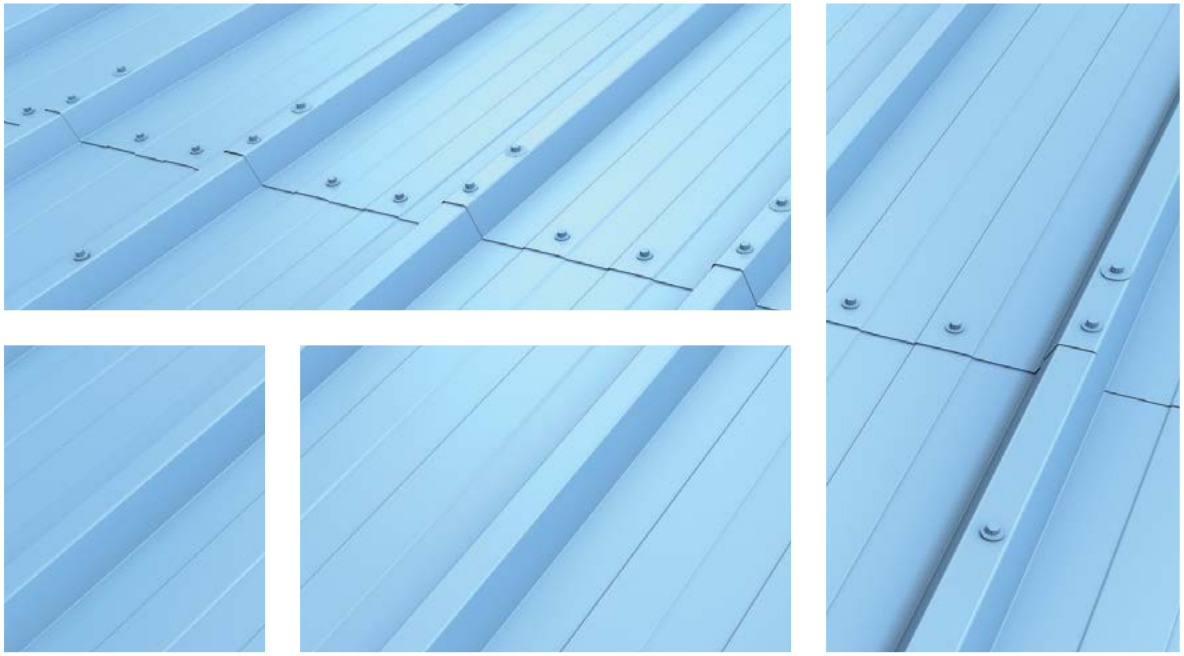
Insulated Panels
New Zealand

KS1000RW Trapezoidal Roof Panel

150mm End Lap Installation Guide



Refer to Kingspan Technical for high humidity and low pitch installations

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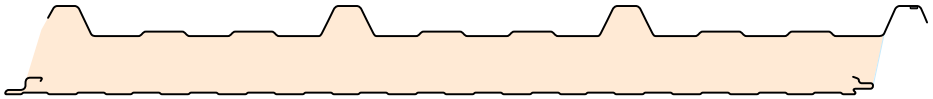
KS1000RW Trapezoidal Roof Panel - 150mm End Lap

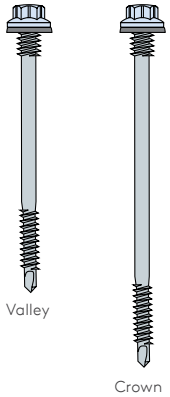
Components

KS1000 RW Trapezoidal Roof Panel



Profiled foam ridge filler (3-RWFILL)

Primary/main fastener
(Carbon Steel with minimum 19mm embossed washer)



Secondary/stitching screws
(Carbon Steel with minimum 15mm embossed washer)

Fire-rated canister insulation

Gun-grade sealant

Butyl tape sealant

Cordless drill
(do not use impact drivers)

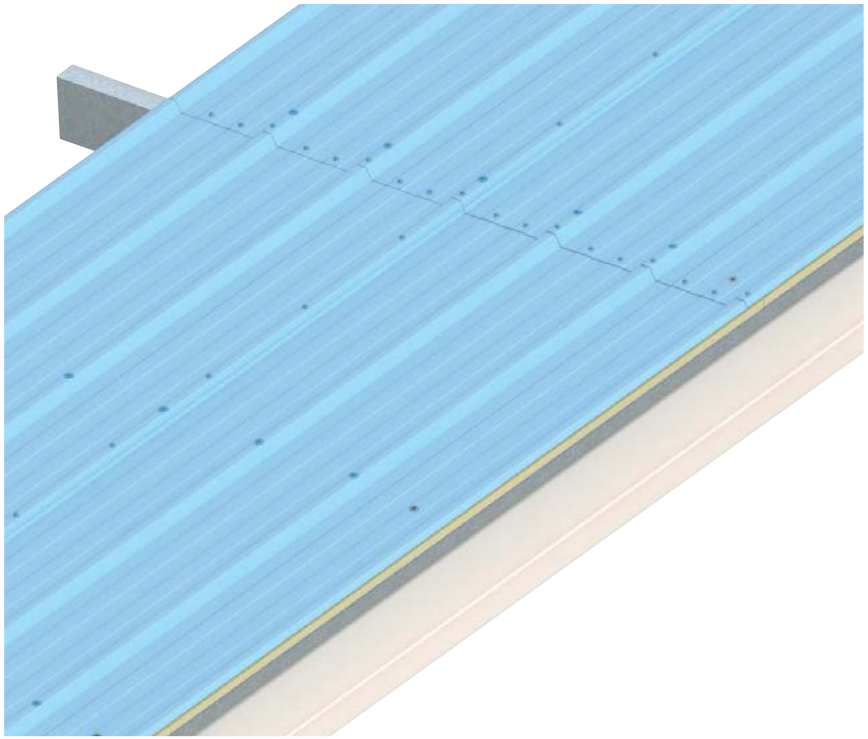
This installation guide should be read in conjunction with the 'project specific' design drawings and method statements.

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. Installation Guides are available for the full range of Kingspan Insulated Roof and Wall Systems.

KS1000RW Trapezoidal Roof Panel - 150mm End Lap

Notes

This is a generic KS1000RW installation guide. Details may differ from project to project. Project specific construction details must be used unless those details are contrary to the principles of the Kingspan details; in which case specific instruction should be sought.



Sequence

The panels are ordered for either 'Right to Left' or 'Left to Right' installation. Kingspan does not recommend 'back-laying' of the panels.

If there are panel end laps then the panels must be installed in a tiered sequence only.

Support Structure

Ensure steelwork is suitably plumb, level and within tolerance before starting the installation of the panels. If the panels are end lapped then check the bearing width, location and straightness of the structural support at that location.

The minimum bearing face for intermediate supports is 60mm. The minimum bearing width at panel end to panel end lap junctions differ, refer to Kingspan details.

The support must provide a full bearing surface for the panel

Install

We recommend the use of mechanical handling systems for the movement & lifting of panels into position.

When practical, cut panels on ground prior to installation. Clean any swarf from the panel immediately

The protective film is to be removed from the external weather face of panel & internal liner before to installation.

Gun-grade sealant is butyl sealant for air seals and neutral cure silicone for weather seals.

Fixings

The number of fasteners must be calculated based on spans, wind loads and fastener capacity.

All fasteners to be minimum Class 4 Carbon steel with coloured heads, refer to the specification. Check that the fixing thread and drill tip is correct for connection to the structure.

Install fasteners with the recommended screw gun speed selection. Use correct socket and drive, including depth-locating nose piece to prevent over driving. Refer to the fastener manufacturer's recommendations.

Fixings may be installed either in the panel crown or on the panel pan. For walls confirm with the designer which method is to be used before ordering of the fixings and panel installation.

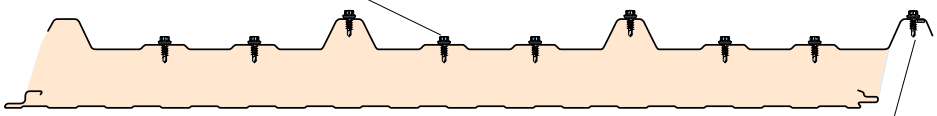
Contact Kingspan Technical Services for project specific advice on High Humidity buildings and cyclonic regions.

KS1000RW Trapezoidal Roof Panel - 150mm End Lap

Fastener Layouts

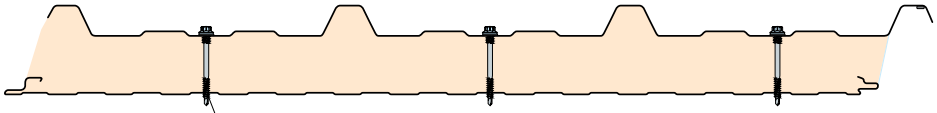
End/Side Lap

End lap stitching screws (6.3mm Ø x 25mm long) with min. 15mm dia washers 2 per valley and 1 at each crown, 35mm upslope from panel end.



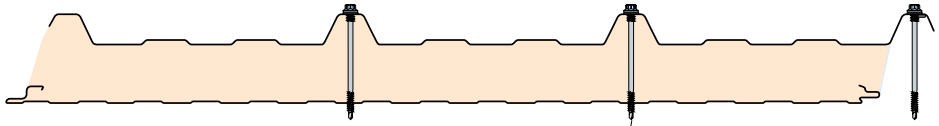
Side lap stitching screws (6.3mm Ø x 25mm long) with min. 15mm dia washers at 450mm centres (**maximum**).

Ridge (beneath flashing)



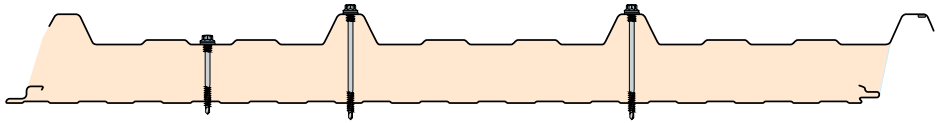
Self-drilling, self tapping primary fasteners with minimum 19mm Ø non-ferrous EPDM backed washer, 1 at each valley at each support

Standard Intermediate, Eaves & Side Lap



Self-drilling, self-tapping primary fasteners with minimum 19mm Ø non-ferrous EPDM backed washer, 1 at each crown at each support, 135 mm upslope from panel end lap.

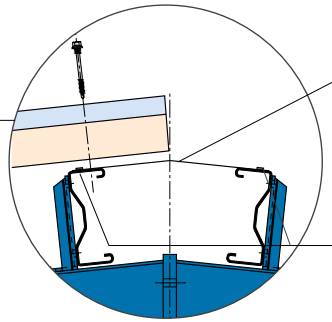
Verge (beneath flashing)



Self-drilling, self tapping primary fasteners with minimum 19mm Ø non- ferrous EPDM backed washer. 1 in the valley, 2 in the crown, at each support

Note: Number of fasteners must be calculated based on the project specific spans and wind loads.

1



Internal ridge flashing with 150mm overlap sealed with air seal, film backed butyl tape or gun-grade sealant

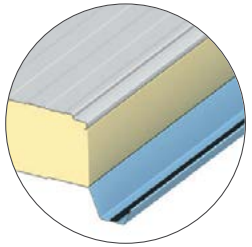
Apply 6x4mm butyl sealant or gun-grade sealant

Internal ridge flashing

SIDELAP

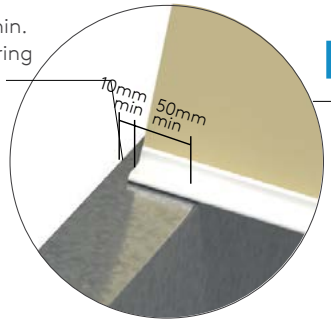
An optional Factory Applied Weather Seal (FAWS) is applied to the panels, on the under side of the sidelap, before they leave the factory

Sidelap rotated 180°



Note: The lower KS1000RW Trapezoidal roof panel must bear a min. of 50mm on the purlin

10mm min. flat bearing surface



b

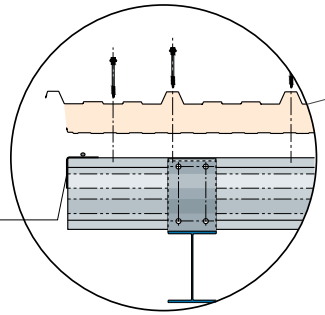
Position first panel (**P1**) with a minimum bearing of 50mm onto the purlin. Fix first panel (**P1**) with 3 No. main fasteners per purlin (**minimum**) at eaves & 3 No. at intermediate locations subject to wind loadings

a

Apply 6x4mm butyl sealant or gun-grade sealant

P1

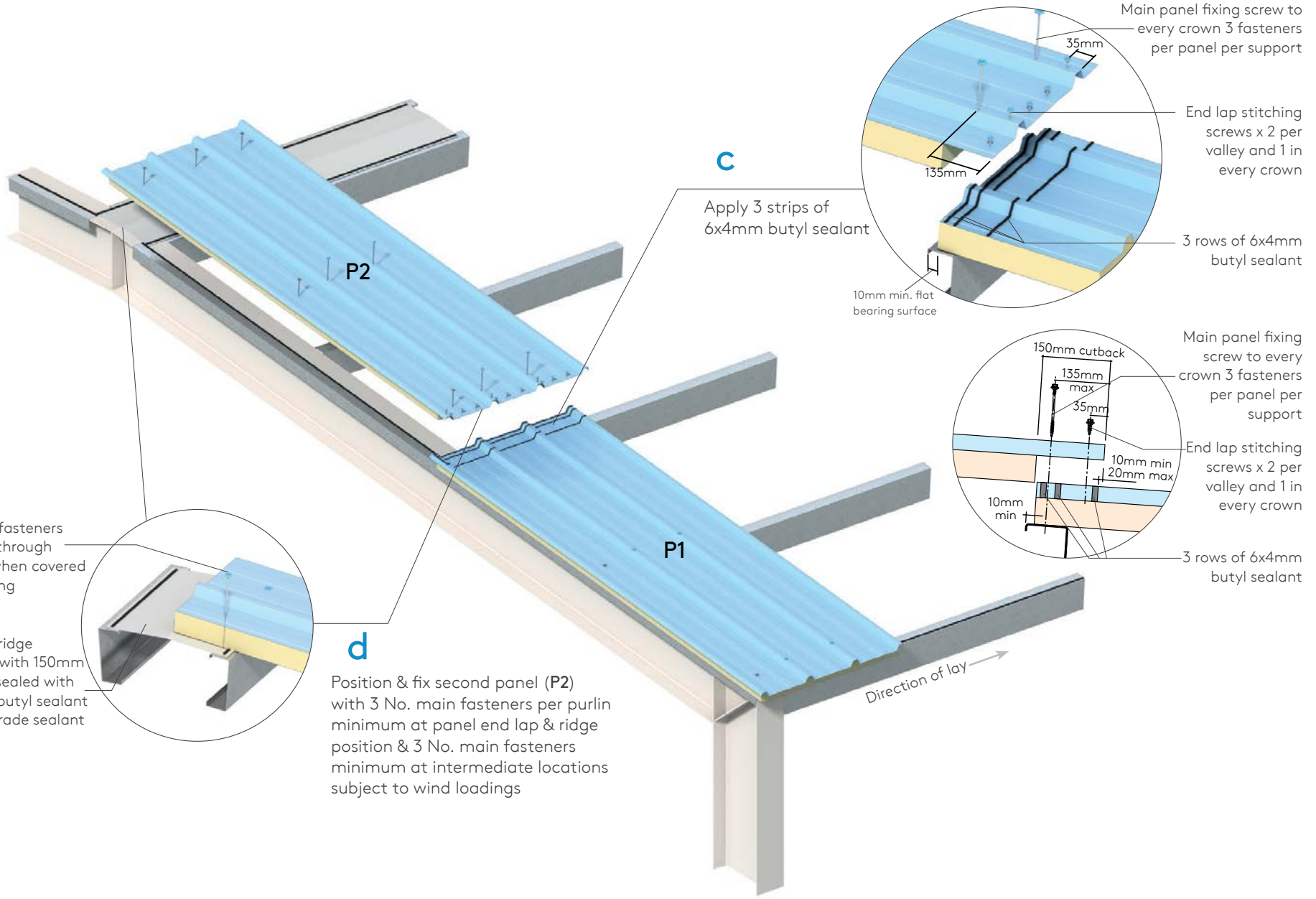
Direction of lay



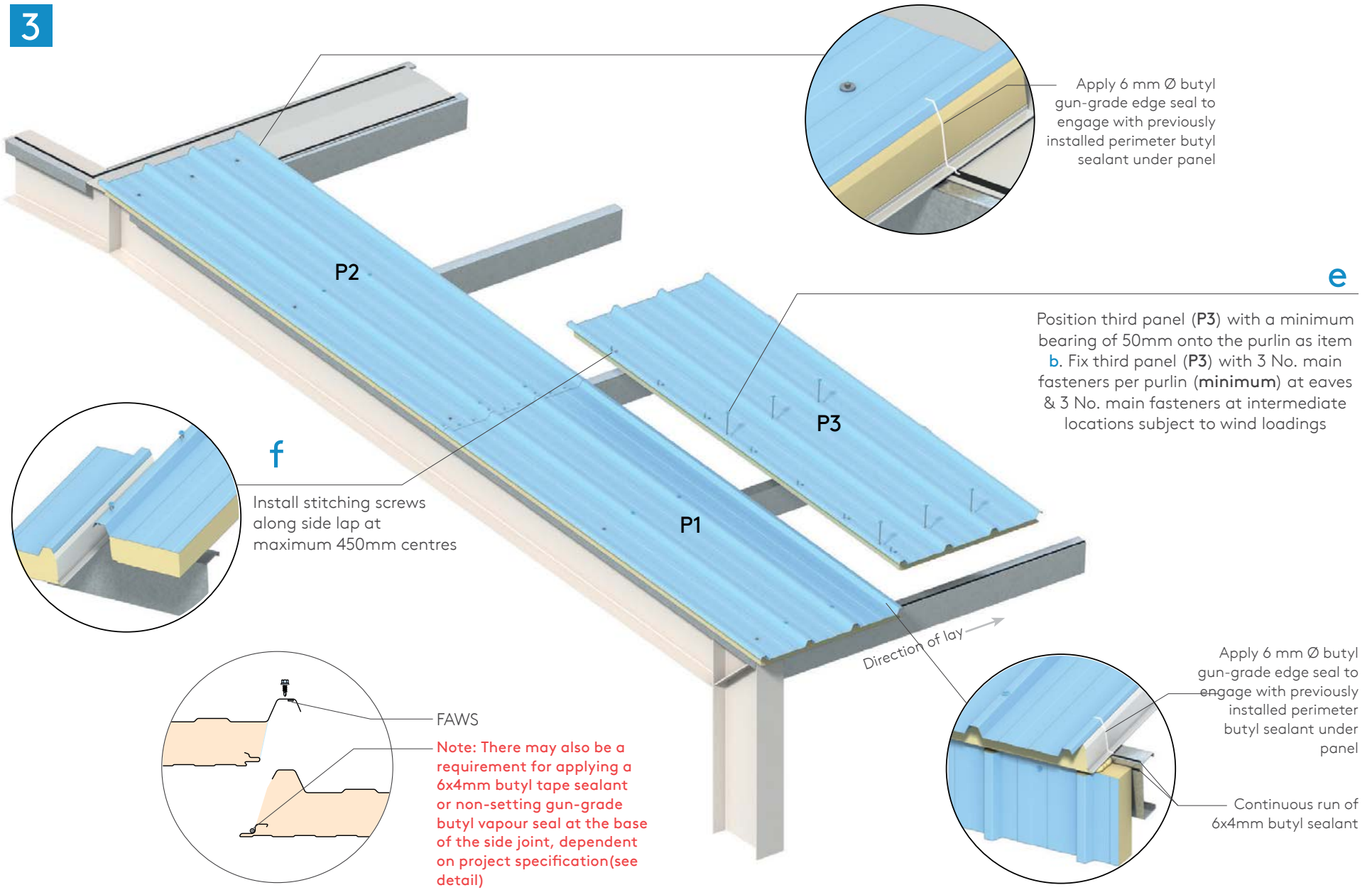
Edge support angle by steel sub-contractor

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

2


P2
P1
c
Apply 3 strips of 6x4mm butyl sealant
Main panel fixing screw to every crown 3 fasteners per panel per support
35mm
End lap stitching screws x 2 per valley and 1 in every crown
135mm
3 rows of 6x4mm butyl sealant
10mm min. flat bearing surface
150mm cutback
135mm max
35mm
10mm min
20mm max
10mm min
Primary fasteners located through valleys when covered by flashing
Internal ridge flashing with 150mm overlap sealed with 6x4mm butyl sealant or gun grade sealant
d
Position & fix second panel (P2) with 3 No. main fasteners per purlin minimum at panel end lap & ridge position & 3 No. main fasteners minimum at intermediate locations subject to wind loadings
Direction of lay

3



Apply 6 mm Ø butyl gun-grade edge seal to engage with previously installed perimeter butyl sealant under panel

e

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

f

Install stitching screws along side lap at maximum 450mm centres

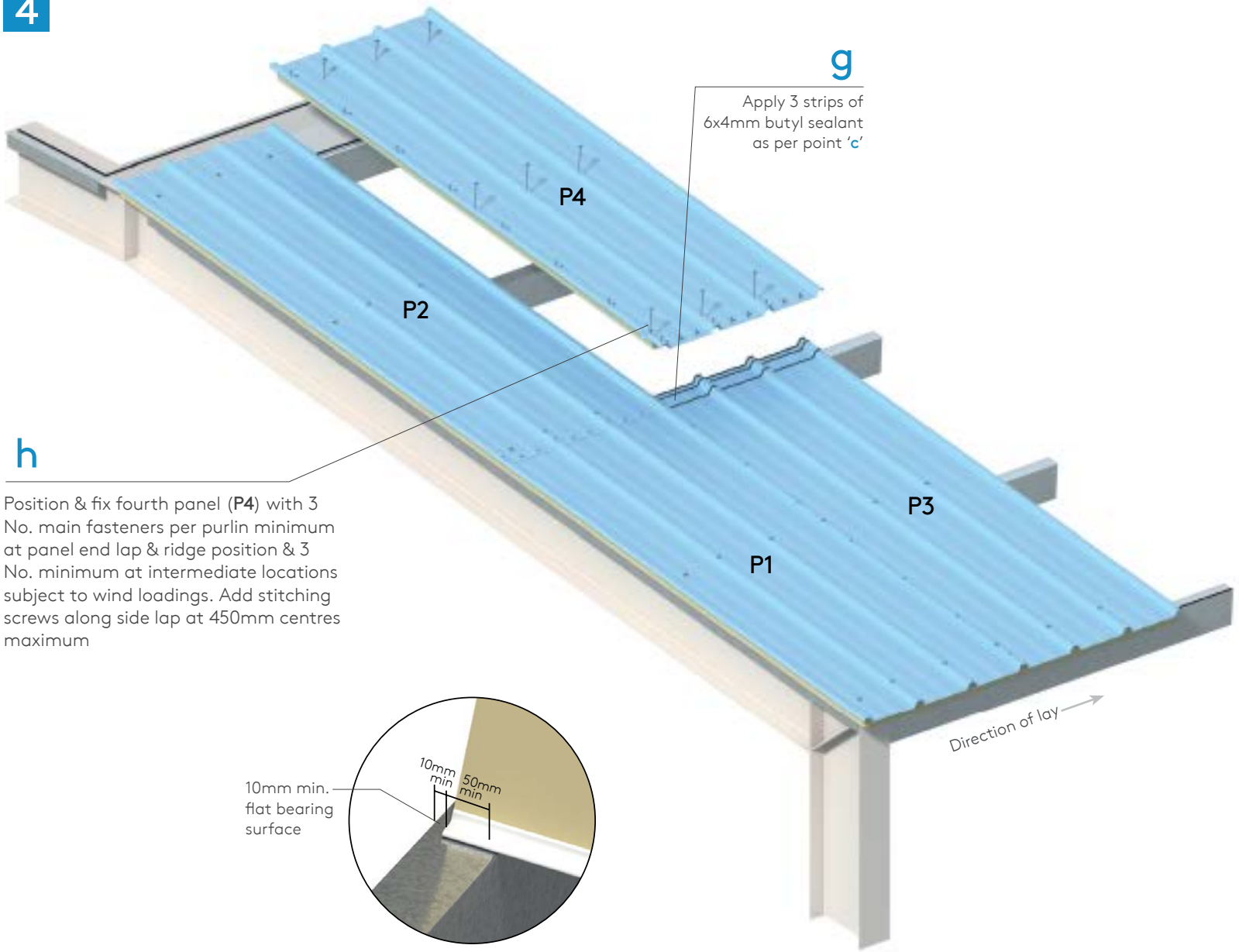
FAWS

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)

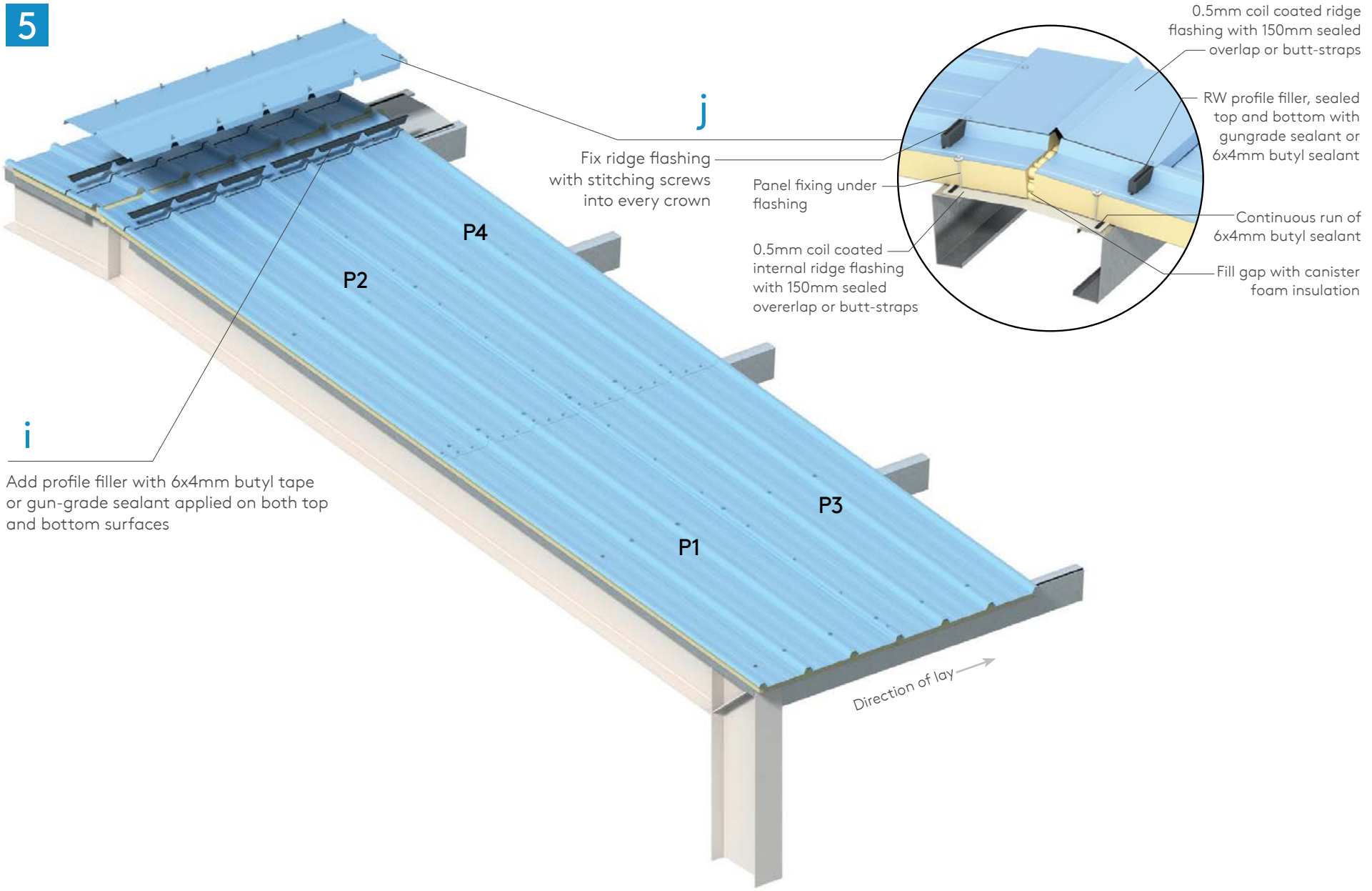
Apply 6 mm Ø butyl gun-grade edge seal to engage with previously installed perimeter butyl sealant under panel

Continuous run of 6x4mm butyl sealant

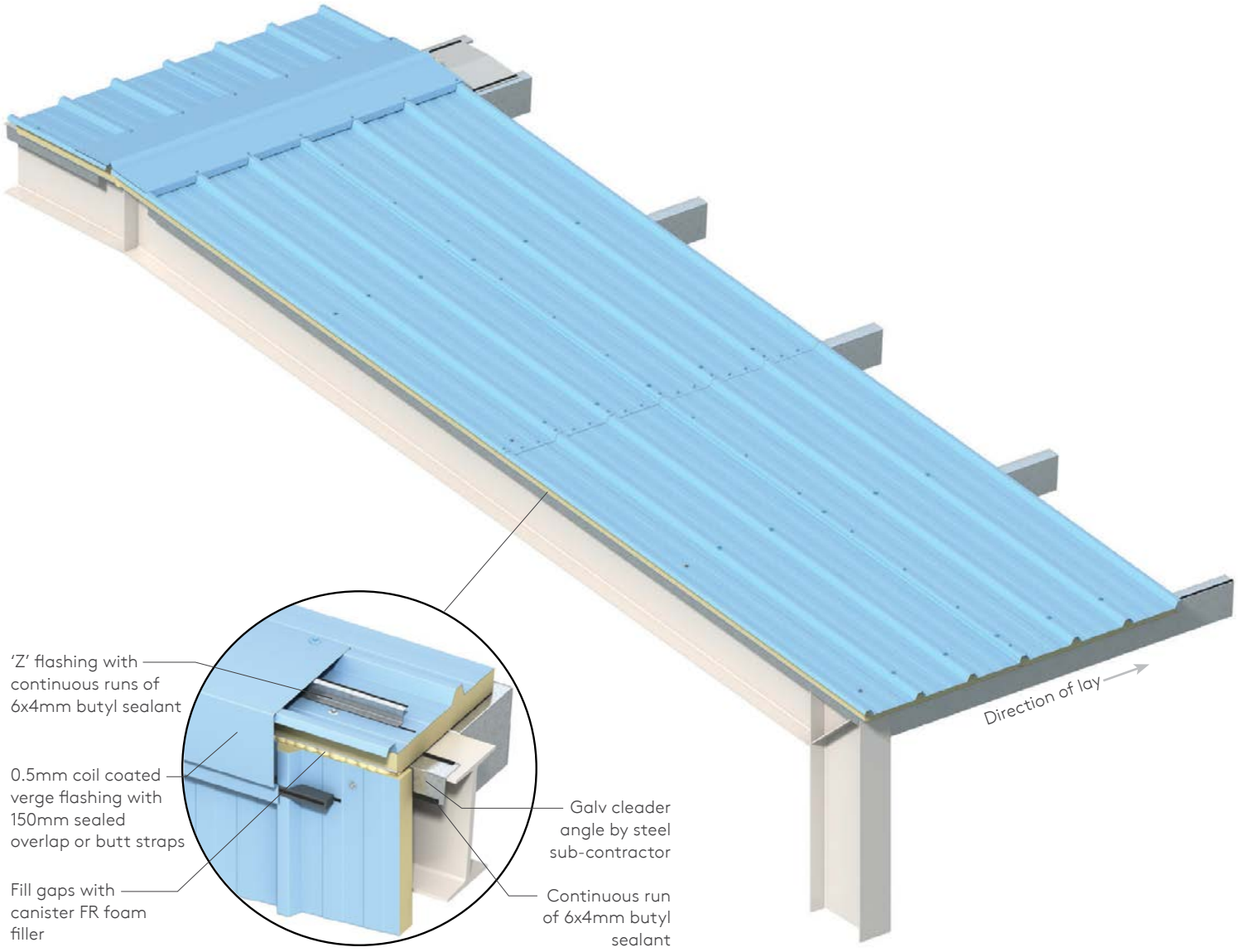
4


g
Apply 3 strips of 6x4mm butyl sealant as per point 'c'
P4
P2
P3
P1
h
Position & fix fourth panel (P4) with 3 No. main 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
Direction of lay
10mm min. flat bearing surface
10mm min
50mm min

5


j
Fix ridge flashing with stitching screws into every crown
0.5mm coil coated ridge flashing with 150mm sealed overlap or butt-straps
RW profile filler, sealed top and bottom with gungrade sealant or 6x4mm butyl sealant
Panel fixing under flashing
Continuous run of 6x4mm butyl sealant
0.5mm coil coated internal ridge flashing with 150mm sealed overerlap or butt-straps
Fill gap with canister foam insulation
i
Add profile filler with 6x4mm butyl tape or gun-grade sealant applied on both top and bottom surfaces
P4
P2
P3
P1
Direction of lay

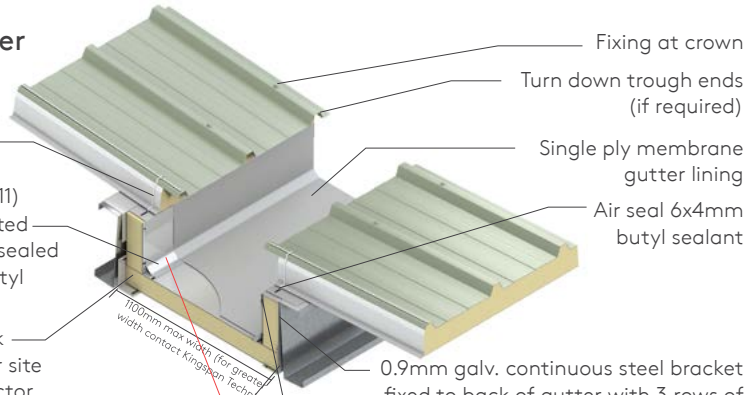
6


'Z' flashing with continuous runs of 6x4mm butyl sealant
0.5mm coil coated verge flashing with 150mm sealed overlap or butt straps
Fill gaps with canister FR foam filler
Galv cleader angle by steel sub-contractor
Continuous run of 6x4mm butyl sealant
Direction of lay

KS1000RW Trapezoidal Roof Panel - 150mm End Lap

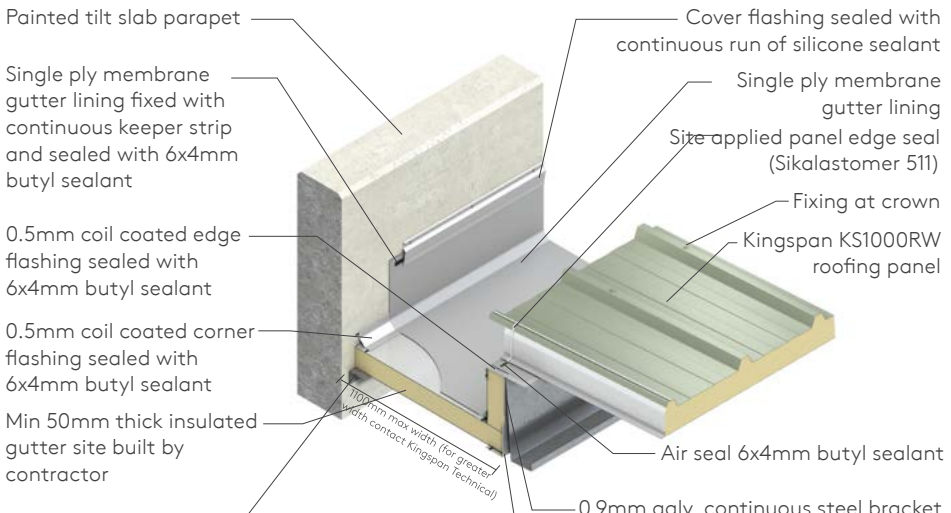
Site-Assembled Insulated Gutter Options

Valley Gutter



Chamfer is butynol detail only.
Refer membrane supplier's details for flashing treatment at corners.

Internal Gutter to Precast Concrete Parapet

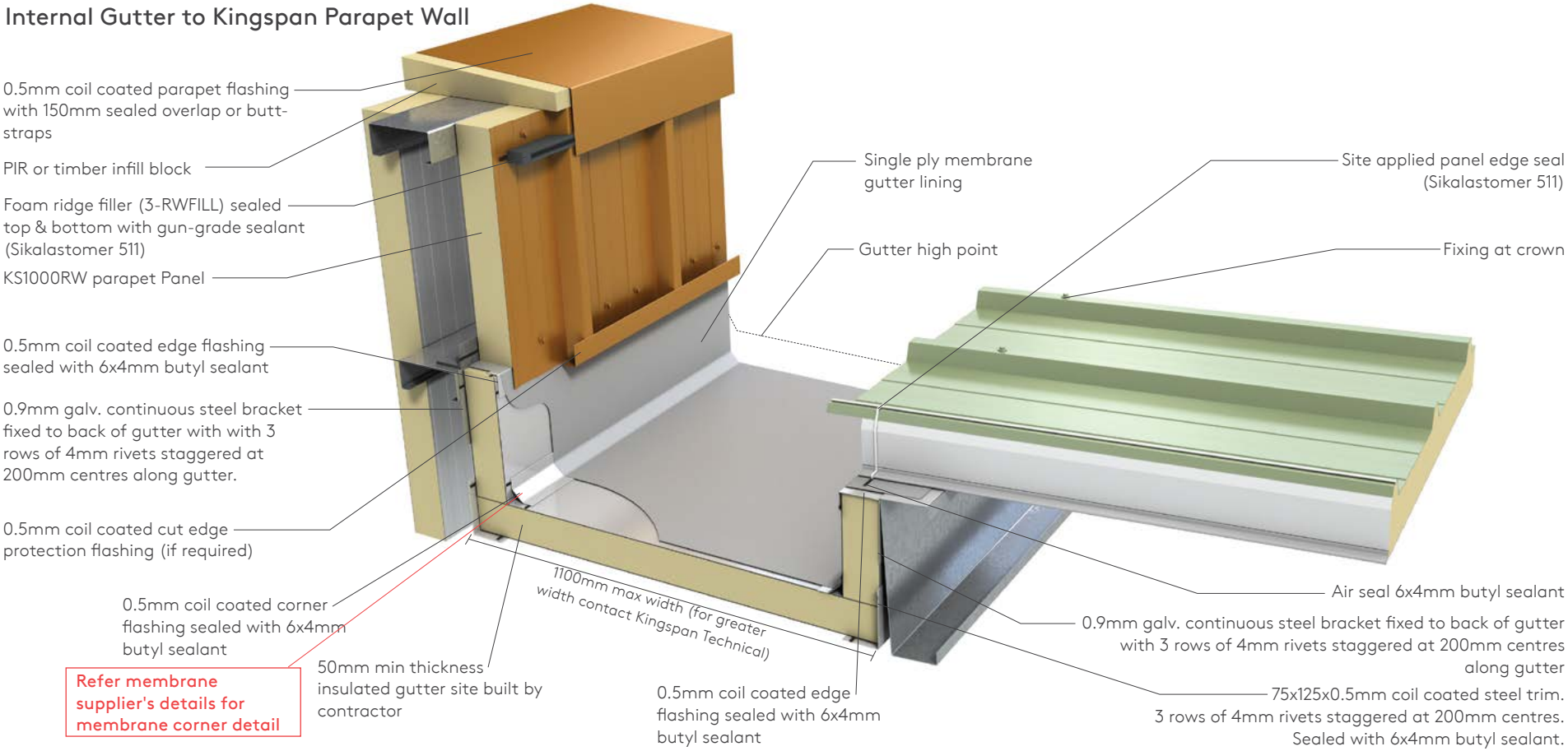


Gutters should be installed and membrane lined before the installation of the roofing panel

KS1000RW Trapezoidal Roof Panel - 150mm End Lap

Site-Assembled Insulated Gutter Options

Internal Gutter to Kingspan Parapet Wall



Gutters should be installed and membrane lined before the installation of the roofing panel

KS1000RW Trapezoidal Roof Panel - 150mm End Lap
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.

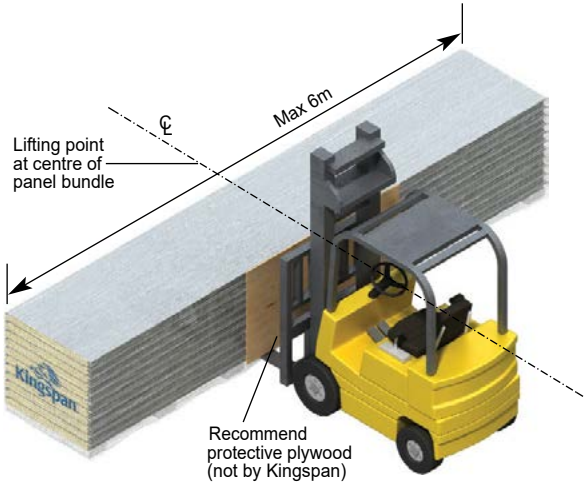
The weight of individual panels for lifting can be determined from the information on the packing slip.

For larger panels the contractor would normally arrange to use appropriate material installation equipment to help lift the panels into position.

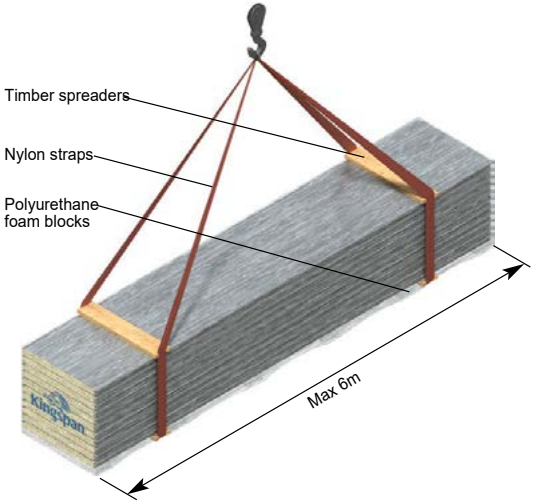
Lift only one bundle at a time. Do not stack more than two bundles high

Protecting Film

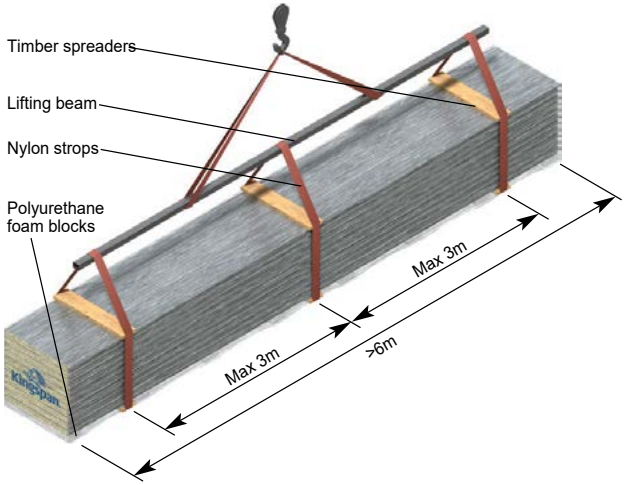
When panels are supplied with a plastic protective film this should be removed prior to site installation.



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 more than or equal to 6m can be handled with a forklift spreader or a crane by using nylon strops and timber 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.

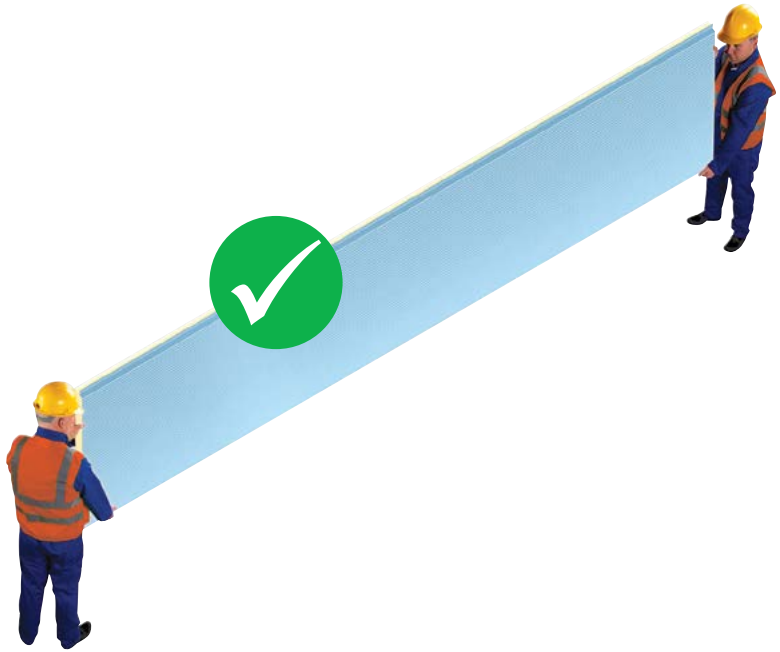
For illustration purposes only

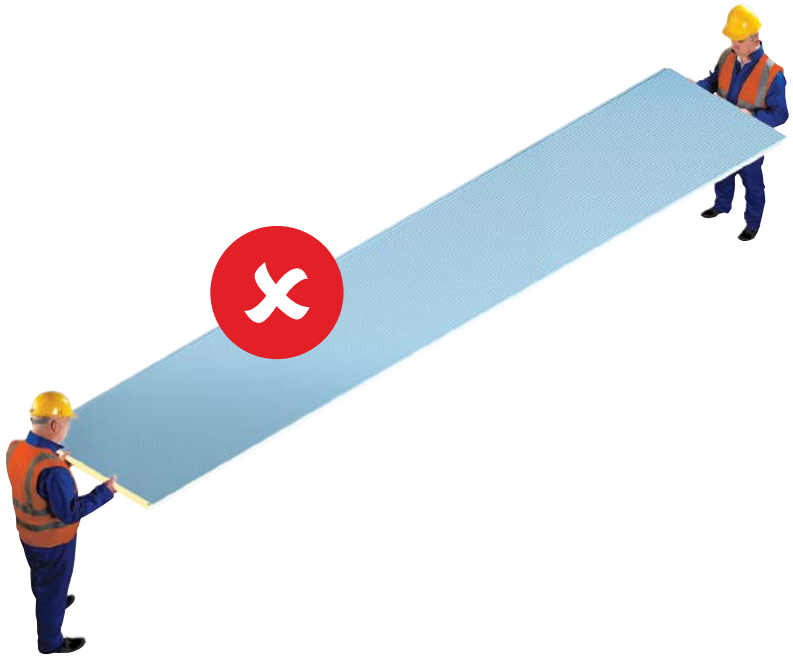
KS1000RW Trapezoidal Roof Panel - 150mm End Lap

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.





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

To ensure you are viewing the most recent and accurate product information, please visit: https://www.kingspan.com/content/dam/kingspan/kip-west/roof-panels/ks1000rw-roof-panel/kingspan-ks1000rw-trapezoidal-roof-panel-installation-guide-en-nz.pdf

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