Kingspan Insulated Panels
Australia

# K-PIR™ Roof Panel Installation Guide

Multiple Panels Eaves to Ridge 75mm End Lap




**Formerly known as KS1000RW Trapezoidal Roof Panel**

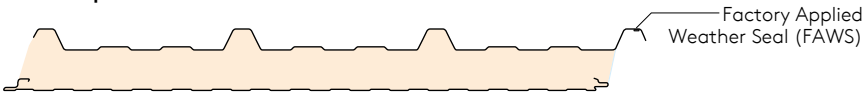
**Why the change?**
As part of our new K-PIR™ product branding, this product has been renamed. Only the name has changed, the product remains the same.

K-PIR™

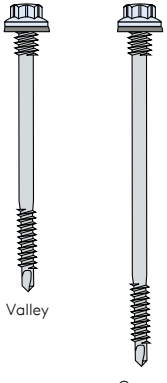
Kingspan®

Third Issue | 23/09/2026

**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)



**Storm washer**
(Code: STORM_WASHER)




**Butyl sealant tape**
(Code: SEXT)




**Profiled ridge filler** - (Code: 3RWFILL)



**Cordless drill**




**Butyl co-laminate sealant tape**
(Code: ROBENDLAPSEAL)

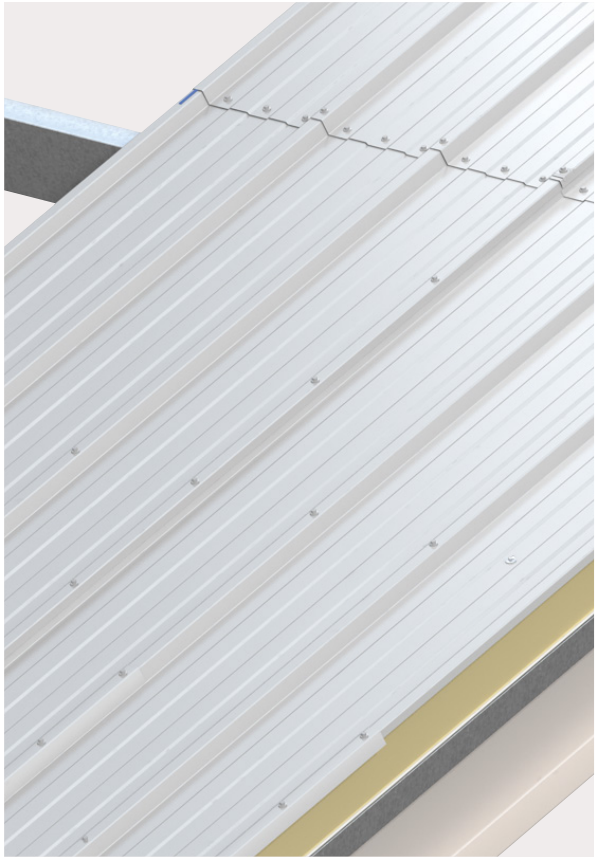



Although this 'installation guide' is deemed to be correct at the time of publication, Kingspan reserve the right to amend the information at any time in the future.

# 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.

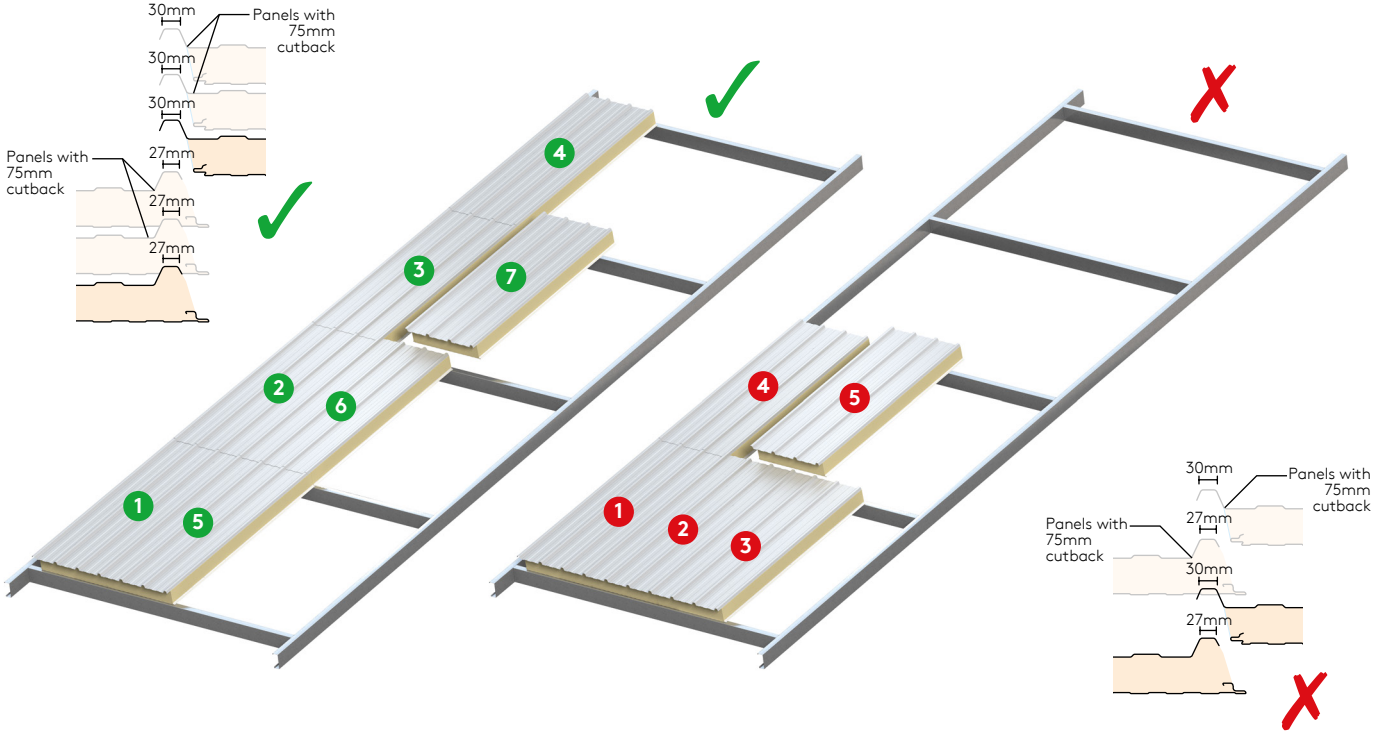
## 3. Sealants and Joint Integrity

- 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.
- 50x6mm butyl co-laminate 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**

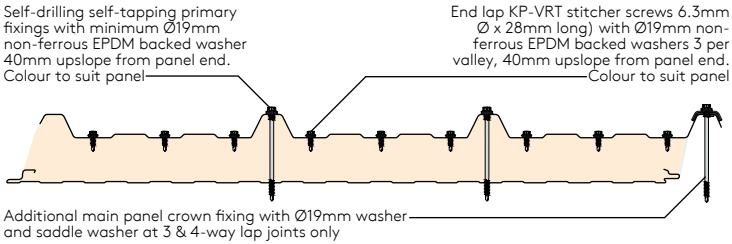
For non-standard conditions or if clarification is required, contact Kingspan Technical Services. This includes, but is not limited to:

- 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.

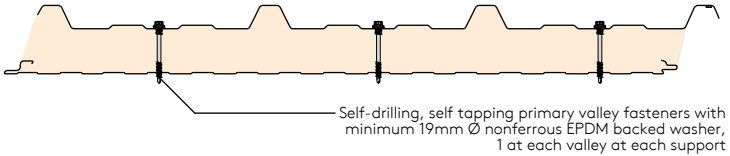
# Fastener Locations

## Fastener Layouts

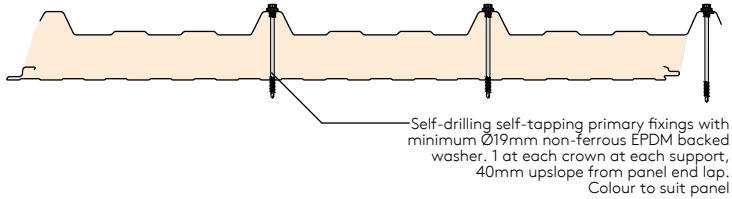
### End / Side Lap



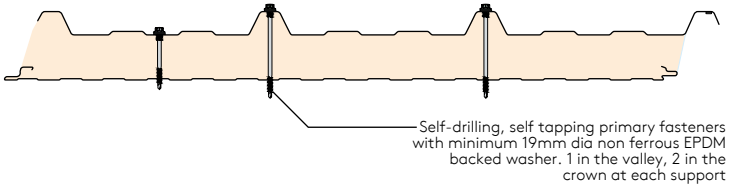

### Ridge




### Standard Intermediate, Eaves, Ridge & Side Lap



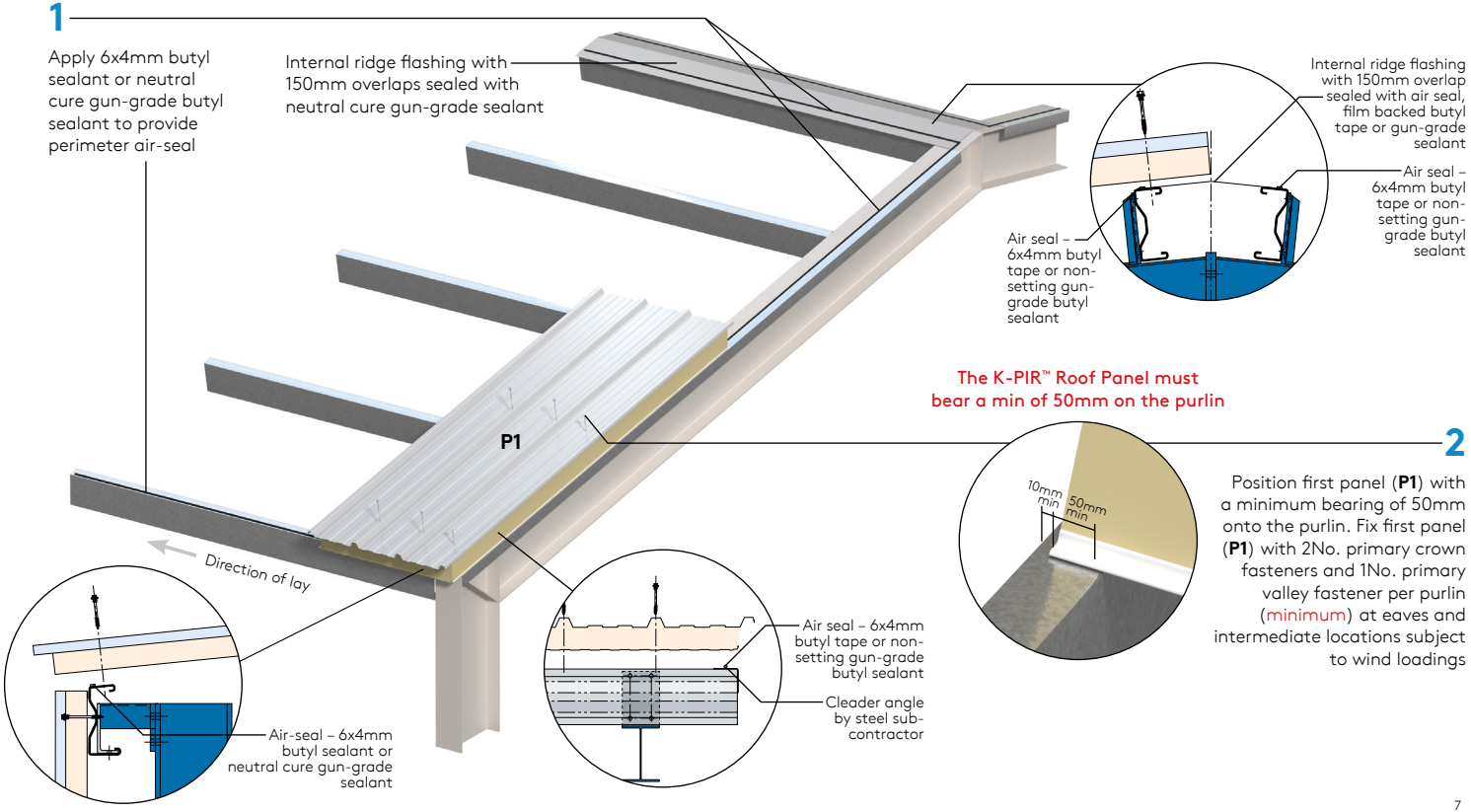

### Verge



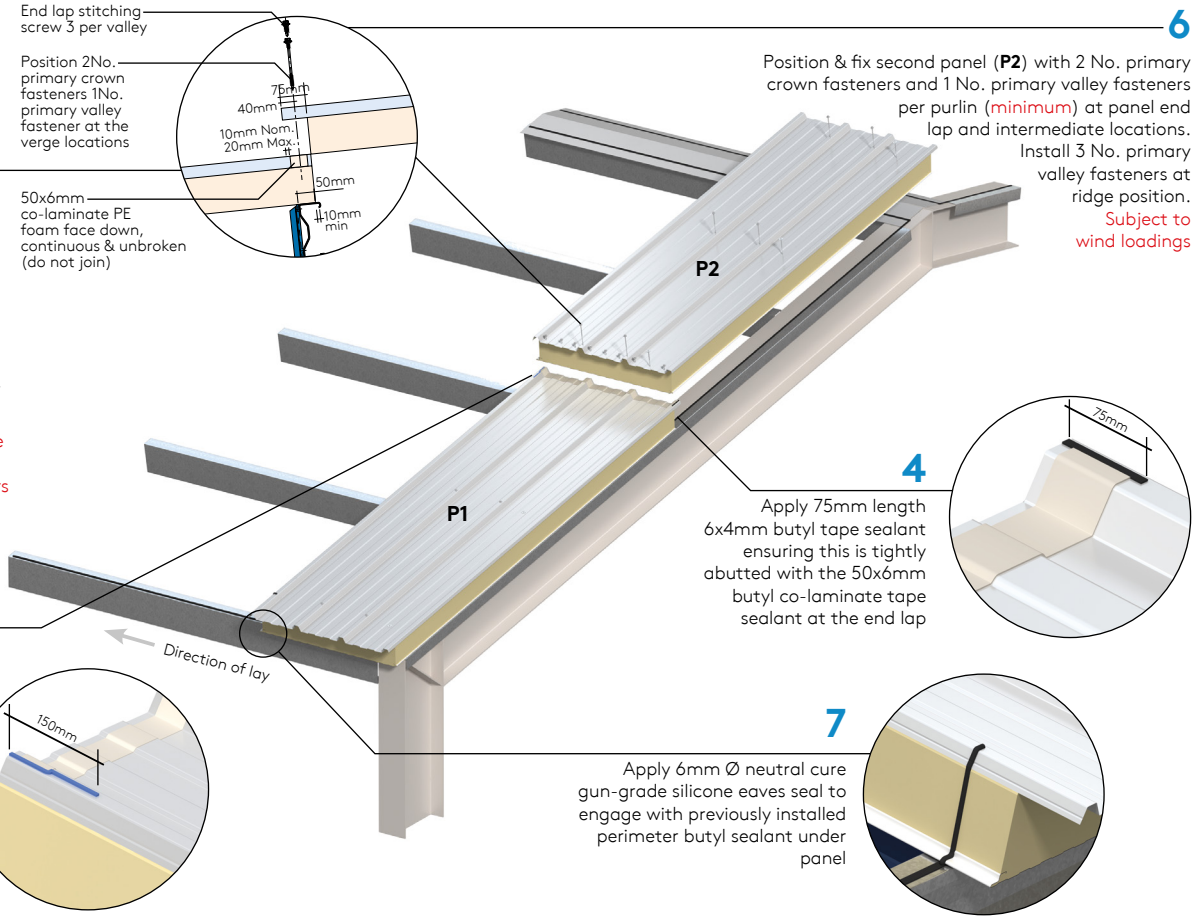

Note: Minimum number of fasteners as illustrated.
Number of fasteners must be calculated on the project specific spans and wind loads.

## 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.



## Steps 3 to 7




**3**

Apply 1 strip of 50x6mm co-laminate butyl tape sealant horizontally across the end lap. The strip sealant should be positioned 10mm nominal up from the end lap edge and should commence / terminate either end leaving sufficient area to apply a 6x4mm butyl tape sealant in order to complete the end lap detail.

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

**5**

Apply 150mm length of 6x4mm butyl tape sealant formed to end of 50x6mm butyl co-laminate tape sealant onto the weatherside of the crown profile on (**P1**) as illustrated.

Ensure this is tightly abutted with the 50x6mm butyl co-laminate tape sealant

**6**

Position & fix second panel (**P2**) with 2 No. primary crown fasteners and 1 No. primary valley fasteners per purlin (minimum) at panel end lap and intermediate locations. Install 3 No. primary valley fasteners at ridge position.

Subject to wind loadings

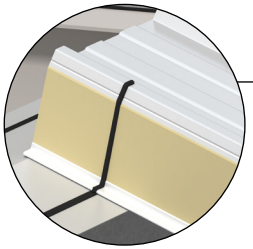
**4**

Apply 75mm length 6x4mm butyl tape sealant ensuring this is tightly abutted with the 50x6mm butyl co-laminate tape sealant at the end lap

**7**

Apply 6mm Ø neutral cure gun-grade silicone eaves seal to engage with previously installed perimeter butyl sealant under panel

## Steps 8 to 11



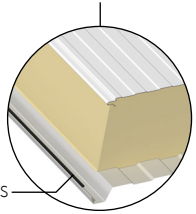
**8**

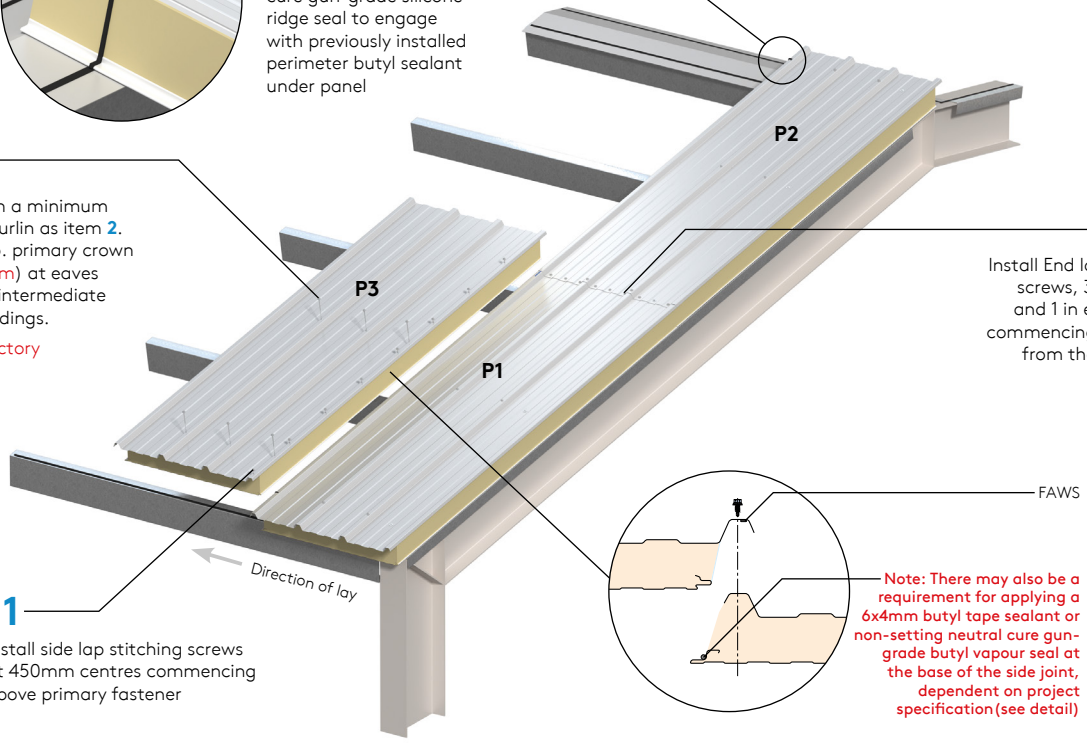
Apply 6mm Ø neutral cure gun-grade silicone ridge seal to engage with previously installed perimeter butyl sealant under panel

**10**

Position third panel (**P3**) with a minimum bearing of 50mm onto the purlin as item **2**. Fix third panel (**P3**) with 3No. primary crown fasteners per purlin (minimum) at eaves & 3No. primary fasteners at intermediate locations subject to wind loadings.

Panel sidelap with FAWS (Factory Applied Weather Seal)




**9**

Install End lap stitching screws, 3 per valley, and 1 in every crown commencing 40mm up from the panel end

**11**

Install side lap stitching screws at 450mm centres commencing above primary fastener




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

## Steps 12 to 14

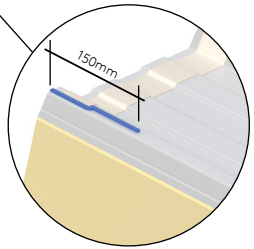
**12**

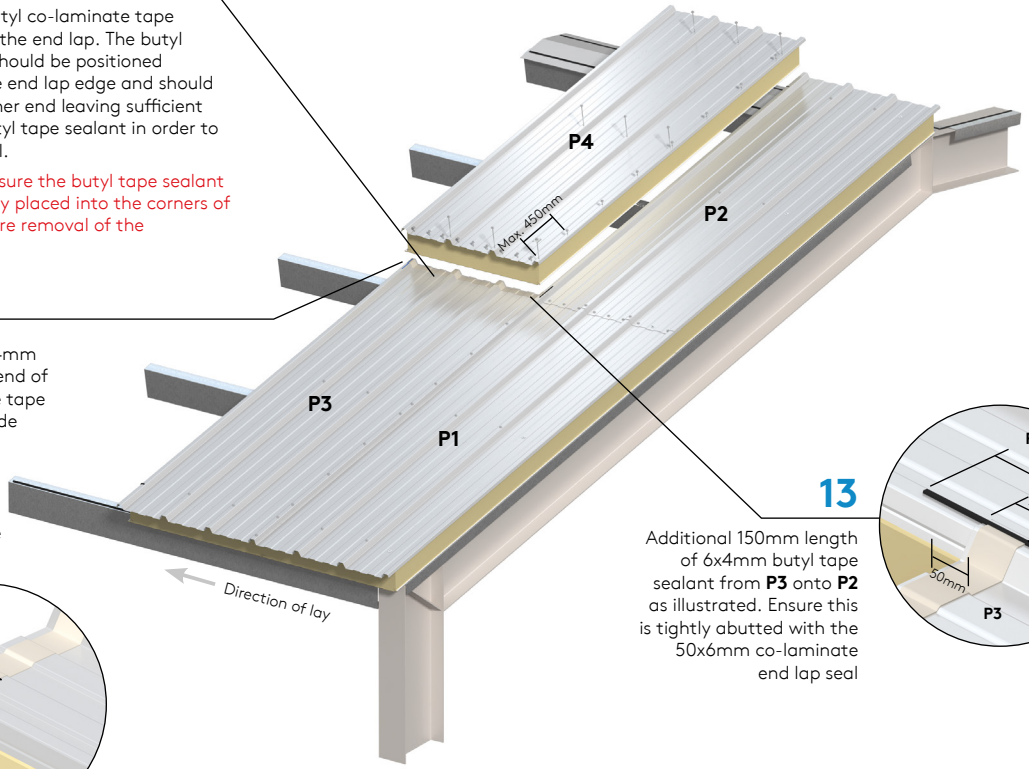
Apply 1 strip of 50x6mm butyl co-laminate tape sealant horizontally across the end lap. The butyl co-laminate tape sealant should be positioned 10mm nominal up from the end lap edge and should commence / terminate either end leaving sufficient area to apply a 6x4mm butyl tape sealant in order to complete the end lap detail.

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

**14**

Apply 150mm length of 6x4mm butyl tape sealant around end of 50x6mm butyl co-laminate tape sealant onto the weatherside of the crown profile on (**P1**) as illustrated. Ensure this is tightly abutted with the 50x6mm butyl co-laminate tape sealant




**13**

Additional 150mm length of 6x4mm butyl tape sealant from **P3** onto **P2** as illustrated. Ensure this is tightly abutted with the 50x6mm co-laminate end lap seal

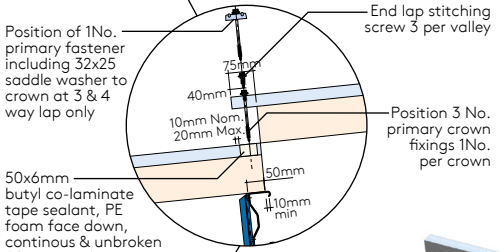


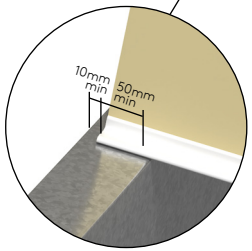

150mm run of 6x4mm butyl tape sealant

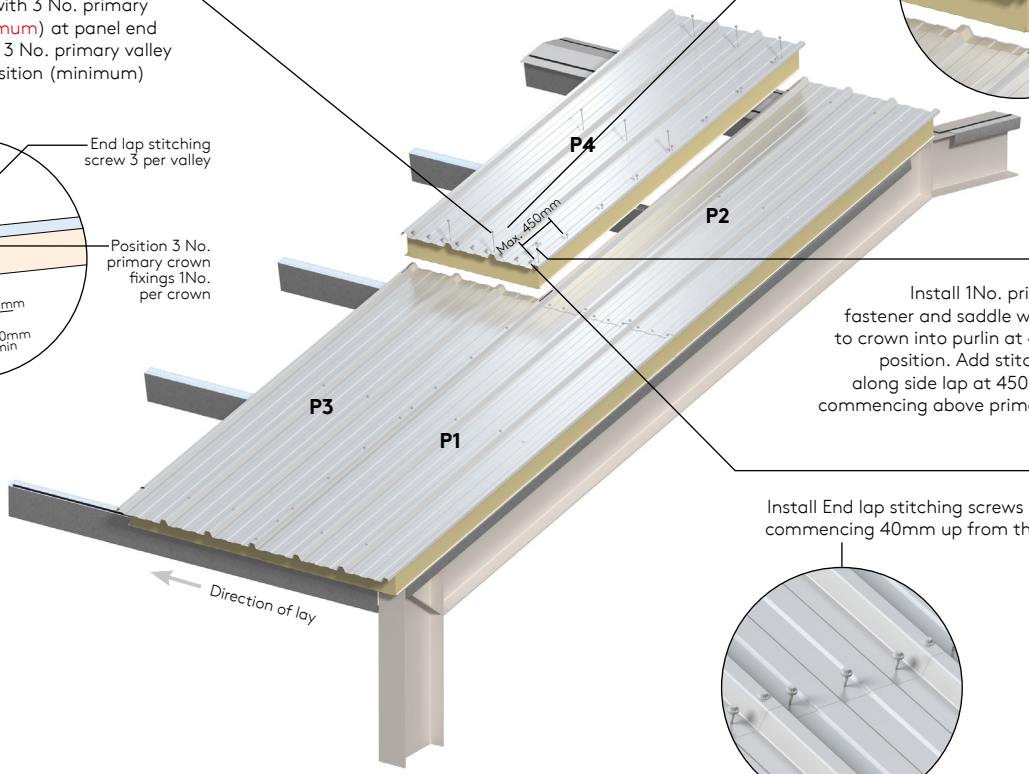
## Steps 15 to 17

### 15

Position & fix fourth panel (**P4**) with 3 No. primary crown fasteners per purlin (minimum) at panel end lap and intermediate positions & 3 No. primary valley fasteners into valleys at ridge position (minimum) subject to wind loadings

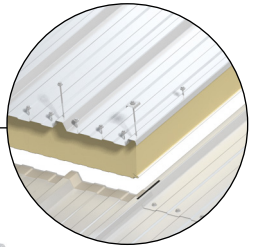



### 16

Install 1No. primary crown fastener and saddle washer 32-25 to crown into purlin at 4 way panel position. Add stitching screws along side lap at 450mm centres commencing above primary fastener



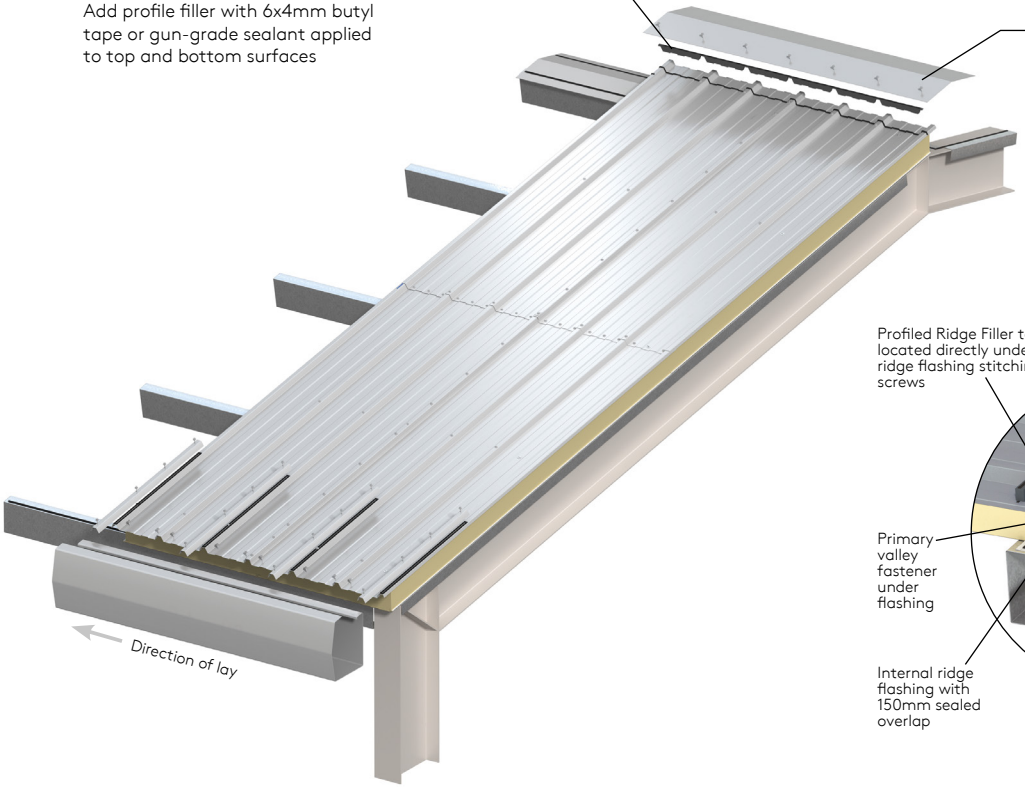
### 17

Install End lap stitching screws 3 per valley, commencing 40mm up from the panel end

## Steps 18 to 19

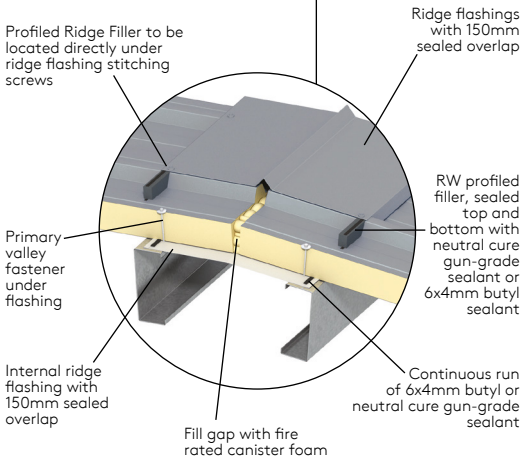
**18**

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

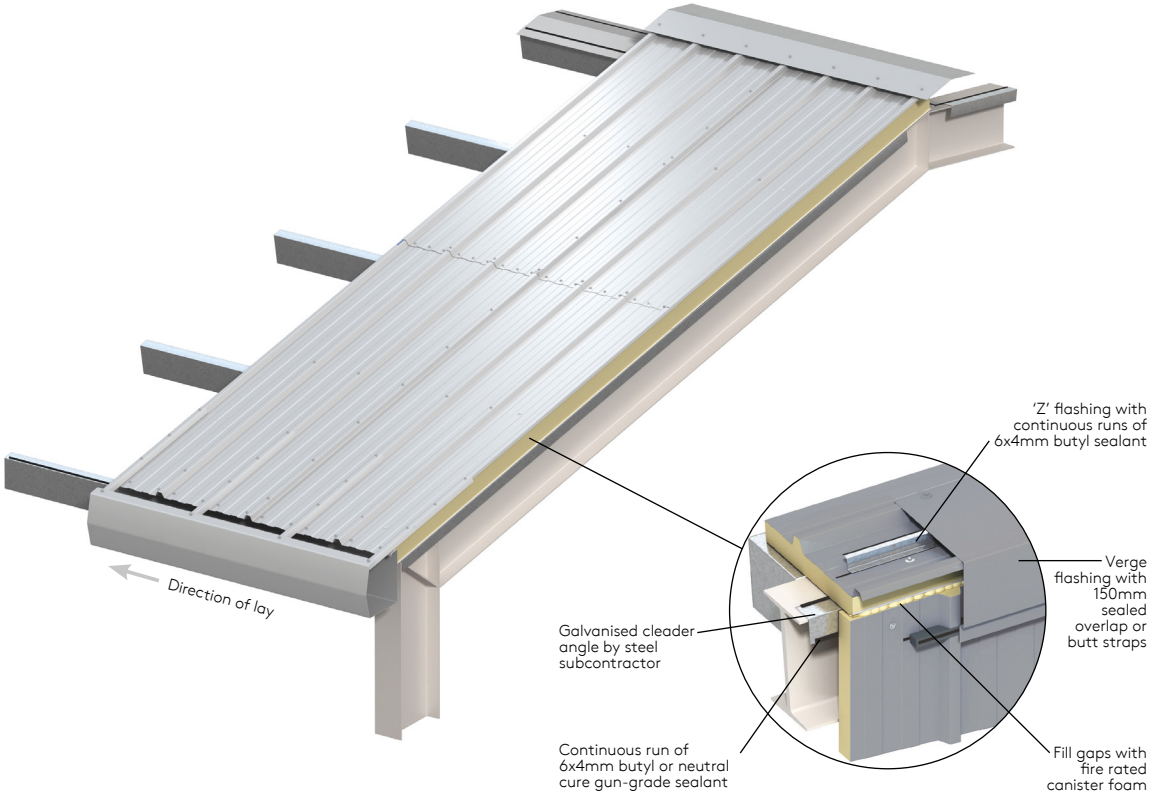



**19**

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



## Roof to Gable End Transition

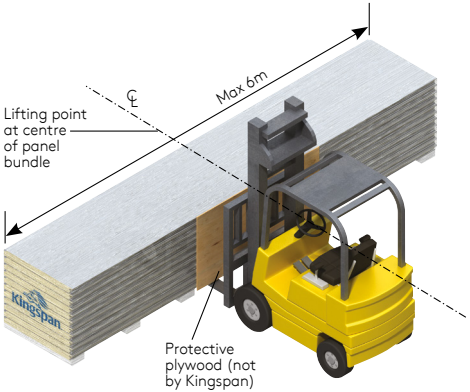


# Panel Handling

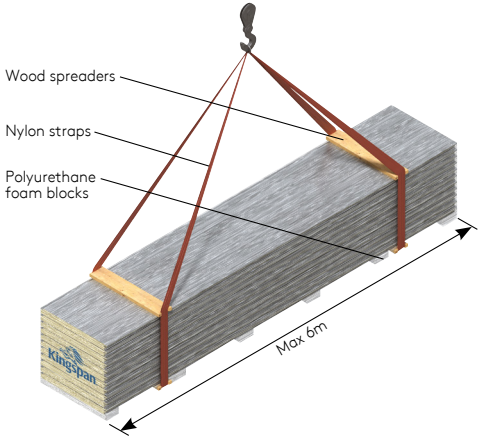
Appropriate personnel protective equipment should always be worn to avoid cuts and abrasions to installers and panels.
Individual panels should always be lifted from a pack and not dragged over others.
The weight of individual panels for lifting can be determined from the information on the packing slip.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

## Protecting Film

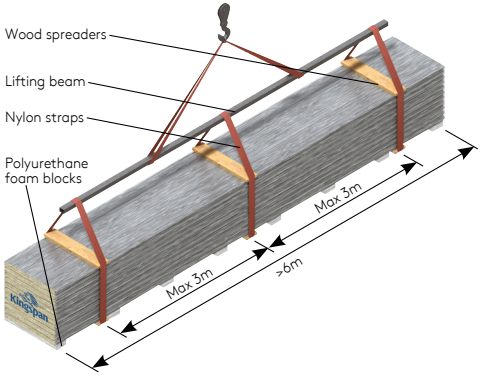
When panels are supplied with a plastic protective film this should be removed during site installation.




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.



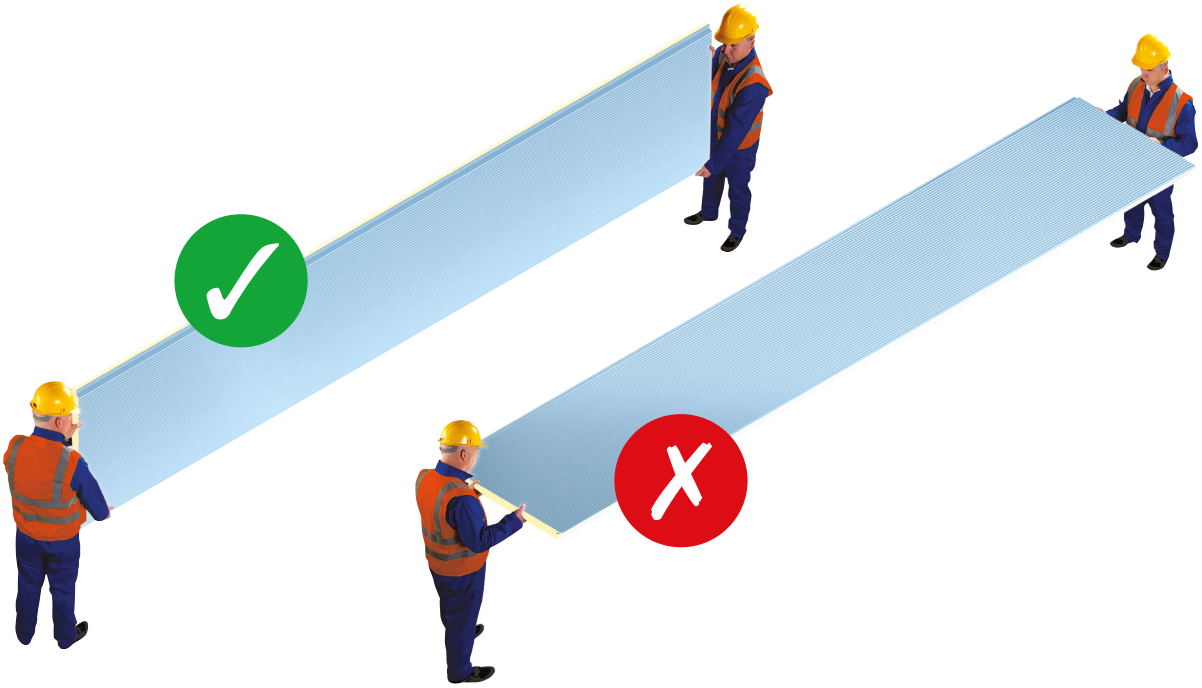

The recommended lifting method for bundles more than 6m, by crane, is by using three points of support. To prevent damage from nylon straps, use wood spreaders at top and bottom at lifting locations as shown.

**For illustration purposes only**

# Panel Handling - Correct and Incorrect Panel Handling

**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 scan the QR code below or please call Kingspan on:

AUS: +61 2 8889 3000
www.kingspanpanels.com.au

For the most up-to-date version of this document please scan or click here.

For the product offering in other markets please contact your local sales representative or visit www.kingspanpanels.com

Care has been taken to ensure that the contents of this publication are accurate, but Kingspan Insulated Panels and its subsidiary companies do not accept responsibility for errors or for information that is found to be misleading. Suggestions for, or description of, the end use or application of products or methods of working are for information only and Kingspan Insulated Panels and its subsidiaries accept no liability in respect thereof.

Third Issue | 23/09/2026