

Insulated Roof & Wall Panels
UK & Republic of Ireland

Kingspan Topdek KS1000 TD Insulated Single Ply Roofdeck Installation Guide



September 2020



Kingspan Topdek (KS1000 TD)

Insulated Single Ply Roofdeck

Components

Kingspan Topdek (KS1000 TD)



514cw
50mm wide
acrylic tape



Butyl rubber
tape sealants



TRIAC S
hot air tool



SFS
fastener



40mm wide
silicone
pressure roller



40mm nozzle
for lap welding



20mm nozzle for
lap welding and
intricate detailing



SFS drive
bar



Ejot drive
bar



1.5mm PVC
membrane cover
strip. (min: IKO
150mm or SIKA
200mm wide)



Ejot
fastener



Hot air
welder



Penny
pressure
roller



Wire brush



PVC foam tape
(SGV15P 20x9
PVC)



Seam probe



10" scissors



Non-setting
gun-grade
sealant

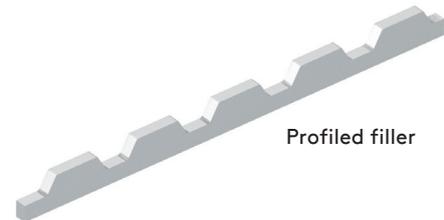


Fire-rated
canister
insulation



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 reserves the right to amend the information at any time in the future. Installation guides are available for most of Kingspan insulated roof and wall panels.



Profiled filler

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Note: Only fully trained and certified operatives should install Kingspan Topdek and heat weld the relevant membrane.

Ensure steel work is suitable for panels and is within tolerance.

Ensure the lower panel 60mm cutback is bearing on to upper purlin by a minimum of 60mm.

Gun-grade sealant type - non-setting butyl rubber sealant is recommended.

Panel sequence installed in tiers not coursed.

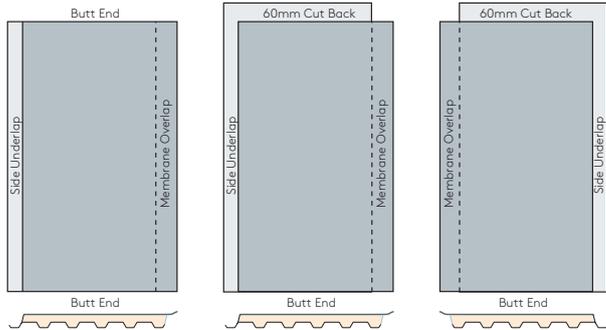
Profiled fillers required at eaves, panel butt joint and ridge.

This product cannot be used in high humidity or hygiene internal environments.

PVC membrane options are: IKO Armourplan or Sika Trocal.

Kingspan Topdek can be used on building applications with a minimum finished roof pitch after deflection of 1:80 (0.72°) to avoid ponding. It is also suitable for curved roof applications with a convex curve (45m radius) and concave curve (50m radius).

As an alternative to using butyl air sealants, a PVC foam tape (SGV15P 20x9 PVC) can be used for an air seal.



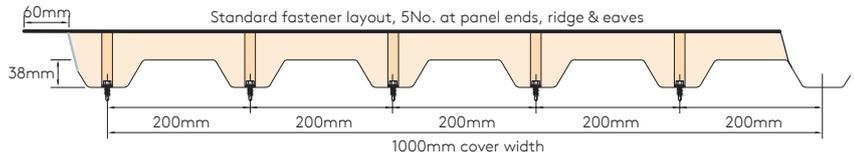
Panel Type TDP
(Left or Right hand)

Panel Type TDX
(Laying Right to Left)

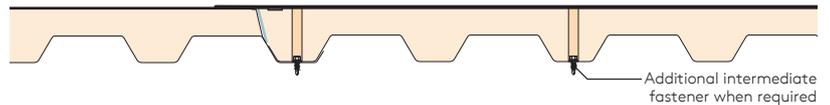
Panel Type TDY
(Laying Left to Right)

Note: Good practice would recommend that a wind load calculation be carried out for each project, to determine whether additional fasteners are required to meet local wind uplift requirements

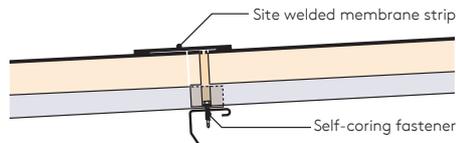
Fastener Layout



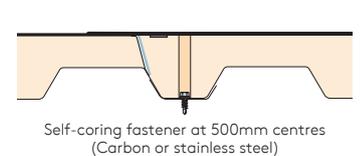
Standard Fastener Layout for Intermediate Panels



End Laps



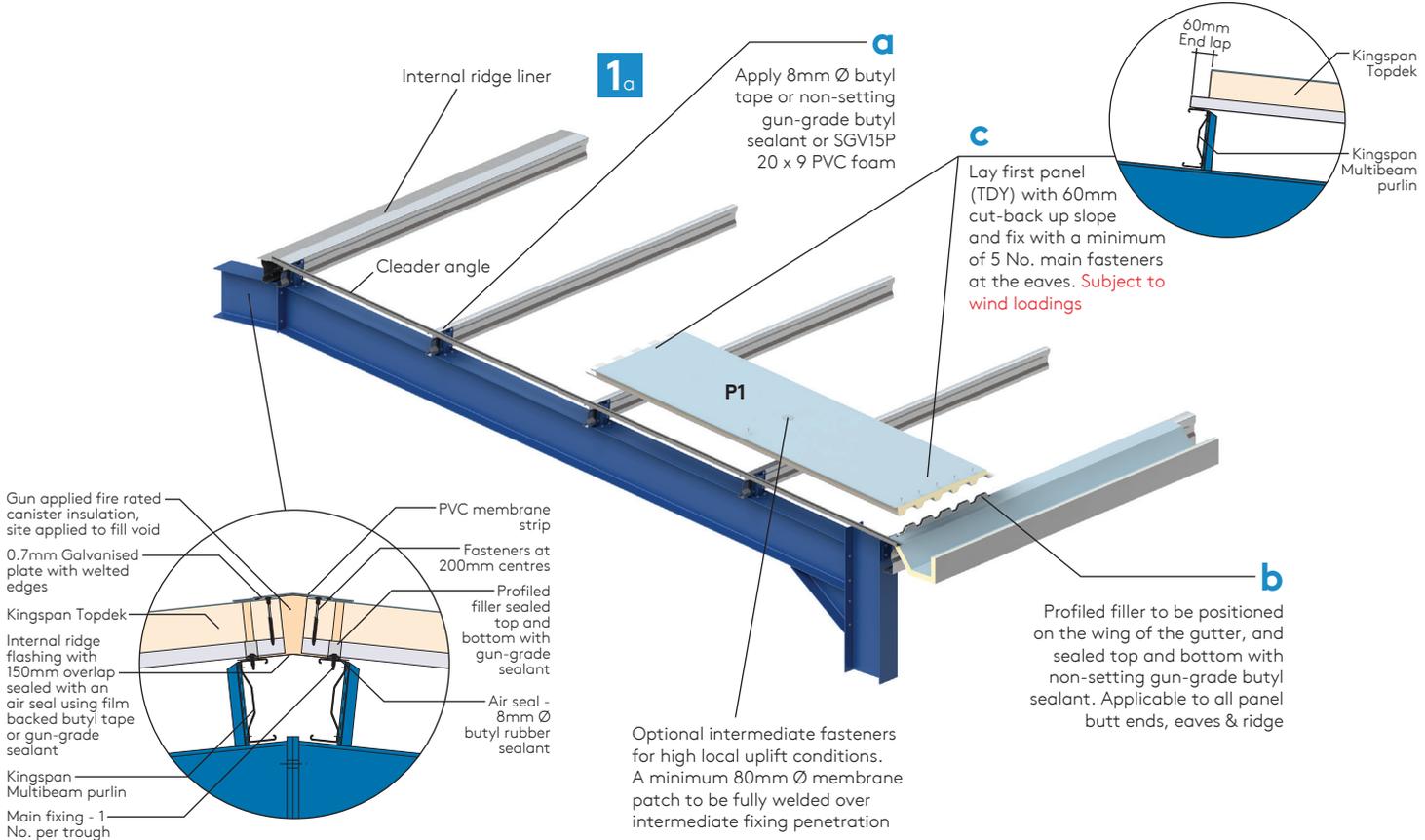
Side Laps



Note: For FM Core panel Specification there is a requirement for 5No main fasteners at intermediate locations subject to wind loads. Contact Kingspan Technical Services for further information.

Kingspan Topdek (KS1000 TD)

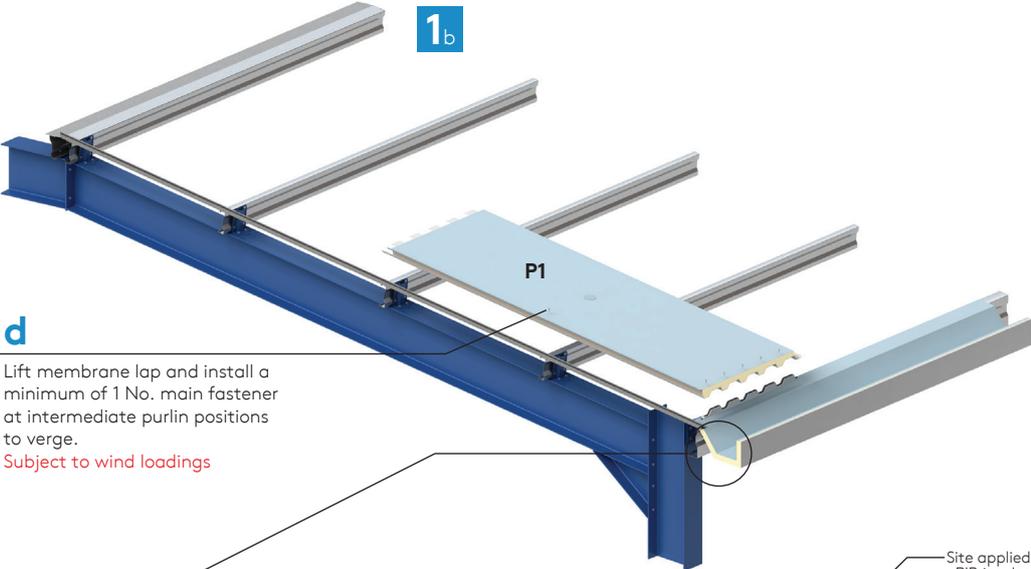
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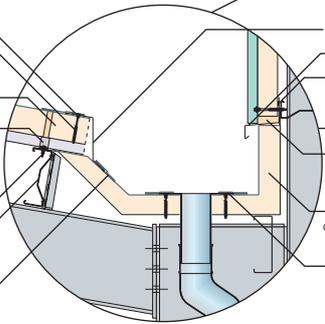
Insulated Single Ply Roofdeck

1_b



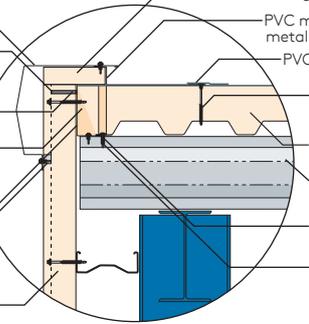
d Lift membrane lap and install a minimum of 1 No. main fastener at intermediate purlin positions to verge.
 Subject to wind loadings

- PVC membrane strip
- Fasteners at 200mm centres
- Kingspan Topdek
- Profiled filler bedded on gun-grade sealant
- Main fixing - 1 No. per trough
- Kingspan Multibeam purlin
- PVC membrane strip



- PVC membrane coated metal upstand flashing
- Drip flashing
- Air seal - 6mm Ø butyl strip
- Site applied fire rated canister insulation
- Membrane coated boundary wall gutter
- PVC membrane disk

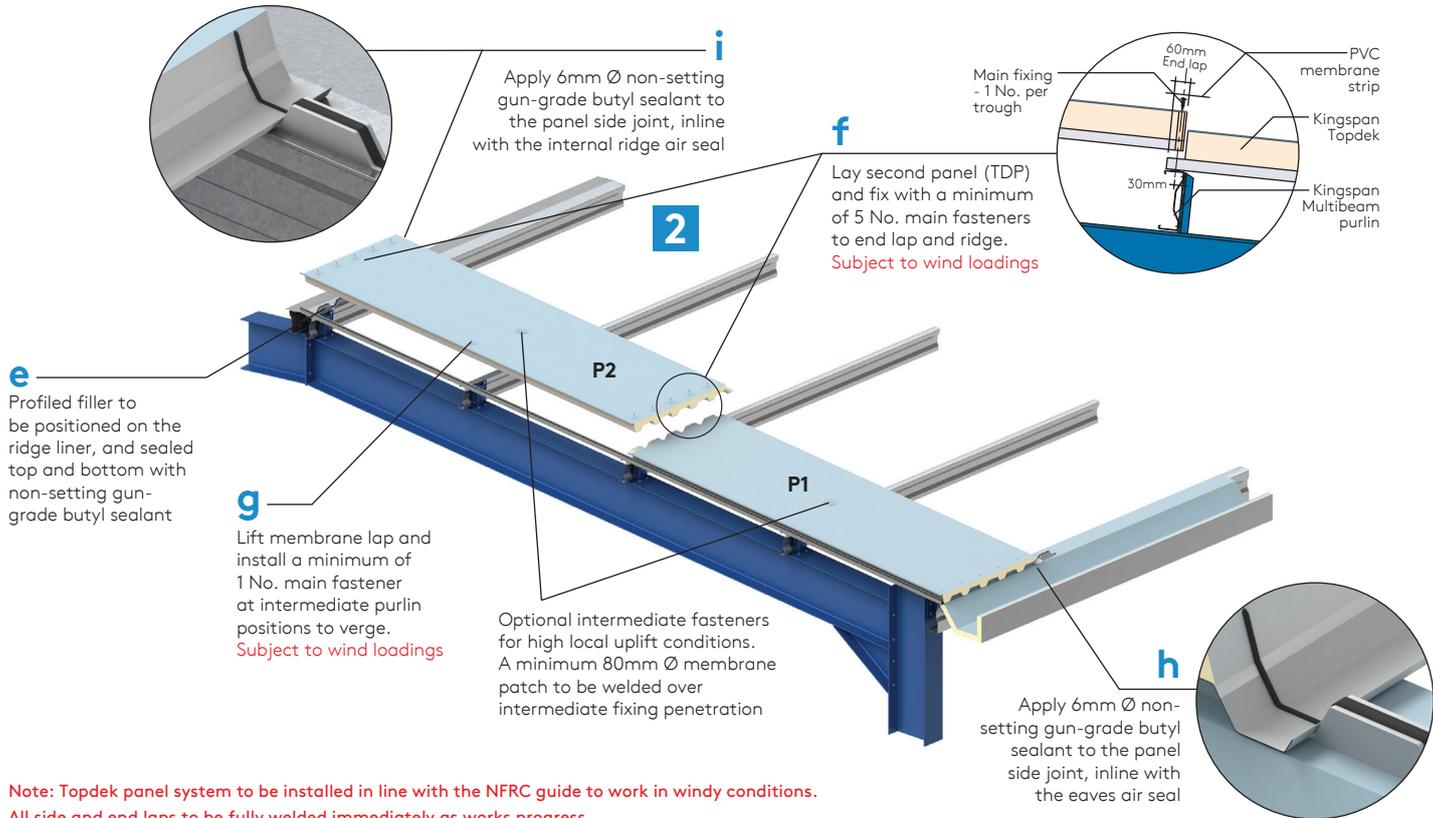
- Verge flashing with 150mm butt straps sealed with 6mm Ø butyl strip
- Air seal - Gun-grade sealant to male joint
- Air seal - 6mm Ø butyl strip
- Site applied fire rated canister insulation
- Galvanised steel cleader angle
- AWP filler bedded on gun-grade sealant
- Kingspan Architectural Wall Panel



- Site applied LPCB certified PIR insulation board. Any gaps filled with fire rated canister insulation
- PVC membrane coated metal upstand flashing
- PVC membrane strip
- Fasteners at 200mm centres
- Kingspan Topdek
- Kingspan Multibeam purlin
- Air seal - 8mm Ø butyl strip
- Fasteners at 500mm centres

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Note: Topdek panel system to be installed in line with the NFRC guide to work in windy conditions.

All side and end laps to be fully welded immediately as works progress.

Kingspan recommend works are planned to ensure that areas of Topdek panels are only installed when they can be fully completed the same day. Topdek roof areas should be inspected during and at the end of the working day to make sure that loose membrane lap materials are not left unsecured to prevent wind damage.

Membrane lap strip to overlap a minimum of 50mm past all fasteners to enable 30mm minimum weld width

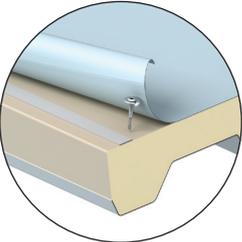
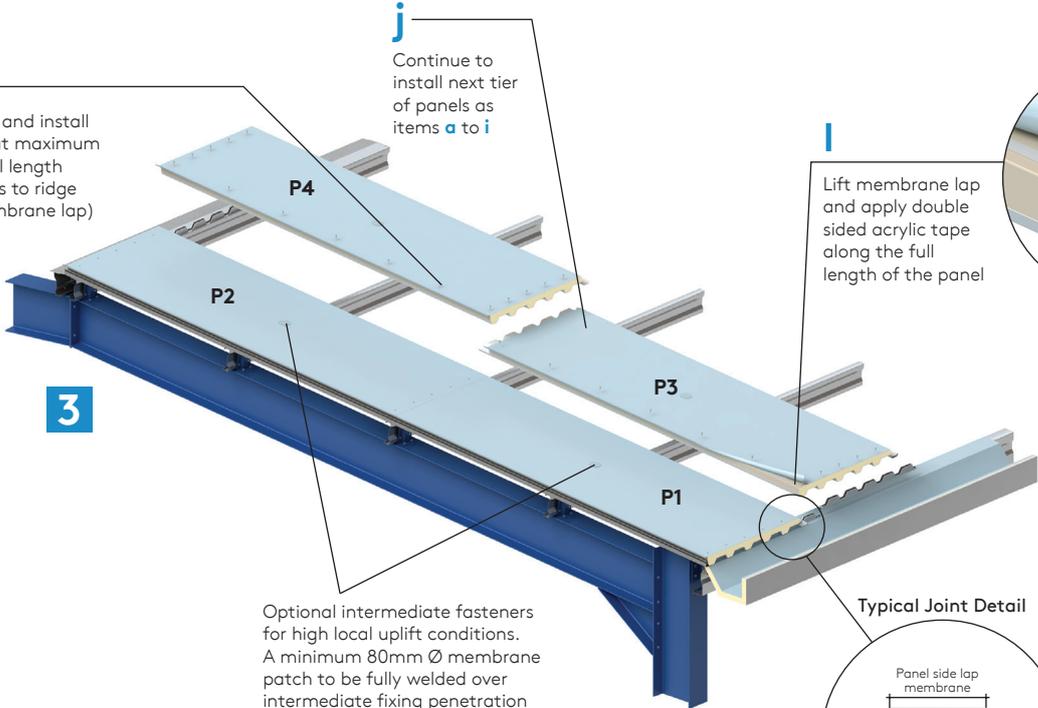
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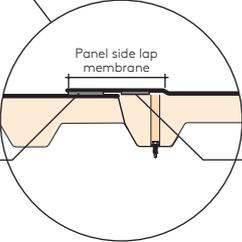
k
Lift membrane lap and install side lap fasteners at maximum 500mm centres full length of panel from eaves to ridge (concealed by membrane lap)

j
Continue to install next tier of panels as items **a** to **i**

l
Lift membrane lap and apply double sided acrylic tape along the full length of the panel



Typical Joint Detail



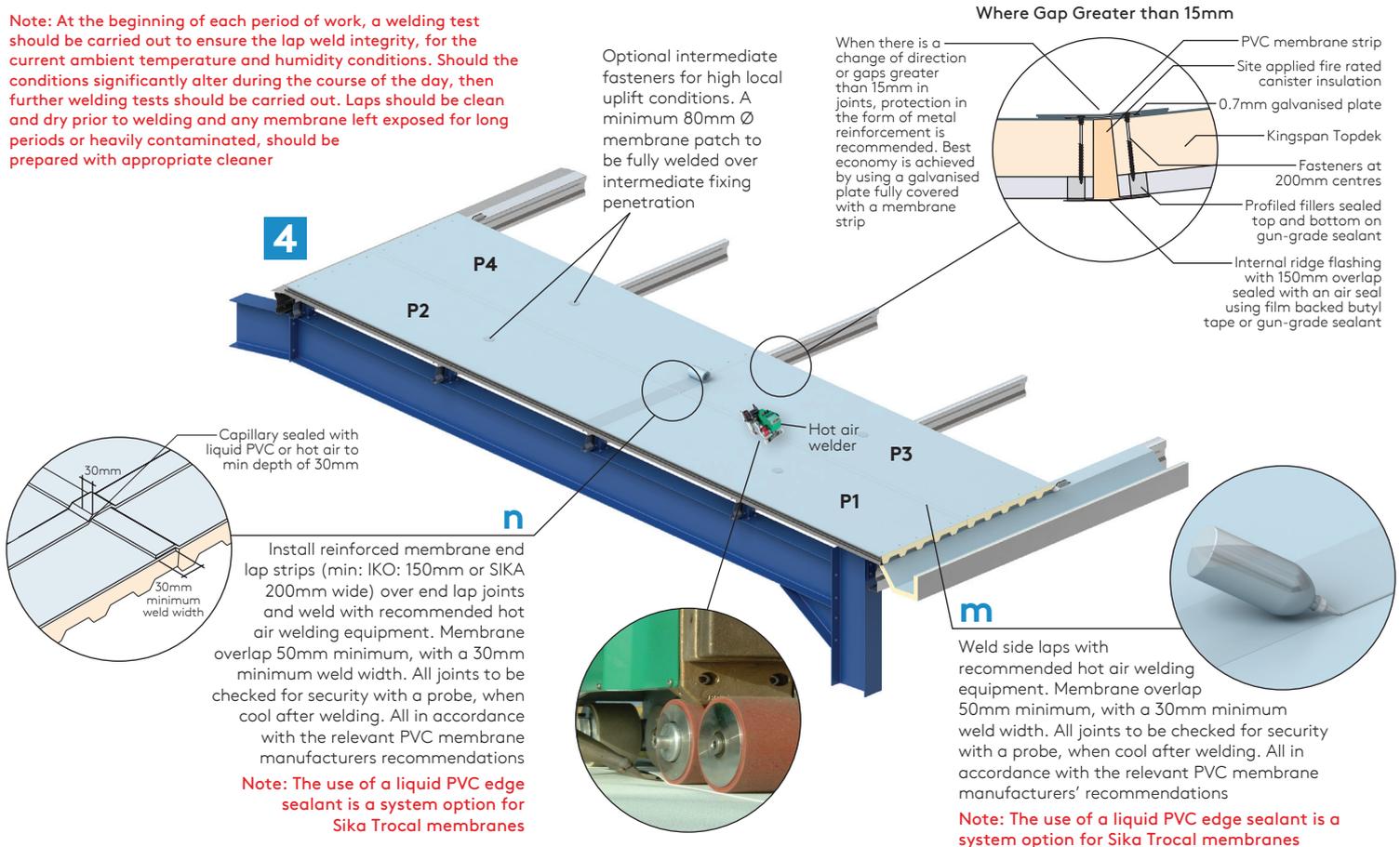
Welded 30mm minimum weld width

514cw 50mm wide double sided acrylic tape

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Note: At the beginning of each period of work, a welding test should be carried out to ensure the lap weld integrity, for the current ambient temperature and humidity conditions. Should the conditions significantly alter during the course of the day, then further welding tests should be carried out. Laps should be clean and dry prior to welding and any membrane left exposed for long periods or heavily contaminated, should be prepared with appropriate cleaner



4

P4

P2

n

Hot air welder

P3

P1

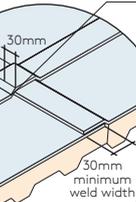
m

Where Gap Greater than 15mm

When there is a change of direction or gaps greater than 15mm in joints, protection in the form of metal reinforcement is recommended. Best economy is achieved by using a galvanised plate fully covered with a membrane strip

- PVC membrane strip
- Site applied fire rated canister insulation
- 0.7mm galvanised plate
- Kingspan Topdek
- Fasteners at 200mm centres
- Profiled fillers sealed top and bottom on gun-grade sealant
- Internal ridge flashing with 150mm overlap sealed with an air seal using film backed butyl tape or gun-grade sealant

Capillary sealed with liquid PVC or hot air to min depth of 30mm



Install reinforced membrane end lap strips (min: IKO: 150mm or SIKA 200mm wide) over end lap joints and weld with recommended hot air welding equipment. Membrane overlap 50mm minimum, with a 30mm minimum weld width. All joints to be checked for security with a probe, when cool after welding. All in accordance with the relevant PVC membrane manufacturers recommendations

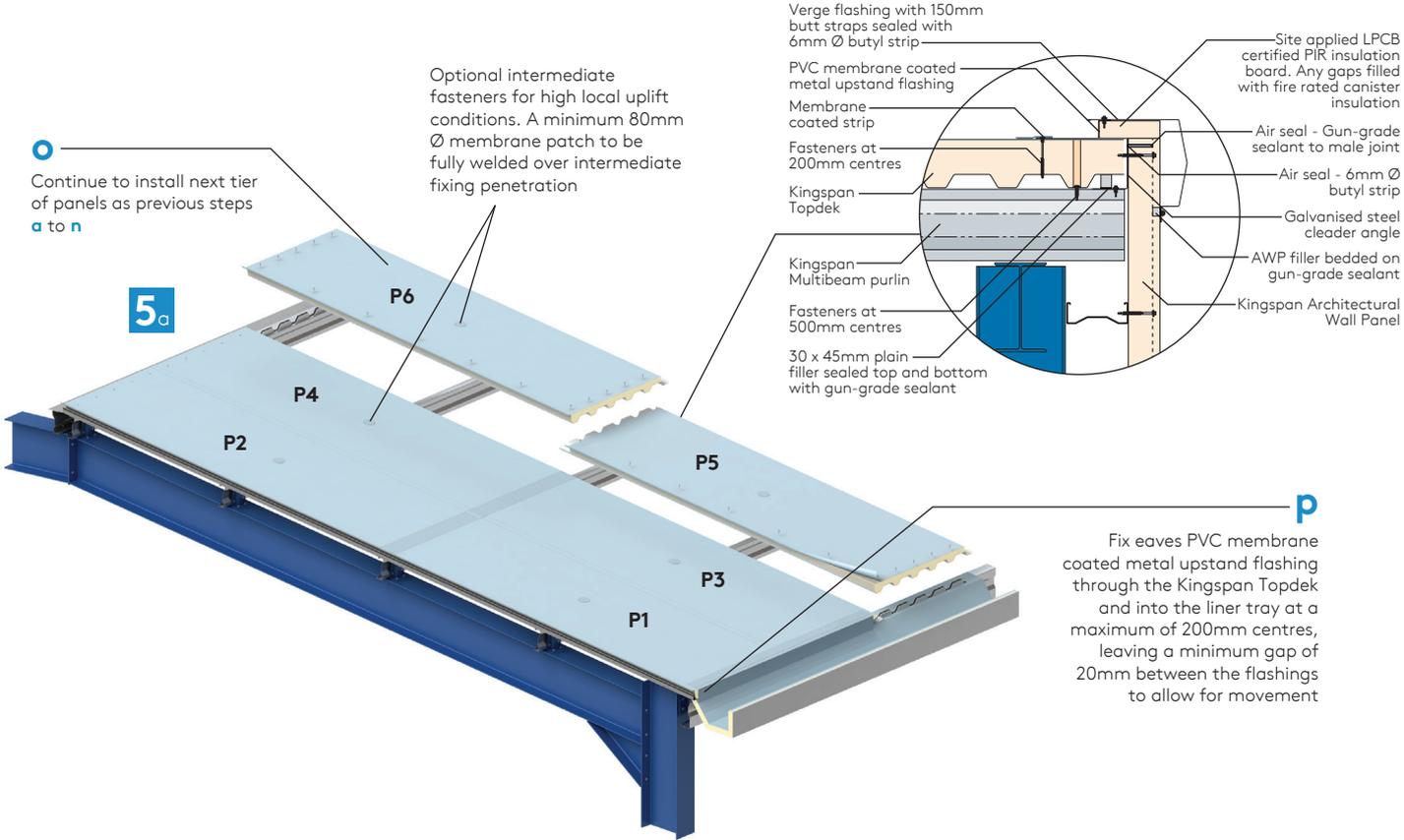
Note: The use of a liquid PVC edge sealant is a system option for Sika Trocal membranes

Weld side laps with recommended hot air welding equipment. Membrane overlap 50mm minimum, with a 30mm minimum weld width. All joints to be checked for security with a probe, when cool after welding. All in accordance with the relevant PVC membrane manufacturers' recommendations

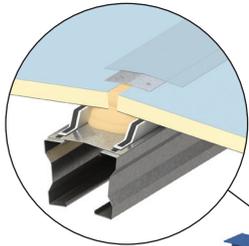
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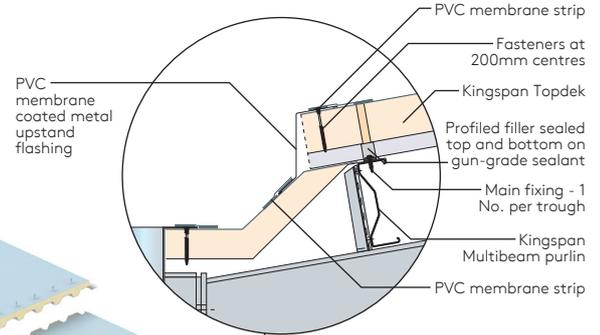
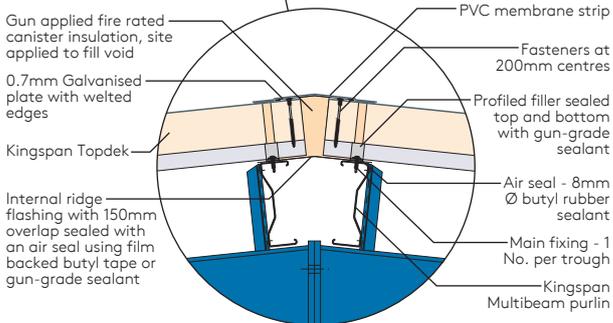
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5_b

Fix galvanised ridge flashing through the Kingspan Topdek insulated roof panel and into the liner tray at a maximum of 200mm centres, leaving a minimum gap of 20mm between the flashings to allow for expansion. Install and weld reinforced ridge membrane lap strip with recommended hot air welding equipment.

Membrane overlap 50mm minimum, with a 30mm minimum weld width. All joints to be checked for security with a probe, when cool after welding. All in accordance with the relevant PVC membrane manufacturers' recommendations



Note: Progress with remainder of roof and repeat installation procedures to suit project design layout

P6
P4
P2
P3
P5
P1

9

Install reinforced PVC membrane lap strips to the top, bottom and butt joints of the eaves PVC membrane coated metal upstand flashing. Weld membrane lap strips with recommended hot air welding equipment. Membrane overlap 50mm minimum, with a 30mm minimum weld width. All joints to be checked for security with a probe when cool after welding. All in accordance with the relevant PVC membrane manufacturers' recommendations

Installation guides are available for most of Kingspan insulated roof and wall panels.

Please call Kingspan Technical Services on:

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www.kingspanpanels.co.uk / www.kingspanpanels.ie

