appropriate to all joins prior to screw fixing with M6 x 25 RoofZips® with seals. See Figure 10.1.

Figure 10.1

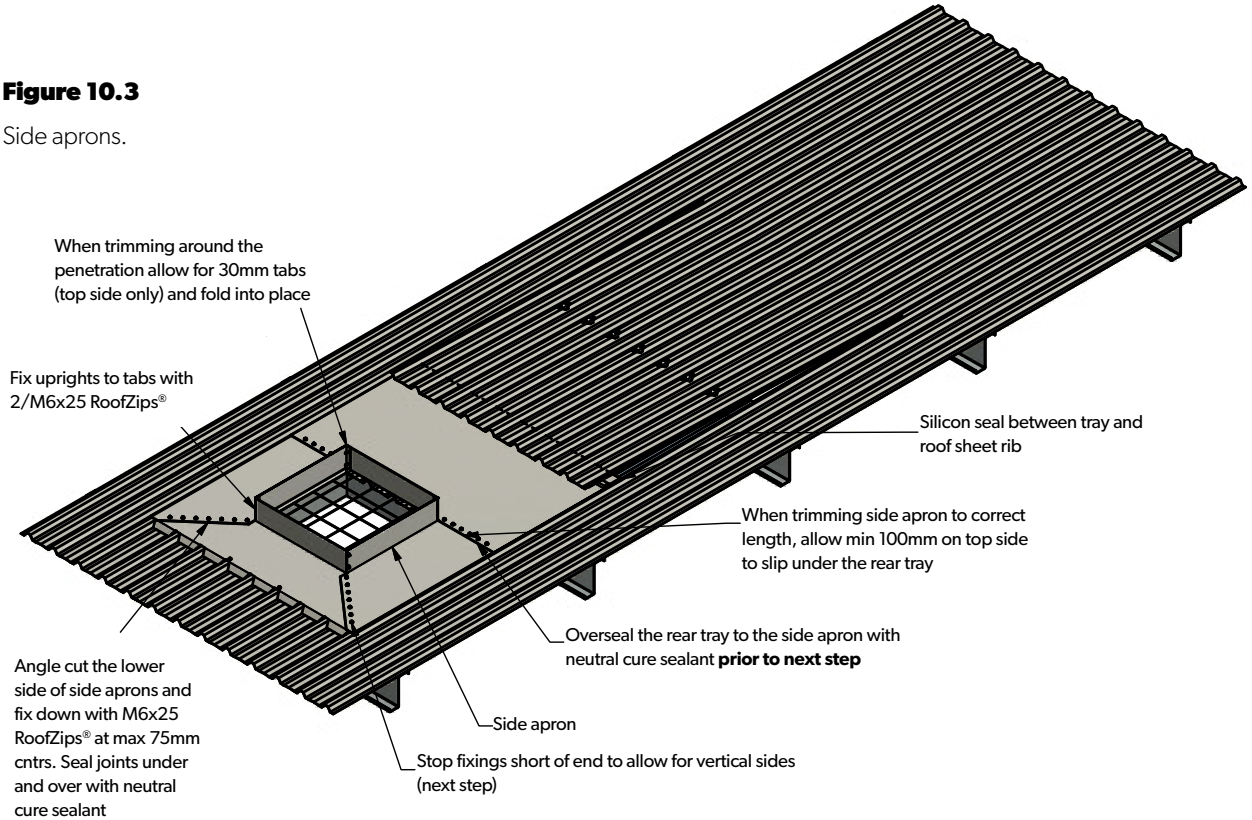
Seal overlaps.

Figure 10.2

Trim side aprons.

Figure 10.3

Side aprons.



STEP 11:

Install vertical sides – before you do this you will need to over seal the rear tray to the side apron as you will not be able to seal after this point.

Once you have sealed this, place the vertical side flashings, abutting the end of the vertical side flashing against the rear tray turn up as shown Figure 11.2.

Mark the length of the side at the front of the front apron flashing, cut to length then afix the 40mm x 3.2mm tape as shown in Figure 11.1 and then fix into position with M6 x 25mm RoofZips® at 200mm centres.

Once all the fixings are installed, seal the vertical side where it meets the rear tray under the roof sheet as shown in Figure 11.2.

Figure 11.1

Vertical side detail.

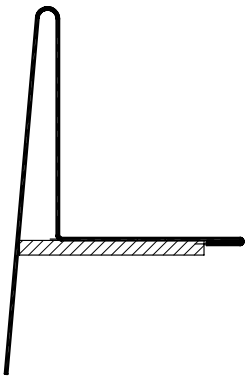


Figure 11.2

Sealing detail.

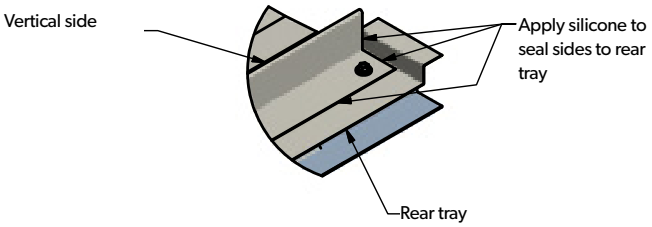
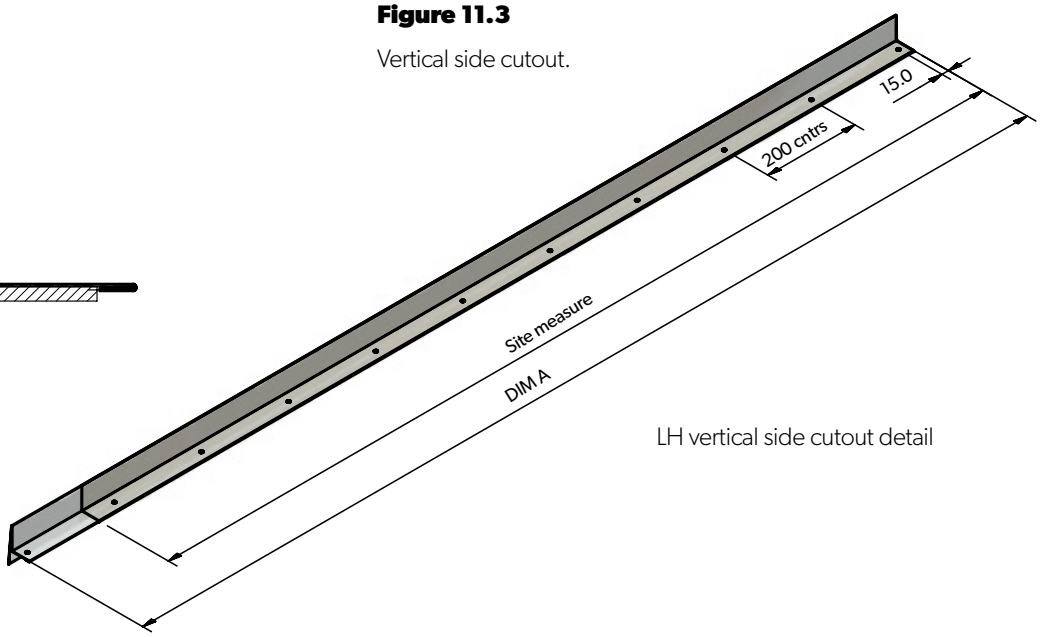


Figure 11.3

Vertical side cutout.



LH vertical side cutout detail

STEP 12:

Install infill strip to the raised batten section of rear tray – this can be completed in two ways.

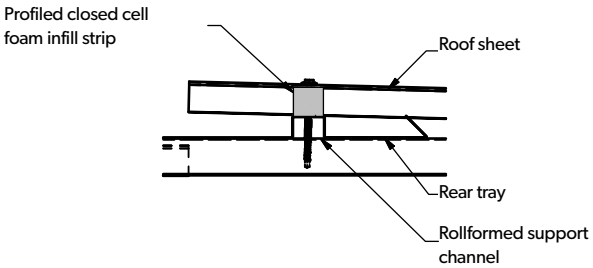
You can either use double sided tape to hold the infill strip in place (this will need to be done at this point) or it can be installed after the upper sheets have been screwed off (please note you will need to leave the bottom line of screws out to do this).

Simply slip the infill strip into place before inserting the 110mm long screws into the bottom line.

This is a very important part of the kit as it reduces the volume of water that can get into the flood tray, as well as stopping vermin accessing or living in this space.

Figure 12.1

Sealing detail.



STEP 13:

Install tapered side barges – place barge in position and come in 30mm from the high end with a bead of silicone. See Figure 13.1.

Carefully place back down and fix off using one x 25mm RoofZips®, then using 110mm long fixings, finish screwing the side barges off through to purlins. See Figure 13.2.

Once both tapered side barges are installed, screw off the rest of the upper sheets using 110mm screws and caps, as per Figure 13.3 through the original sheet holes.

The lower edge of the sheets should also be rib screw fixed utilising 50 – 65mm long RoofZips® as appropriate, to the batten shaped section of the rear flashing tray. See Figure 13.4.

Figure 13.1

Sealing Detail.

Figure 13.2

Sealing detail.

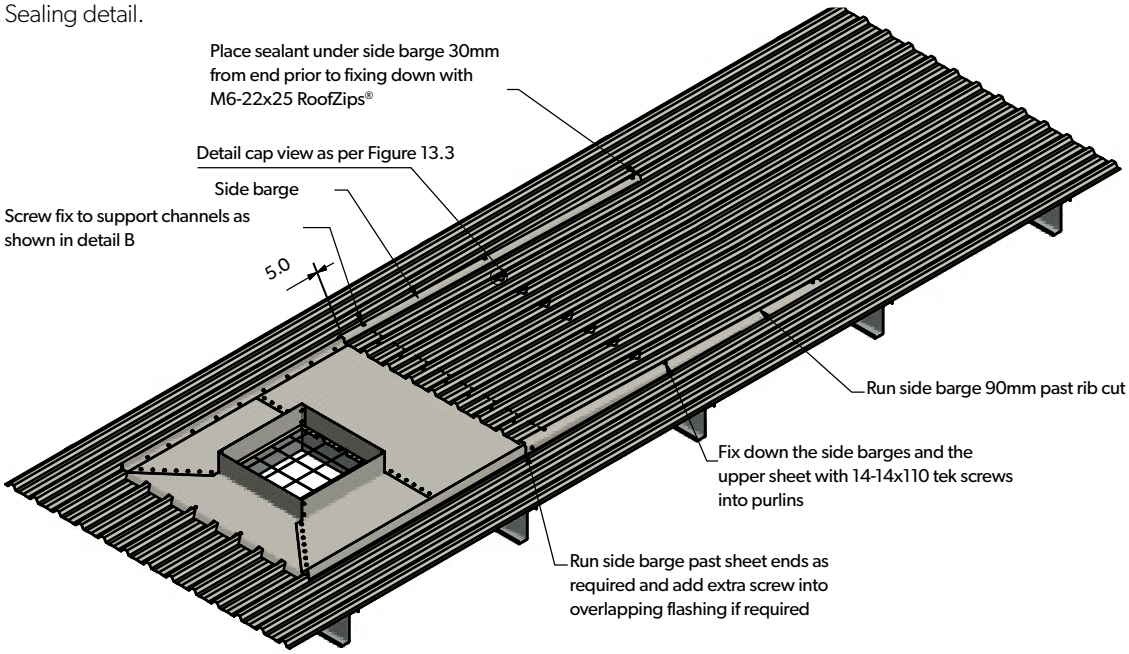


Figure 13.3

Sealing detail.

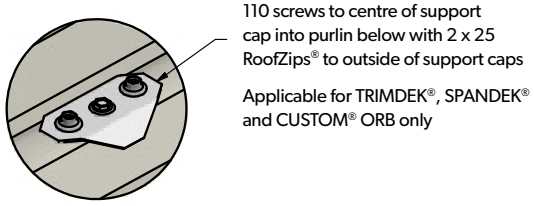
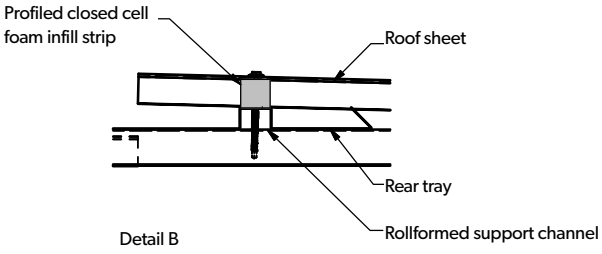


Figure 13.4

Sealing detail.



STEP 14:

Install front diffuser towers- remove the temporary screws to the front apron and simply slide the front diffuser tower under the front apron until it stops, then using a 25mm RoofZips® fix into every rib 40mm above the front apron.

Figure 14.1

Front diffuser tower fixing placement.

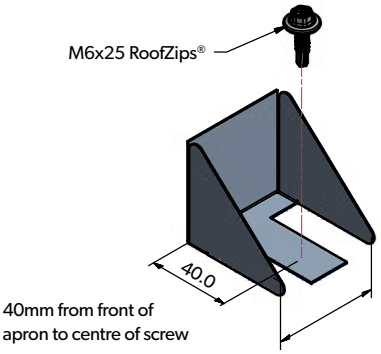
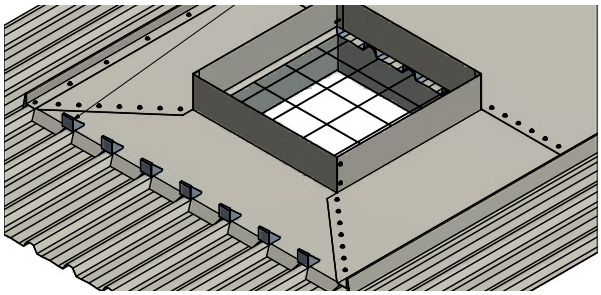


Figure 14.2

Front diffuser tower placements.



STEP 15

Install front diffuser - Trim the front diffuser to the front apron length and notch around the sheeting profile.
Slide the diffuser over the front diffuser towers as shown in Figure 15.2
Fix the front diffuser to three of the diffuser towers with rivets.

Figure 15.2

Slide front diffuser over diffuser towers.

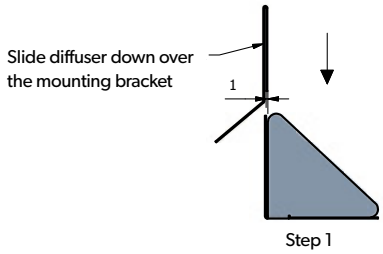
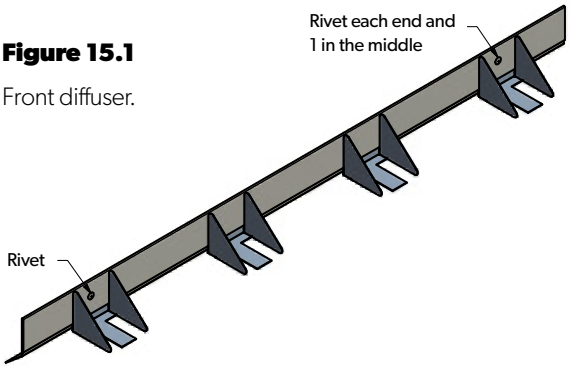


Figure 15.1

Front diffuser.

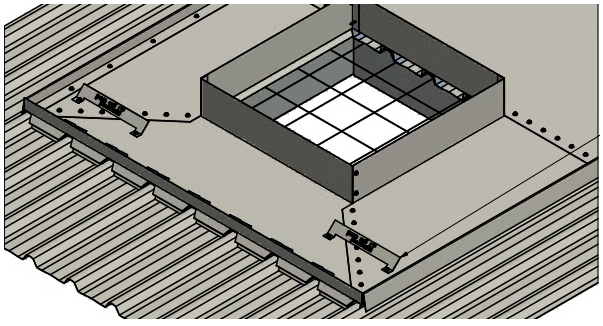


STEP 16:

Install side diffuser – fix the side diffusers approximately 40mm from the vertical sides and approximately 200mm from the front diffuser. Silicone underneath and use 25mm RoofZips® to fix into position.

Figure 16.1

Side diffusers.



STEP 17:

Clean down and over seal – remove excess debris and swarf as per manufacturers recommendation and over seal with silicone where necessary.

NOTES

PRODUCT DESCRIPTIONS

- All descriptions, specifications, illustrations, drawings, data, dimensions, and weights contained in this publication and websites containing information from Lysaght are approximations only. They are intended by Lysaght to be a general description for information and identification purposes and do not create a sale by description. Lysaght reserves the right at any time to:

  a) Supply goods with such minor modifications from its drawings and specifications as it sees fit, and

  b) Alter specifications shown in its publications and websites to reflect changes made after the date of publication.

DISCLAIMER, WARRANTIES AND LIMITATIONS OF LIABILITY

- This publication is intended to be an aid for all trades and professionals involved with specifying and installing LYSAGHT® products and not be a substitute for professional judgement.
- Terms and conditions of sale are available at lysaght.com/terms
- Except to the extent to which liability may not lawfully be excluded or limited, BlueScope Steel Limited will not be under or incur any liability to you for any direct or indirect loss or damage (including, without limitation, consequential loss or damage such as loss of profit or anticipated profit, loss of use, damage to goodwill and loss due to delay) however caused (including, without limitation, breach of contract, negligence and/or breach of statute), which you may suffer or incur in connection with this publication.

LYT0176 - 03/2023

FOR DETAILED PRODUCT INFORMATION, MANUALS AND PROJECT CASE STUDIES VISIT:

WWW.LYSAGHT.COM

LYSAGHT | A division of BlueScope

INSPIRATION TO BUILD BETTER