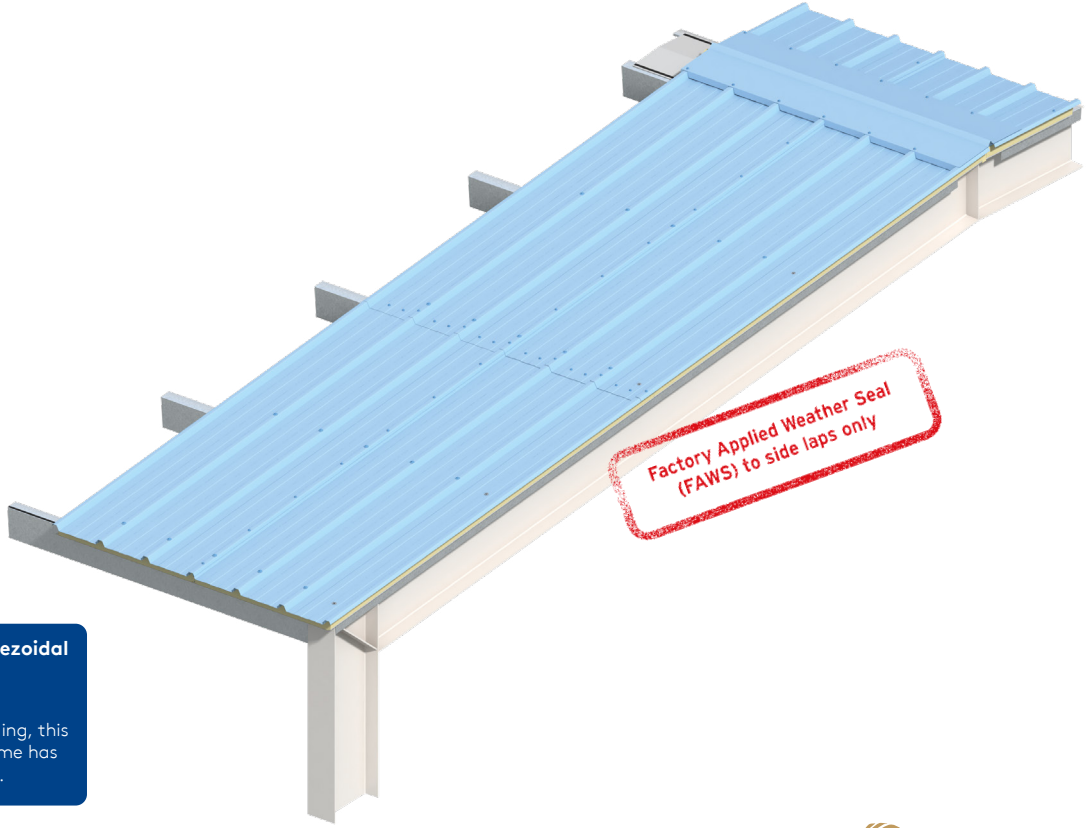
Kingspan Insulated Panels
Australia

K-PIR™ Roof Panel Installation Guide

Multiple Panels Eaves to Ridge
200mm End Lap



Formerly known as KS1000RW Trapezoidal Roof Panel

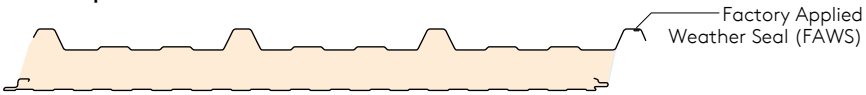
Why the change?
As part of our new K-PIR™ product branding, this product has been renamed. Only the name has changed, the product remains the same.

K-PIR™

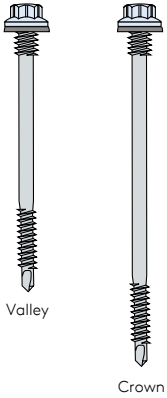
Kingspan

Fourth Issue | 06/08/2026

Components: K-PIR™ Roof Panel
External profile: Trapezoidal
Internal profile: Rib25



Primary / main fastener with min. 19mm dia washer
(Carbon Steel)
(Not by Kingspan)



Secondary / stitching screws with min. 14mm dia washer
(Carbon Steel)
(Not by Kingspan)



Fire-rated canister insulation
(Not by Kingspan)



Neutral cure gun-grade sealant
(Not by Kingspan)



Butyl sealant tape
(Code: SEXT)



Profiled ridge filler - (Code: 3RWFILL)



Cordless drill



Although this 'installation guide' is deemed to be correct at the time of publication, Kingspan reserve the right to amend the information at any time in the future.

Important Installation Notes

Reference Documents and Scope

- This guide provides general installation guidance and must be used in conjunction with project-specific construction drawings, specifications, and method statements.
- While this is the standard installation guide for K-PIR™ Roof Panel, project specific detailing always takes precedence. Confirm all details against approved project documentation.

1. Substrate Preparation and Pre-Installation Checks

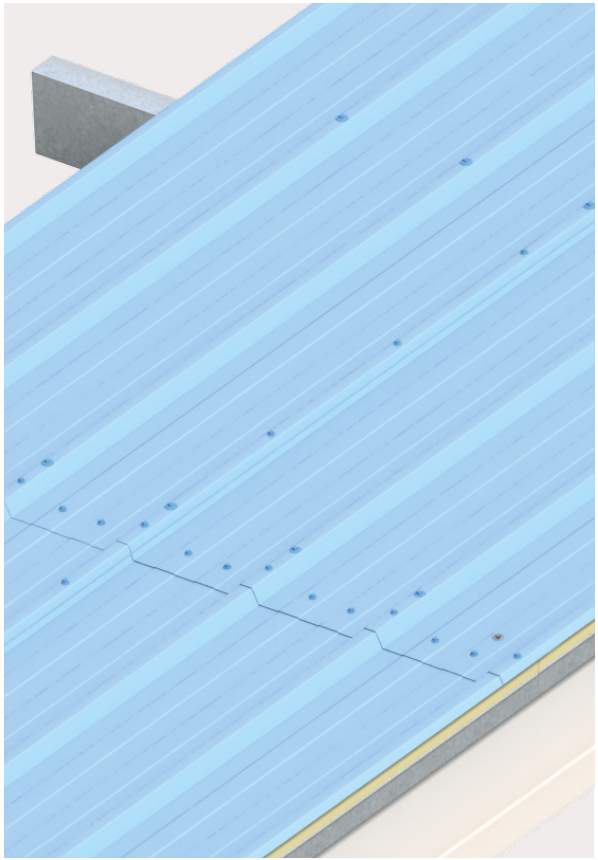
- Ensure all **steelwork is correctly aligned, levelled, and within tolerance** before panel installation begins.
- Do not proceed with installation if structural alignment issues are identified.
- The end lap position is critical, check location and straightness.

2. Fasteners and Fixings

- Use only minimum **Class 4 carbon steel primary fasteners**. Confirm suitability of thread type and drill tip for the structural material. Refer to fastener supplier/ manufacturers information, seeking guidance from them directly if required.
- Fastener quantity must be determined by the project engineer based on span and loads.
- Note that the **wind loads must be confirmed by the project engineer** as Kingspan is not responsible for the wind analysis.
- Set all fasteners using **manufacturer-recommended drill speed and torque**, with the correct socket and drive bit. Use a **depth-limiting nose piece** where applicable.
- Remove all **swarf immediate**ly during drilling to prevent corrosion and surface damage.

3. Sealants and Joint Integrity

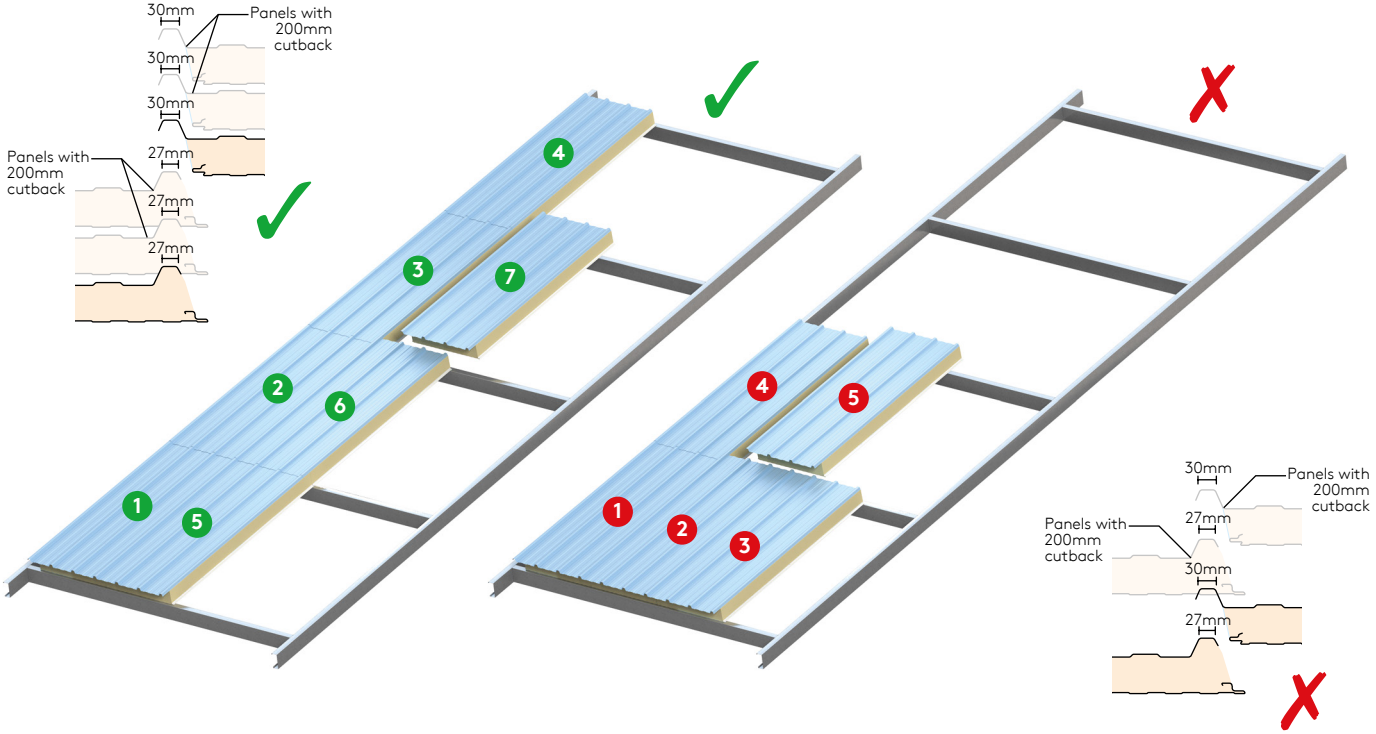
- Apply neutral-cure, gun-grade sealant to all specified locations unless otherwise directed.
- Confirm that all sealants are compatible with project-specific environmental and durability requirements.
- 6x4mm butyl sealant or neutral cure gun-grade butyl sealant must be applied to ridge, verge and eave positions to provide a perimeter air seal.
- 3no runs of 6x4mm butyl sealant tape must be applied to all end laps to provide a weather seal.
- Colours of sealants in installation guide diagrams are for illustrative purposes only. Colours of sealants may vary.



Important Installation Notes

4. Installation Sequence

- If there are panel end laps then the panels must be installed in a tiered sequence only.
- The panels are ordered with either 'Right to Left' or 'Left to Right' installation.
- Kingspan does not recommend 'back-laying' of the panels.



5. Panel Engagement and Alignment

- Ensure panels are installed perpendicular to gutter.
- The lower panel at end lap location to have minimum 50mm bearing onto the purlin.
- Pull joints tight and fully engage each panel to ensure correct alignment.
- Ensure insulation to insulation contact is achieved at all panel joints.
- Maintain tight panel-to-panel joint compression during installation to ensure joint integrity and air-tightness.

6. Handling, Protection, and Site Practices

- Use mechanical lifting equipment for panel movement and placement. Manual lifting or improvised handling methods are not permitted.
- Remove all protective film from the external weather face and internal liner prior to installation.
- Sheets can be turned up at the ridge location.
- Penetrations larger than 300mm x 300mm must be framed out with structural steel.

Technical Support and Project-Specific Guidance

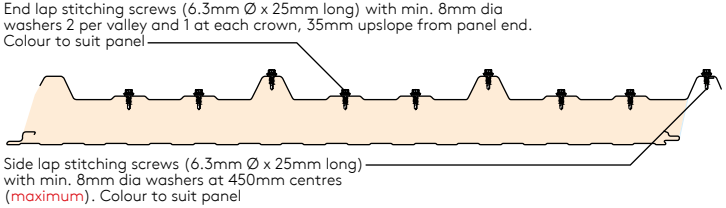
For non-standard conditions or if clarification is required, contact Kingspan Technical Services. This includes, but is not limited to:

- Internal air sealing strategies
- High-humidity or hygiene-sensitive internal environments
- Project-specific installation details or deviations from standard methods
- Kingspan Technical Services can provide tailored advice to ensure compliance, durability, and correct system performance.

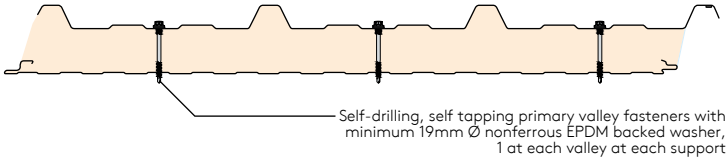
Fastener Locations

Fastener Layouts

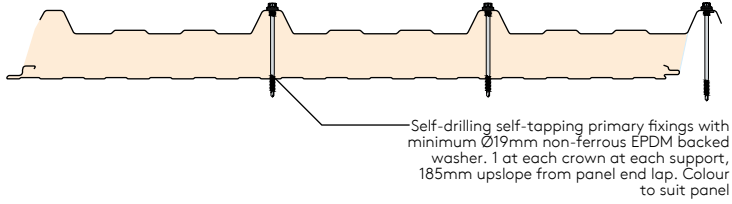
End / Side Lap



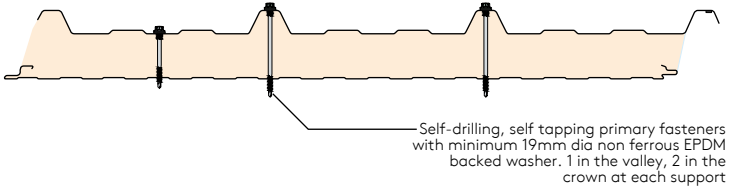
Ridge



Standard Intermediate, Eaves, Ridge & Side Lap



Verge



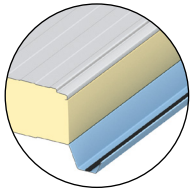
Note: Minimum number of fasteners as illustrated.
Number of fasteners must be calculated on the project specific spans and wind loads.

Steps 1 to 2

This section outlines the standard installation steps for the K-PIR™ Roof Panel that need to be followed in order. Additional steps, detailing, sealants, fixings etc. may be required depending on project-specific requirements, load conditions, and/or environmental factors. Always refer to approved construction drawings and consult Kingspan Technical Support if in doubt.

SIDELAP
A Factory Applied Weather Seal (FAWS) is applied to the panels, on the under side of the sidelap, before they leave the factory.

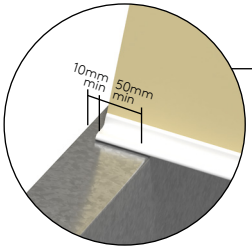
Sidelap rotated 180°



Internal ridge flashing with 150mm overlaps sealed with neutral cure gun-grade sealant

Internal ridge flashing

The K-PIR™ Roof Panel must bear a min of 50mm on the purlin



2

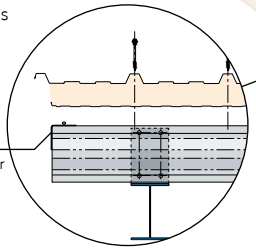
Position first panel (**P1**) with a minimum bearing of 50mm onto the purlin. Fix first panel (**P1**) with 2No. crown primary fasteners and 1No. primary valley fastener per purlin (minimum) at eaves & intermediate locations subject to wind loadings

1

Apply 6x4mm butyl sealant or neutral cure gun-grade sealant to provide perimeter air-seal

P1

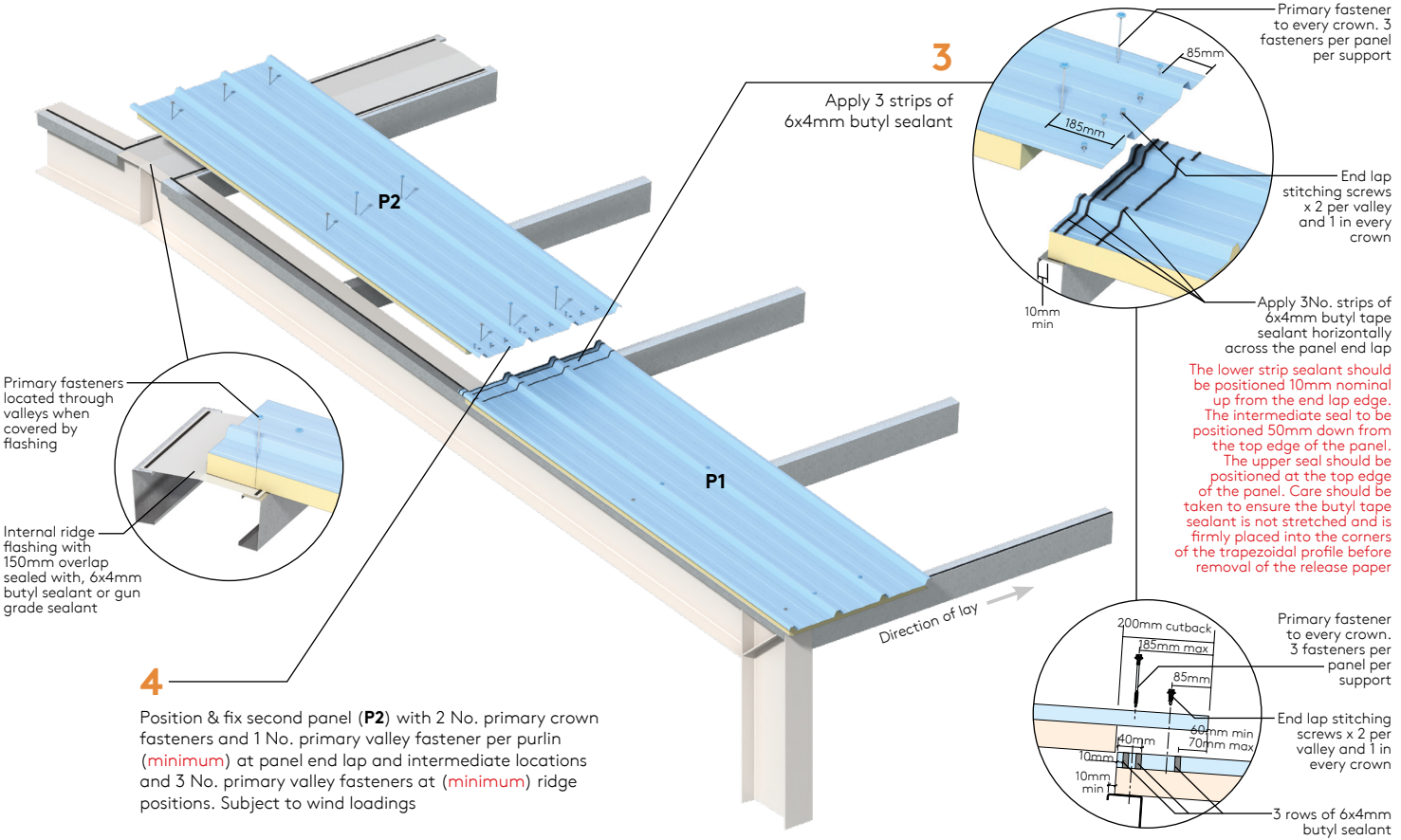
Direction of lay



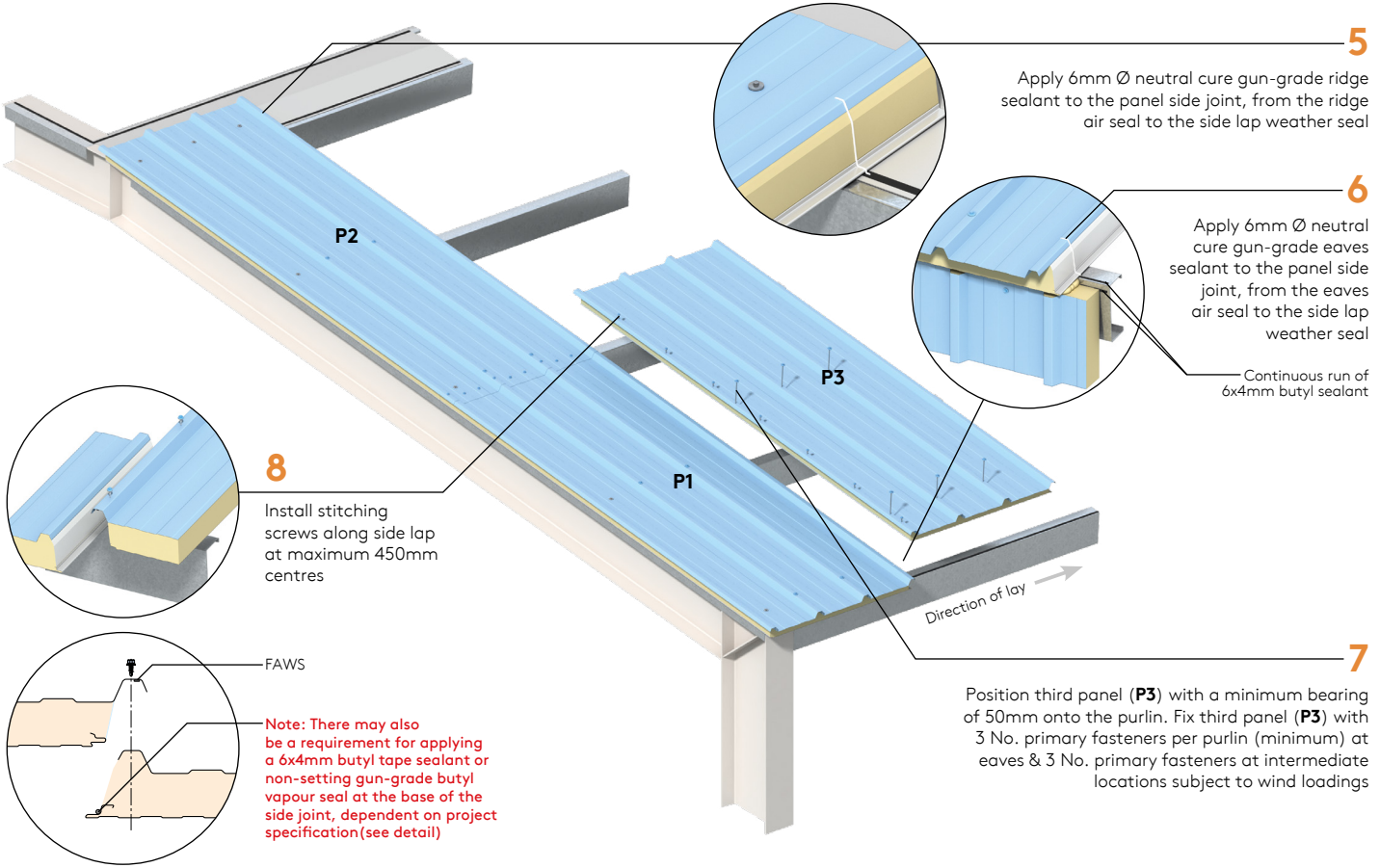
Cleader angle by steel sub-contractor

Note: this guide is for left handed panels. Right handed panels are also available

Steps 3 to 4


3
Apply 3 strips of 6x4mm butyl sealant
Primary fastener to every crown. 3 fasteners per panel per support
85mm
185mm
End lap stitching screws x 2 per valley and 1 in every crown
10mm min
Apply 3No. strips of 6x4mm butyl tape sealant horizontally across the panel end lap
The lower strip sealant should be positioned 10mm nominal up from the end lap edge. The intermediate seal to be positioned 50mm down from the top edge of the panel. The upper seal should be positioned at the top edge of the panel. Care should be taken to ensure the butyl tape sealant is not stretched and is firmly placed into the corners of the trapezoidal profile before removal of the release paper
P2
P1
Primary fasteners located through valleys when covered by flashing
Internal ridge flashing with 150mm overlap sealed with, 6x4mm butyl sealant or gun grade sealant
Direction of lay
200mm cutback
185mm max
85mm
Primary fastener to every crown. 3 fasteners per panel per support
End lap stitching screws x 2 per valley and 1 in every crown
60mm min
70mm max
40mm
10mm
10mm min
3 rows of 6x4mm butyl sealant
4
Position & fix second panel (P2) with 2 No. primary crown fasteners and 1 No. primary valley fastener per purlin (minimum) at panel end lap and intermediate locations and 3 No. primary valley fasteners at (minimum) ridge positions. Subject to wind loadings

Steps 5 to 8



5

Apply 6mm Ø neutral cure gun-grade ridge sealant to the panel side joint, from the ridge air seal to the side lap weather seal

6

Apply 6mm Ø neutral cure gun-grade eaves sealant to the panel side joint, from the eaves air seal to the side lap weather seal

Continuous run of 6x4mm butyl sealant

7

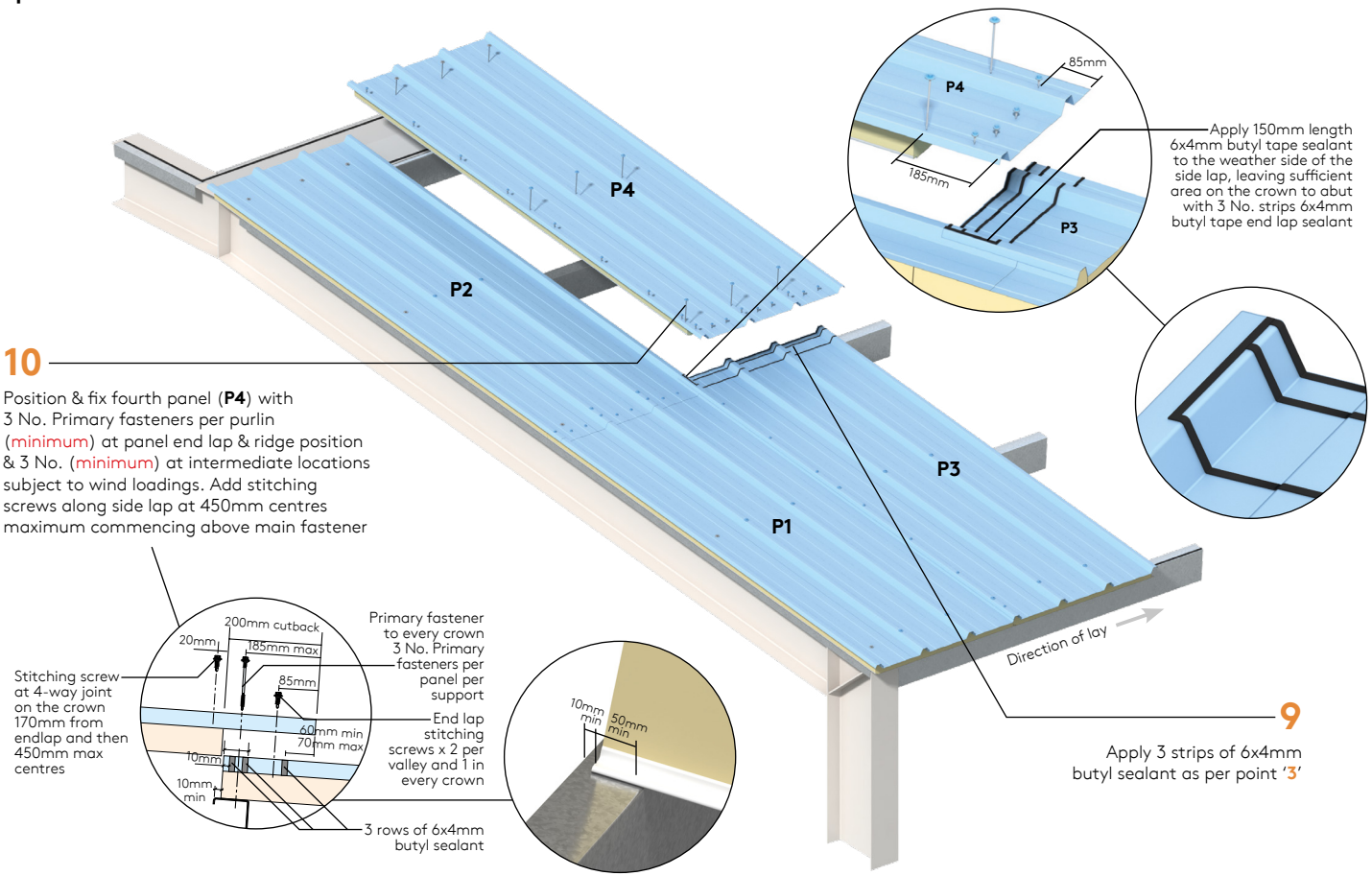
Position third panel (**P3**) with a minimum bearing of 50mm onto the purlin. Fix third panel (**P3**) with 3 No. primary fasteners per purlin (minimum) at eaves & 3 No. primary fasteners at intermediate locations subject to wind loadings

8

Install stitching screws along side lap at maximum 450mm centres

Note: There may also be a requirement for applying a 6x4mm butyl tape sealant or non-setting gun-grade butyl vapour seal at the base of the side joint, dependent on project specification(see detail)

Steps 9 to 10



10

Position & fix fourth panel (**P4**) with 3 No. Primary fasteners per purlin (minimum) at panel end lap & ridge position & 3 No. (minimum) at intermediate locations subject to wind loadings. Add stitching screws along side lap at 450mm centres maximum commencing above main fastener

Stitching screw at 4-way joint on the crown 170mm from endlap and then 450mm max centres

Primary fastener to every crown 3 No. Primary fasteners per panel per support

End lap stitching screws x 2 per valley and 1 in every crown

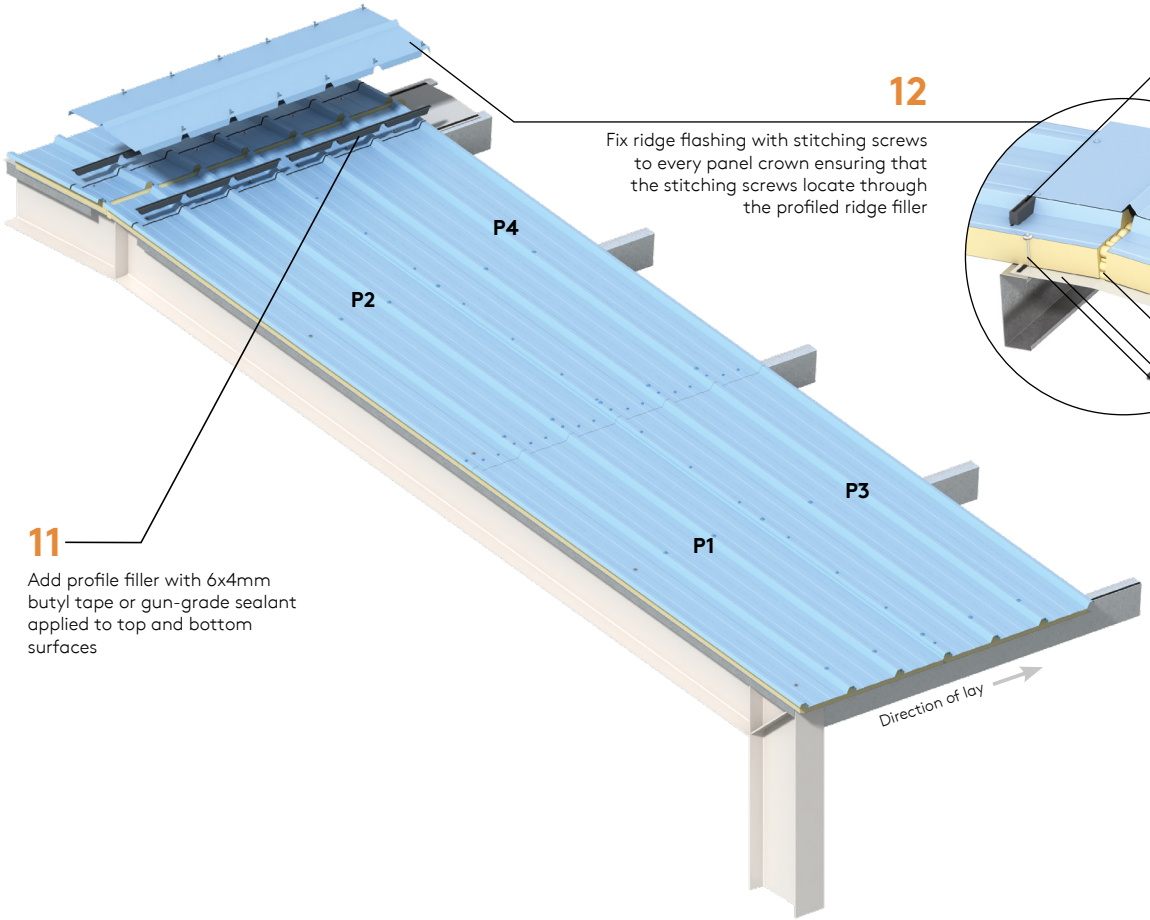
3 rows of 6x4mm butyl sealant

Apply 150mm length 6x4mm butyl tape sealant to the weather side of the side lap, leaving sufficient area on the crown to abut with 3 No. strips 6x4mm butyl tape end lap sealant

9

Apply 3 strips of 6x4mm butyl sealant as per point '3'

Steps 11 to 12



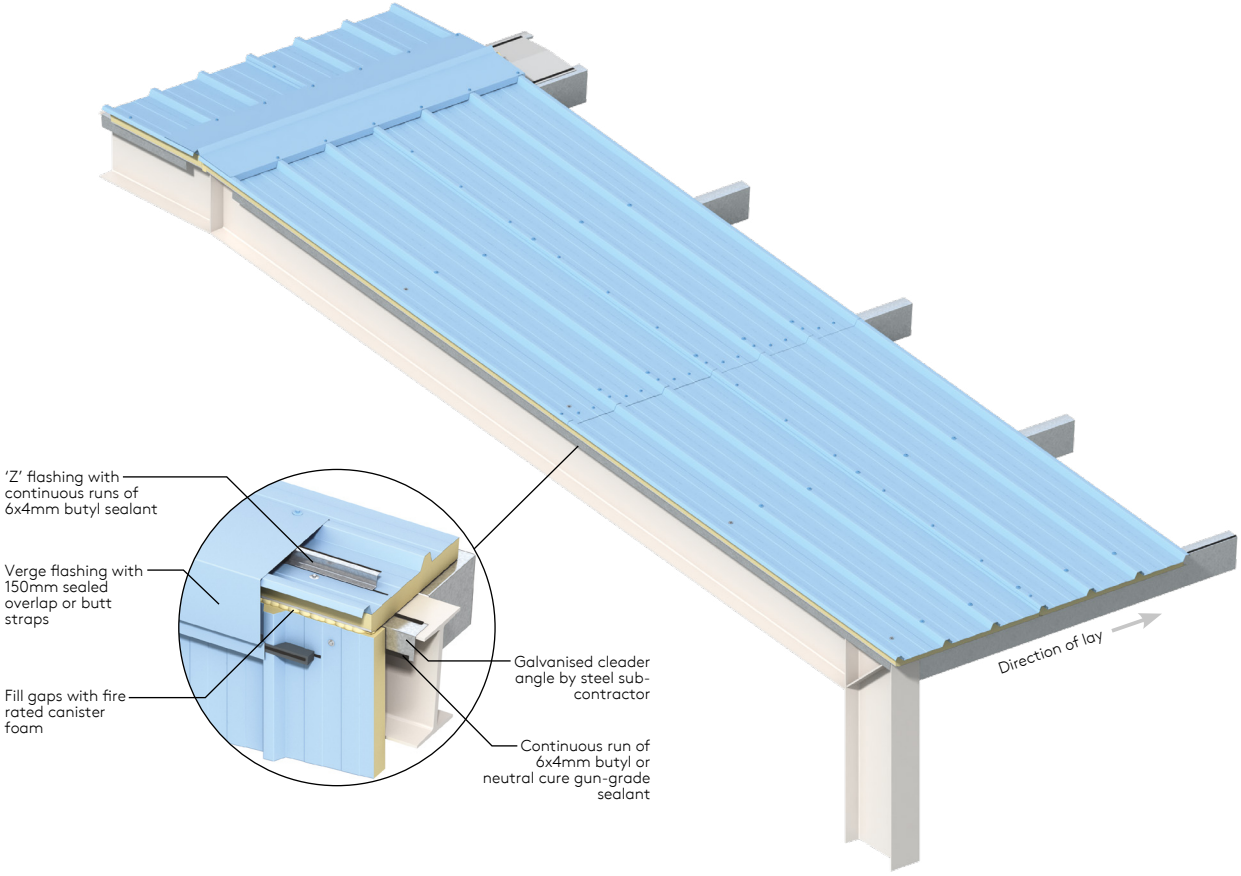
12

Fix ridge flashing with stitching screws to every panel crown ensuring that the stitching screws locate through the profiled ridge filler

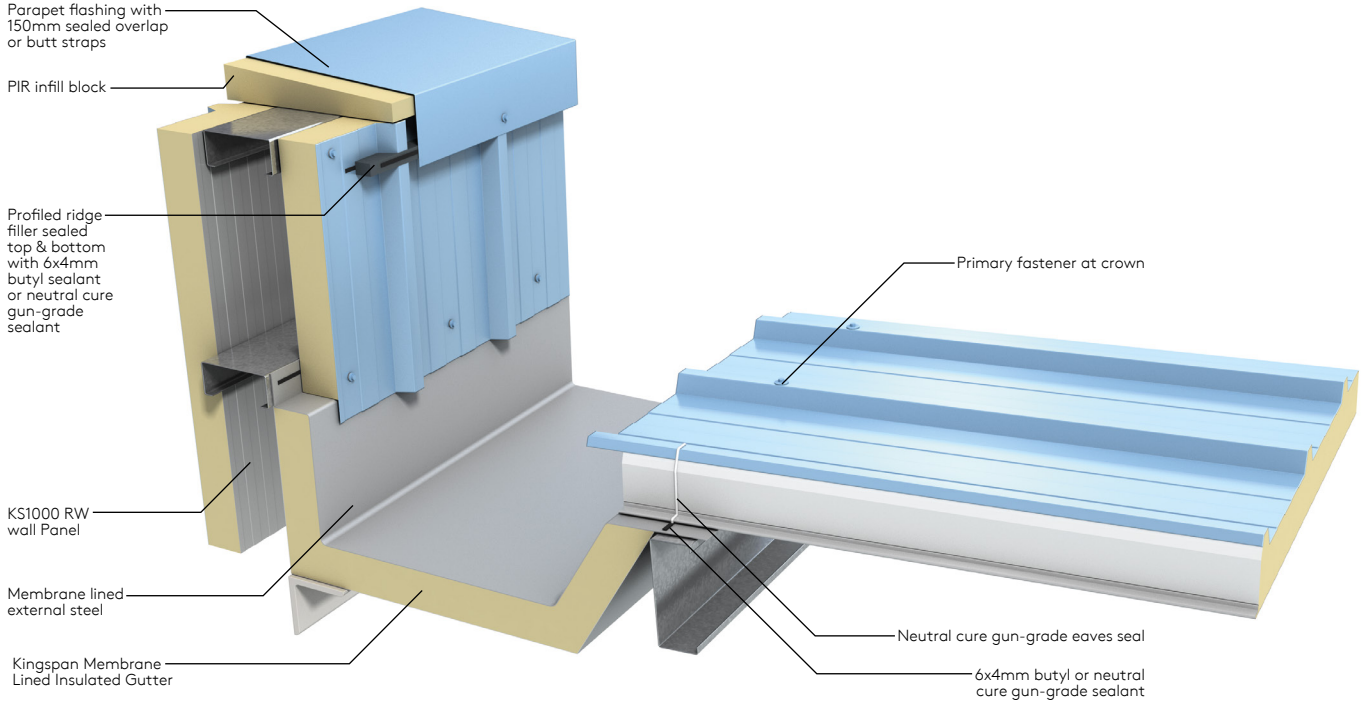
11

Add profile filler with 6x4mm butyl tape or gun-grade sealant applied to top and bottom surfaces

Roof to Gable End Transition



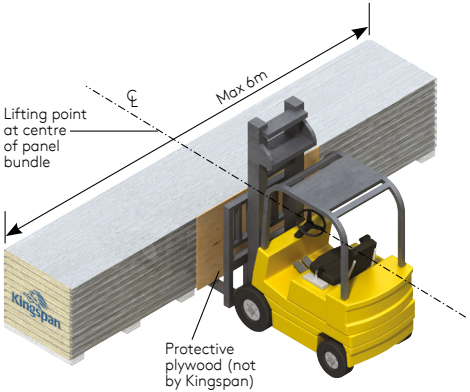
Roof to Boundary Wall Gutter



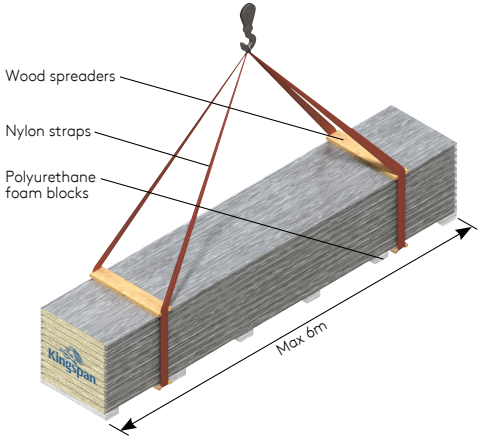
Panel Handling

Appropriate personnel protective equipment should always be worn to avoid cuts and abrasions to installers and panels.
Individual panels should always be lifted from a pack and not dragged over others.
The weight of individual panels for lifting can be determined from the information on the packing slip.
For larger panels the contractor would normally arrange to use appropriate material installation equipment to help lift the panels into position.

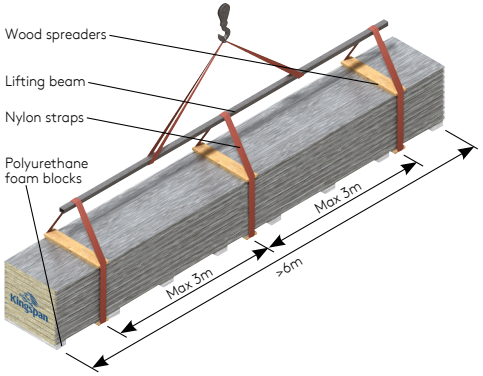
Protecting Film
When panels are supplied with a plastic protective film this should be removed during site installation.



The recommended loading / unloading method for bundles less than or equal to 6m is to use a single forklift with widely spaced forks placed under the centre of the bundle as shown.



The recommended lifting method for bundles no more than or equal to 6m can be handled with a crane by using nylon straps and wood spreaders as shown.

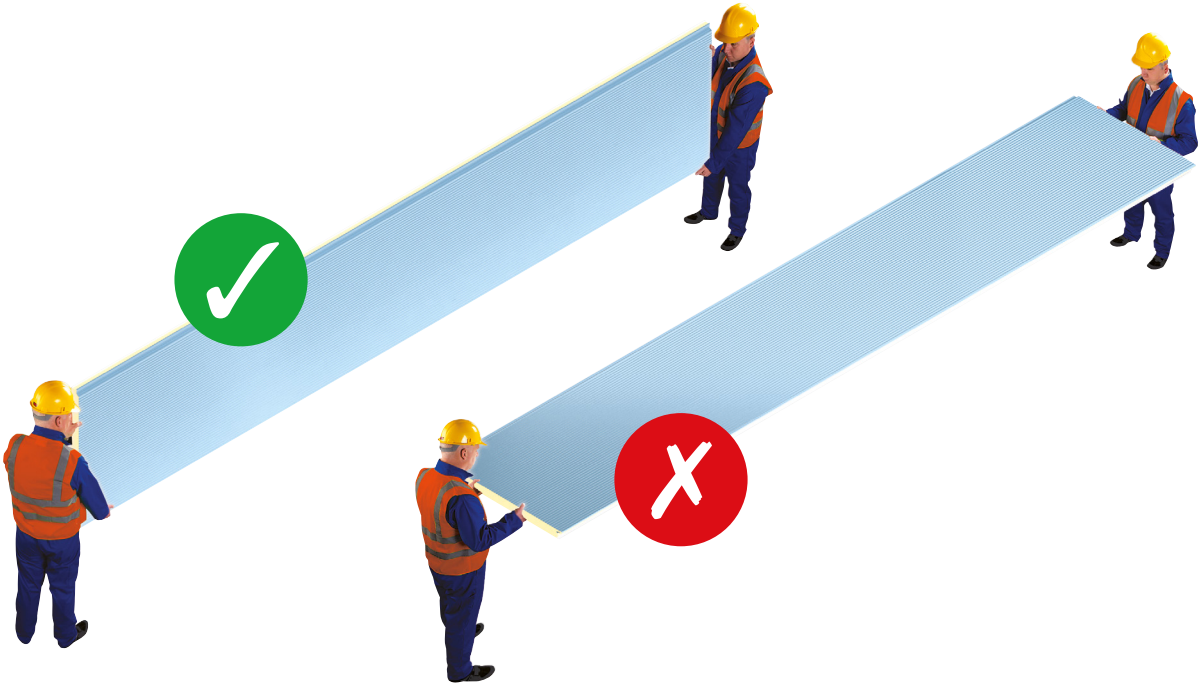


The recommended lifting method for bundles more than 6m, by crane, is by using three points of support. To prevent damage from nylon straps, use wood spreaders at top and bottom at lifting locations as shown.

For illustration purposes only

Caution

Individual panels should never be moved in a flat position as excessive flexing may result. Excessive flexing ruptures a panel's core, permanently distorts the facings and may lead to thermal blistering. When moving a panel, it must be turned on its edge first, then supported at each end with as many men as necessary to safely handle.



Installation guides are available for most of Kingspan insulated roof and wall panels. For the most up to date version of this Installation guide please click here or scan the QR code below. Alternatively, please call Kingspan on:

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www.kingspanpanels.com.au

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