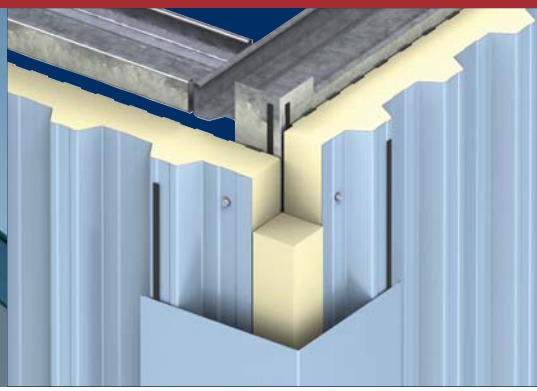
Insulated Panels

CI/SfB (4-) Rh2

August 2009

INSULATED **ROOF** & **WALL** SYSTEMS



# KS1000 FC

## Box Profiled Insulated Panel System

Approved to LPS 1181
Certificate No's. 186a & 260a

Kingspan®

# KS1000 FC provides low air leakage and guaranteed thermal performance

The paper we have printed on is from 80% post-consumer waste and the remaining 20% pulp is TCF (Totally Chlorine Free). This fibre is FSC certified (see fsc.org for details). In recognition, the range has been awarded both the NAPM and Eugropa recycled marks, two of the most prestigious and recognisable recycled certificates available. The ink we have used is vegetable based, allowing the document to be recycled.

Sustainable Forest

Recyclable

Vegetable Based

# Contents



# Introduction

Kingspan KS1000 FC is an insulated roof and wall system which has a recurring box sectional profile.

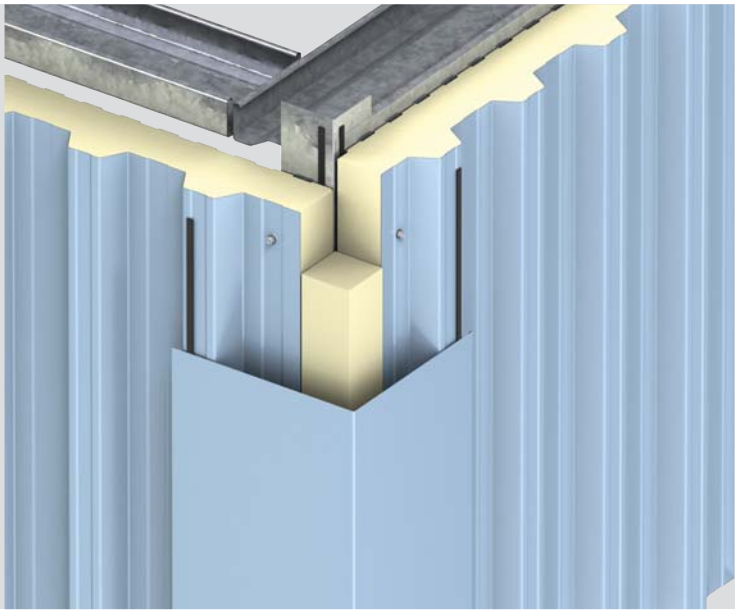
KS1000 FC provides a greater choice for designers and property owners who require the aesthetics of a regular repeating profile. The system can be laid horizontally or vertically on walls and can be used where planning constraints require the profile to match existing adjacent buildings.

KS1000 FC can also be used in roofing applications and compliments the existing range of Kingspan roof and wall profiles, working particularly well with the popular KS1000 RW trapezoidal panel system and Kingspan EnergiPanel™. The simple integration alongside doors, windows, glazing, louvers and traditional construction materials makes it ideal for both new build and refurbishment projects.

KS1000 FC is a single component, single fix insulated roof and wall system which provides simple and fast site installation.

## System Benefits

- Property & Business Protection - Loss Prevention Certification Board (LPCB) LPS 1181 certified insurer approved FIREsafe systems deliver certainty of performance and insurability.
- Fully complies with Part L2 (England & Wales) Building Regulations, Part F2 (Northern Ireland), Part L (Republic of Ireland) and Section 6 (Scotland) Technical Handbooks.
- High performance thermal insulation built-in.
- FIBREfree - No threat of loose fibres into internal environment.
- Lifetime insulation continuity, thermal performance and airtightness ($5m^3/hr/m^2$) certainty.
- Suitable for vertical or horizontal application and available in lengths of up to 29.3 metres.
- Can be installed as a roof or wall application and integrates seamlessly with Kingspan EnergiPanel™.
- Simple integration with doors, windows, glazing, louvres and traditional construction materials.
- Environmentally sustainable system - zero ODP and non-deleterious.
- Guranteed for up to 25 years for thermal and structural performance through Kingspan Total Panel Guarantee.
- Quality approved to ISO 9001: 2000.
- Kingspan's manufacturing plants are ISO 14001 (Environmentally) and ISO 18001 (Health & Safety) accredited.



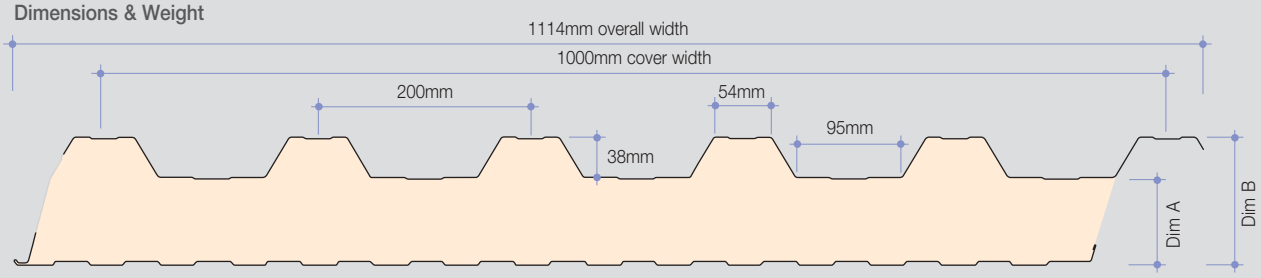
# Product Data

## Application

Kingspan KS1000 FC is a through fixed insulated roof and wall system which can be used for roof applications with roof pitches of 4° or more and wall applications, laid vertically or horizontally.

| Product Reference | Application Description |
|---|---|
| KS1000 FC | KS1000 FC Box Profile insulated panel with Loss Prevention Certification Board (LPCB) approval for roof and wall applications. |

### Dimensions & Weight




| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Dimension A - core thickness nominal (mm) | | 34 | 46 | 50 | 68 | 80 | 100 |
| Dimension B - overall dimension (mm) | | 72 | 84 | 88 | 106 | 118 | 138 |
| Weight kg/m² | 0.5/0.4 steel | 10.0 | 10.5 | 10.9 | 11.5 | 12.0 | 12.8 |
| Weight kg/m² | 0.63/0.4 steel | 11.5 | 12.0 | 12.2 | 12.9 | 13.4 | 14.2 |

## Product Tolerances

| | | |
|---|---|---|
| Cut to Length | -5mm | +5mm |
| Linear Sheet Length | -5mm | +5mm |
| Cover Width | -2mm | +2mm |
| Thickness | -2mm | +2mm |
| End Square | -3mm | +3mm |

## Panel End Cut Back

All panels are normally produced with a minimum cut back of 25mm. Cut backs up to 150mm can also be manufactured. If flush ended panels (no cut back) are required they can be manufactured with one end flush and a 25mm cut back on the opposite end, based on panels exceeding 1.8m in length. The recommended cut back for panel end lapping is 100mm for vertically laid wall applications. For horizontally laid wall applications a vertical top-hat joint is recommended. Panels less than 1.8m long, which require a cut back can be provided, but will be charged at full 1.8m price, plus cutting cost.

## Available Lengths

Standard lengths 1.8 to 12 metres, 12 to 29.3 metres can be supplied but may be subject to a transport surcharge.

## Material - Steel

### Substrate

- S220GD+ZA hot-dip zinc alloy coated metal to BS EN10214: 1992. Standard external sheet thickness 0.5mm, 0.63mm with horizontally laid Kingspan Spectrum™. Standard internal sheet thickness 0.4mm.

### Coatings – External Weather Sheet

- Kingspan XL Forté™: 200 micron thick high performance coating applied to the weather side of the panel. Designed to achieve high levels of durability and colour stability, the product is highly resistant to damage in transit and on-site.
- Available in the colours:
  - **Goosewing Grey (BS 10A05)**
  - **Gull Grey (BS 18B17)**
  - **Merlin Grey (BS 18B25)**
  - **Anthracite (RAL 7016)**
  - **Grey White (RAL 9002)**
  - **Juniper Green (BS 12B29)**
  - **Sapphire Blue (RAL 5003)**
- Kingspan Spectrum™: Polyurethane semi-gloss coating.
- Available colour in Kingspan Spectrum™:
  - **Silver Metallic (RAL 9006)**
- Non standard colours are available subject to quantity.

Please note that the colour range is correct at time of going to press. Contact **enviro***care*® Technical Services for further details.

### Coatings – Internal Liner Sheet

- Bright White Polyester: Coating developed for use as the internal lining of insulated panels. Standard colour is 'bright white' with an easy clean surface.

## Insulation Core

The core of KS1000 FC Box Profile is a FIRE*safe*, closed cell PIR insulation which is non-deleterious with zero Ozone Depletion Potential (zero ODP).

## Performance

### Thermal Insulation

| Insulation Core Thickness (mm) | U-value - Thermal Transmittance (W/m²K) | | | |
|---|---|---|---|---|
| | England & Wales | Scotland | Northern Ireland | Republic of Ireland |
| 34 | 0.48 | 0.48 | 0.48 | 0.48 |
| 46 * | 0.36 | 0.36 | 0.36 | 0.36 |
| 50 ++ | 0.35 | 0.35 | 0.35 | 0.35 |
| 68 ± | 0.27 | 0.27 | 0.27 | 0.27 |
| 80 ± | 0.23 | 0.23 | 0.23 | 0.23 |
| 100 ± | 0.19 | 0.19 | 0.19 | 0.19 |

* Recommended panel thickness to allow compliance with Part L (Republic of Ireland) - based on the overall heat loss method.

++ Recommended wall panel thickness to allow compliance with Part L2 (England & Wales) and Part L (Republic of Ireland) - based on the overall heat loss method.

± Recommended roof panel thicknesses to allow compliance with Part L2 (England & Wales), Section 6 (Scotland), Part F2 (Northern Ireland) and Part L (Republic of Ireland) - based on the elemental heat loss method.

### Biological

KS1000 FC Box Profile panels are resistant to attack from mould, fungi, mildew and vermin. No urea formaldehyde is used in the manufacture of the panels.

### Fire

Steel inner and outer facings have a Class 1 surface spread of flame to BS 476-7: 1997, and are Class 0 as defined by the Building Regulations.

The panel is certified 34 minutes integrity and 15 minutes insulation when tested to BS EN 1364-1: 1999.

KS1000 FC Box Profile is approved by the Loss Prevention Certification Board (LPCB) to LPS1181. KS1000 FC Box Profile panels have a FIRE*safe* core which has been specially formulated to provide the following benefits:

- Stable protective char
- No flash over
- No flame spread
- No flame propagation

### Acoustics

All KS1000 FC Box Profile panels have a predicted single figure weighted sound reduction Rw = 25dB.

## Quality

Kingspan insulated panels are manufactured from the highest quality materials, using state of the art production equipment to rigorous quality control standards, approved to ISO 9001: 2000. Kingspan manufacturing plants are ISO 14001 (Environmentally) and ISO 18001 (Health & Safety) accredited.

## Guarantees

Kingspan insulated panels are available with the Kingspan Total Panel Guarantee offering 25 years thermal and structural performance guarantee.

## Packing

### Standard Packing

KS1000 FC Box Profile panels are stacked face up and require turning over during unpacking / erection.

Removable hot melt adhesive is laid between each panel. The top, bottom, sides and each end are protected with polystyrene and timber packing and the entire pack is wrapped in polythene.

The number of panels in each pack depends on the panel thickness, as shown in the table below. Typical pack height is 1100mm.

| Insulation core thickness (mm) | 34 | 46 | 50 | 68 | 80 | 100 |
|---|---|---|---|---|---|---|
| Panel per pack | 16 | 14 | 12 | 12 | 10 | 9 |

### Sea Freight

Fully timber crated packs are available on projects requiring delivery by sea freight shipping, at additional cost. Alternatively, steel containers can be used. Special loading charges apply.

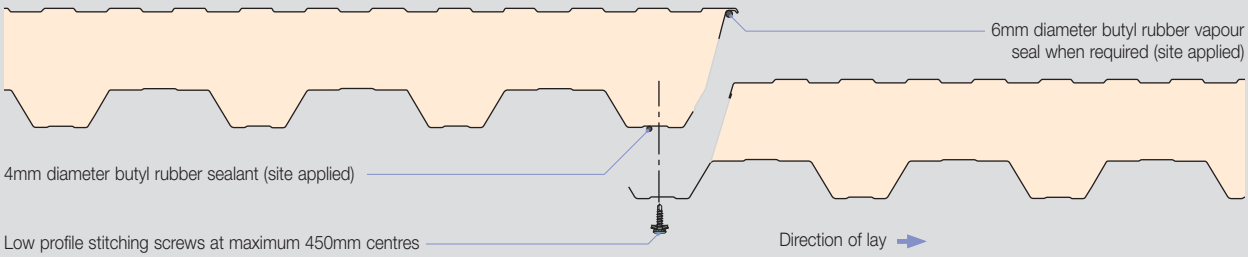
## Delivery

All deliveries (unless indicated otherwise) are road transport to project site. Off loading is the responsibility of the cladding contractor or installer.

# Construction Details

## Side Lap Detail

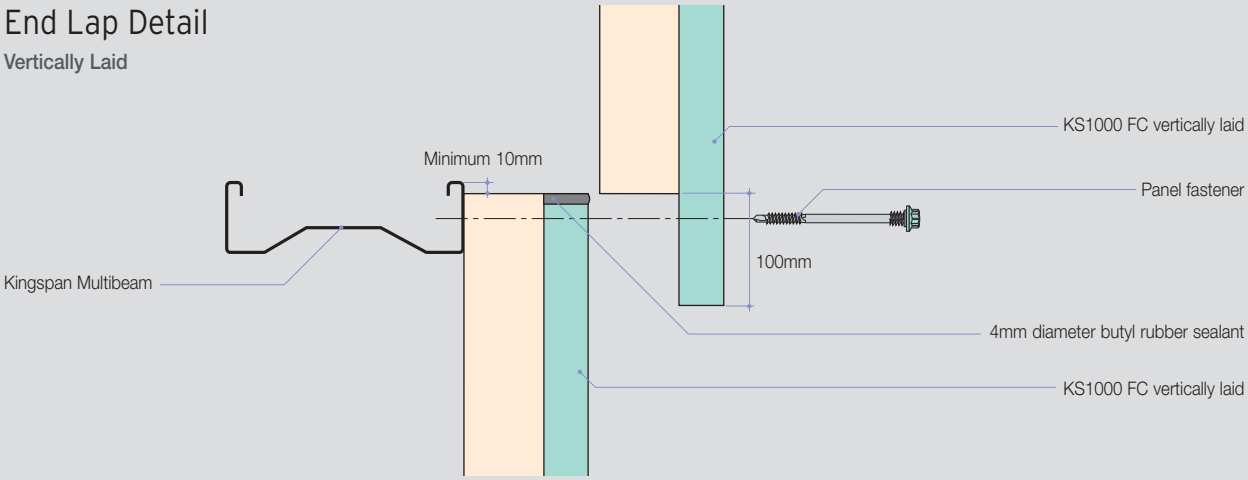
**Vertically Laid**




**Note:** To ensure correct panel installation side wall panel rails must be correctly aligned prior to insertion of fixings.

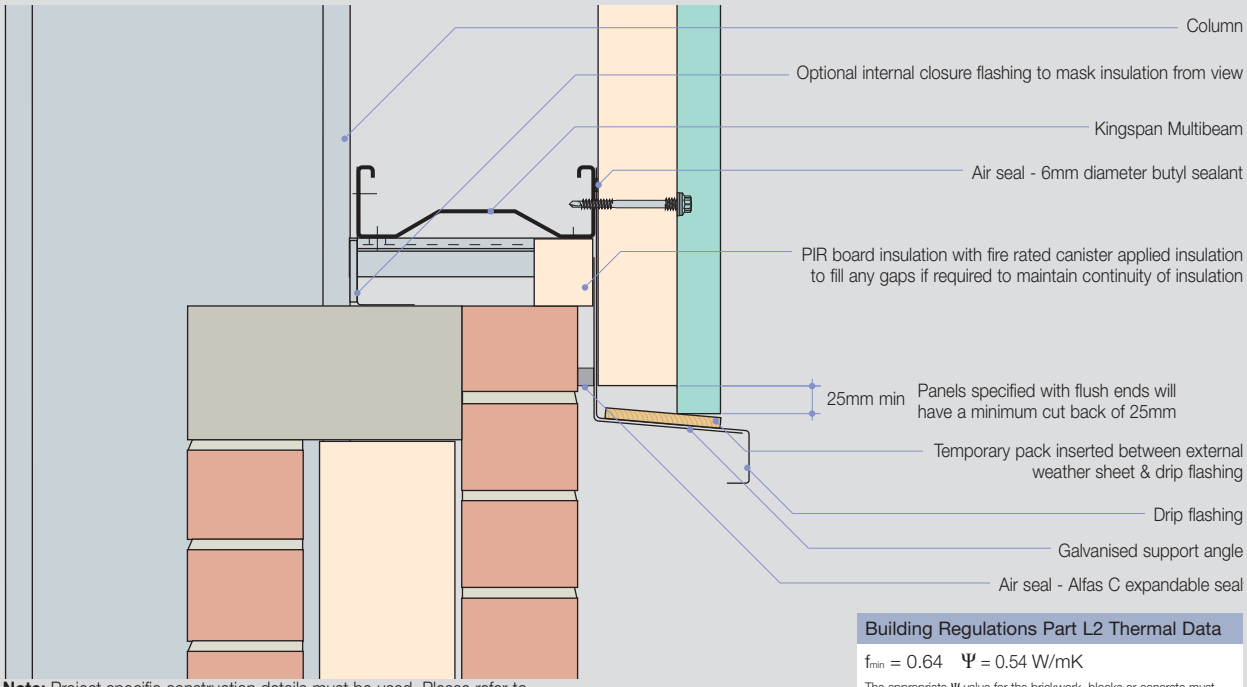
## End Lap Detail

**Vertically Laid**



## Drip Detail

### Vertically Laid




**Note:** Project specific construction details must be used. Please refer to Kingspan Design and Construction Guide for further information.

**Building Regulations Part L2 Thermal Data**

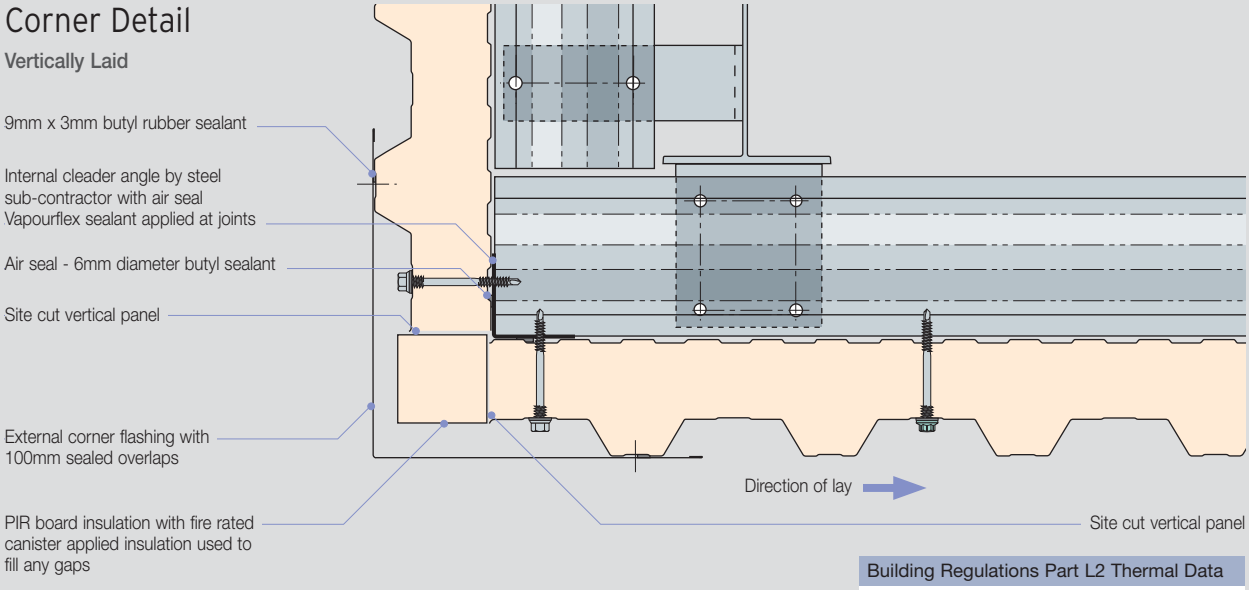
$f_{min}$ = 0.64 $\Psi$ = 0.54 W/mK

The appropriate $\Psi$ value for the brickwork, blocks or concrete must be added to the above $\Psi$ value to obtain the total loss through this junction detail.

The above values are only applicable to the components on this detail. Changes to the components will have an effect on the given values.

## Corner Detail

### Vertically Laid



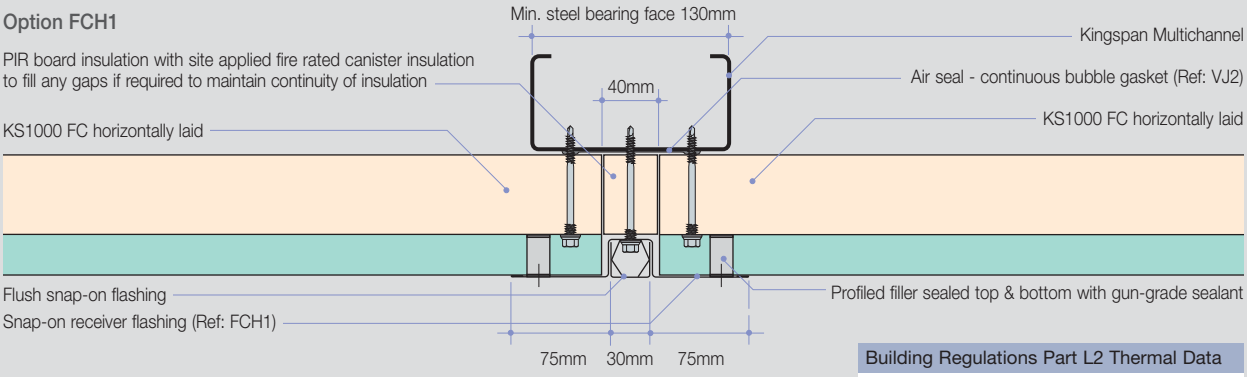

**Building Regulations Part L2 Thermal Data**

$f_{min}$ = 0.95 $\Psi$ = 0.01 W/mK

The above values are only applicable to the components on this detail. Changes to the components will have an effect on the given values.

# Vertical Joint Detail

## Option FCH1



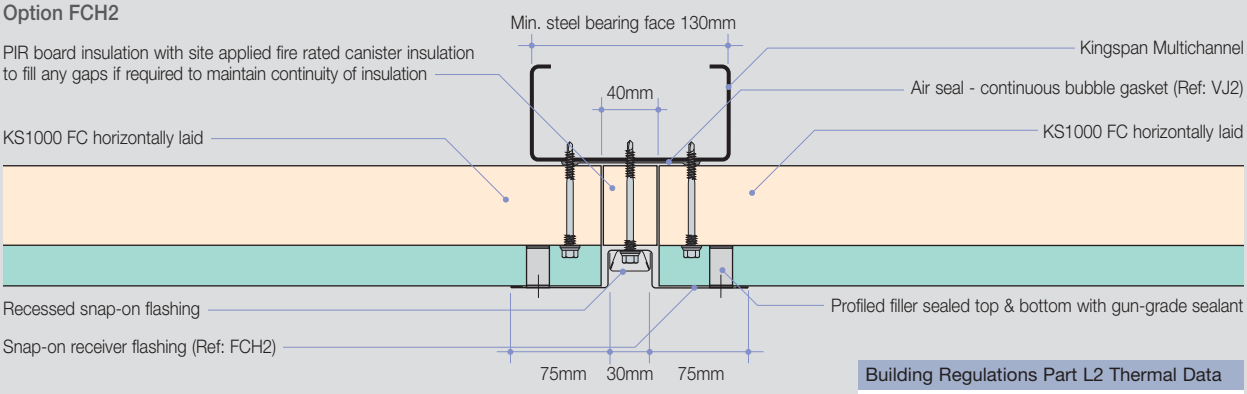

**Note:** Special cut back of 10mm is required for this detail. Please advise when ordering panels.

**Building Regulations Part L2 Thermal Data**

$f_{min}$ = 0.98 $\Psi$ = 0.00 W/mK

The above values are only applicable to the components on this detail. Changes to the components will have an effect on the given values.

## Option FCH2



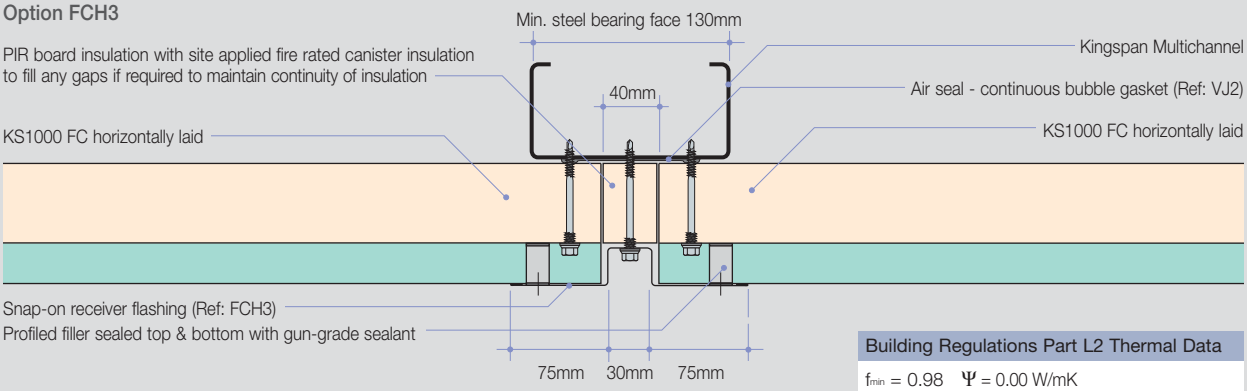

**Note:** Special cut back of 10mm is required for this detail. Please advise when ordering panels.

**Building Regulations Part L2 Thermal Data**

$f_{min}$ = 0.98 $\Psi$ = 0.00 W/mK

The above values are only applicable to the components on this detail. Changes to the components will have an effect on the given values.

## Option FCH3




**Note:** Special cut back of 10mm is required for this detail. Please advise when ordering panels.

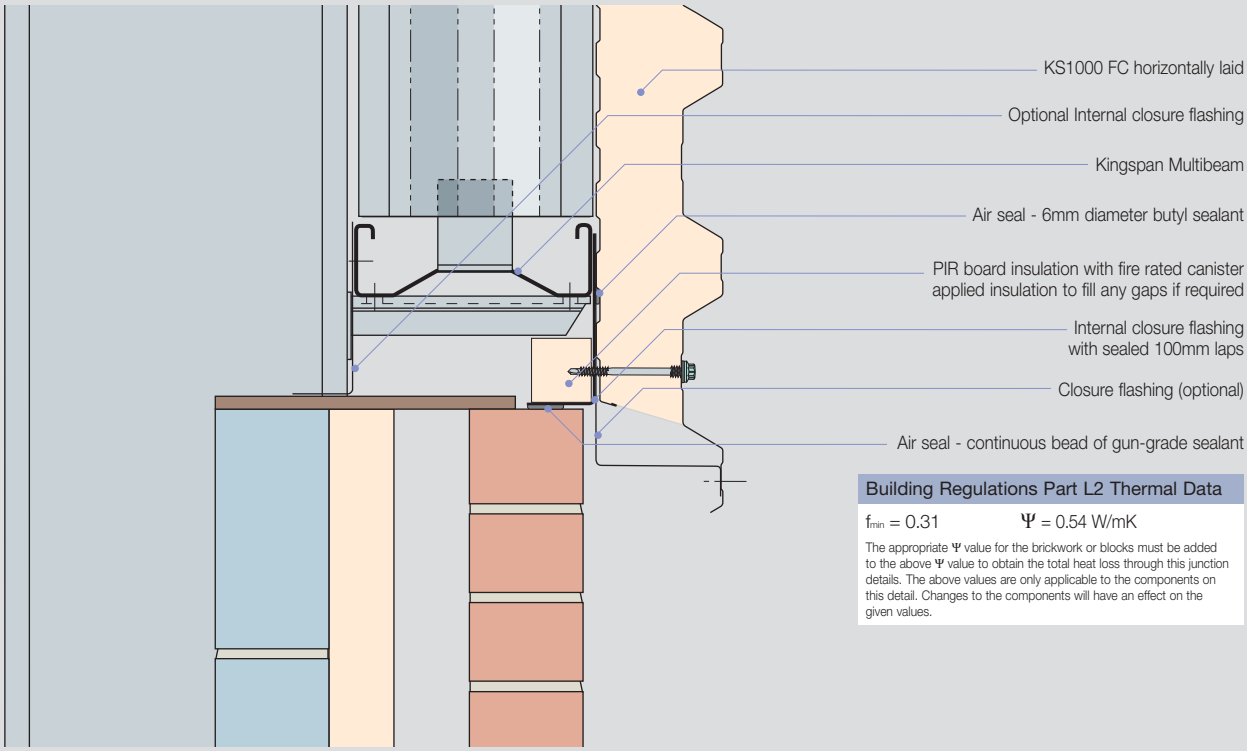
**Building Regulations Part L2 Thermal Data**

$f_{min}$ = 0.98 $\Psi$ = 0.00 W/mK

The above values are only applicable to the components on this detail. Changes to the components will have an effect on the given values.

# Drip Detail

## Horizontally Laid




**Building Regulations Part L2 Thermal Data**

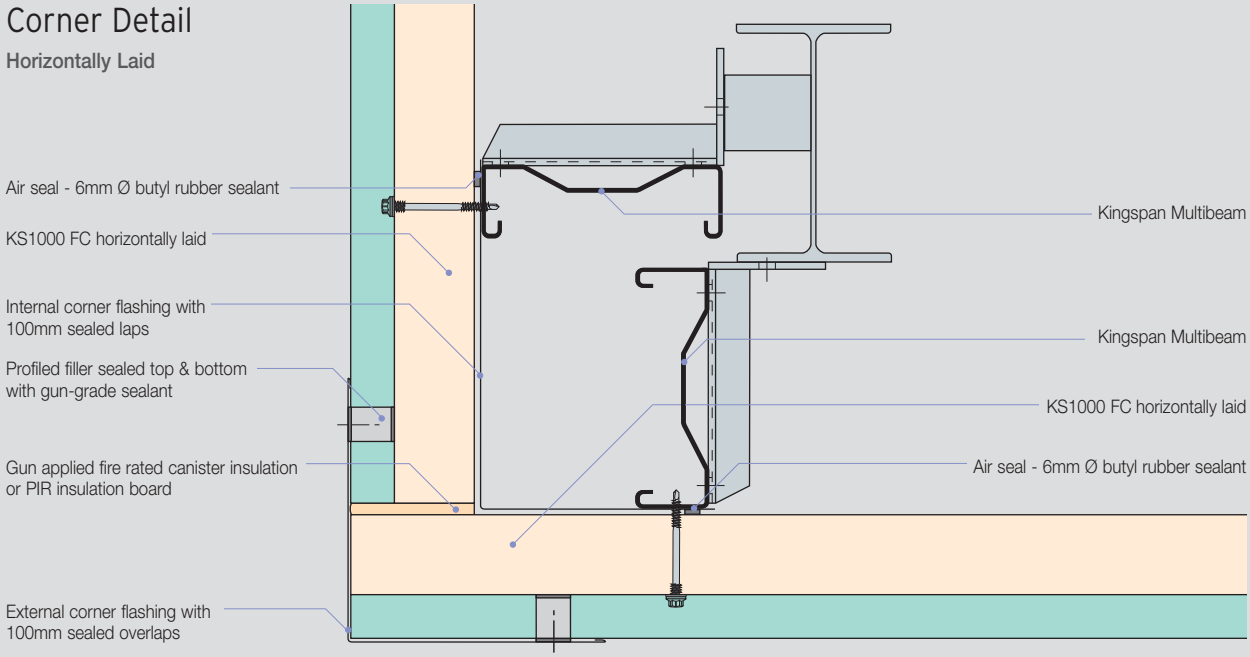
$f_{min}$ = 0.31 $\Psi$ = 0.54 W/mK

The appropriate $\Psi$ value for the brickwork or blocks must be added to the above $\Psi$ value to obtain the total heat loss through this junction details. The above values are only applicable to the components on this detail. Changes to the components will have an effect on the given values.

**Note:** Project specific construction details must be used. Please contact Kingspan ***enviro**care*®** Technical Services for further information.

## Corner Detail

### Horizontally Laid



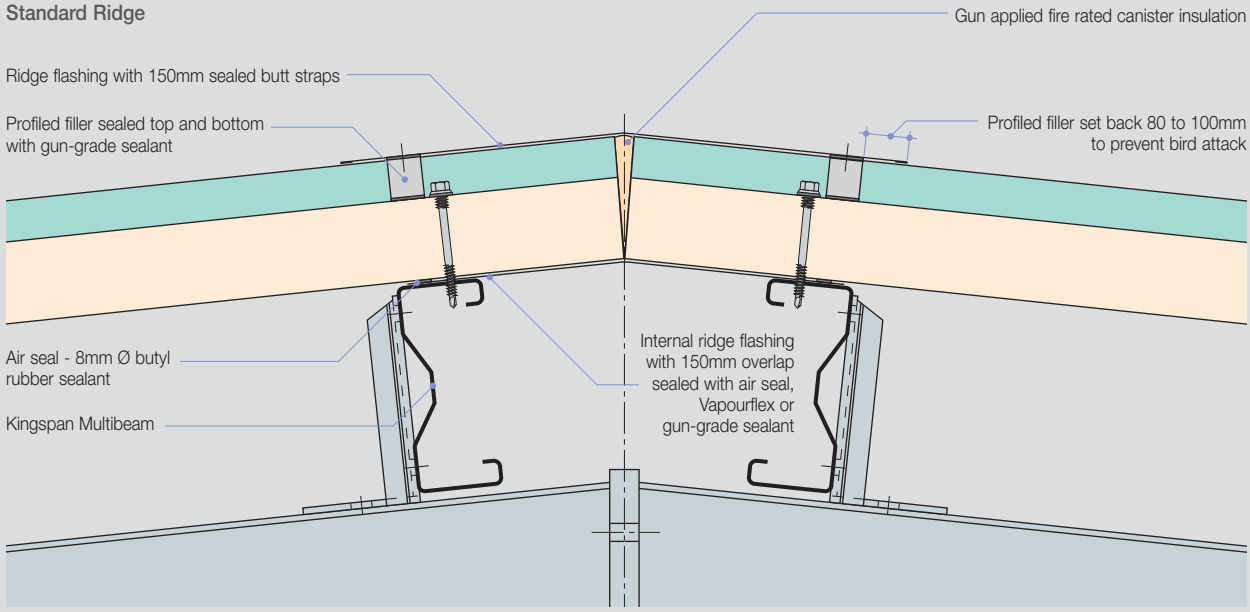

**Building Regulations Part L2 Thermal Data**

$f_{min}$ = 0.91 $\Psi$ = 0.18 W/mK

The above values are only applicable to the components on this detail. Changes to the components will have an effect on the given values.

## Ridge Detail

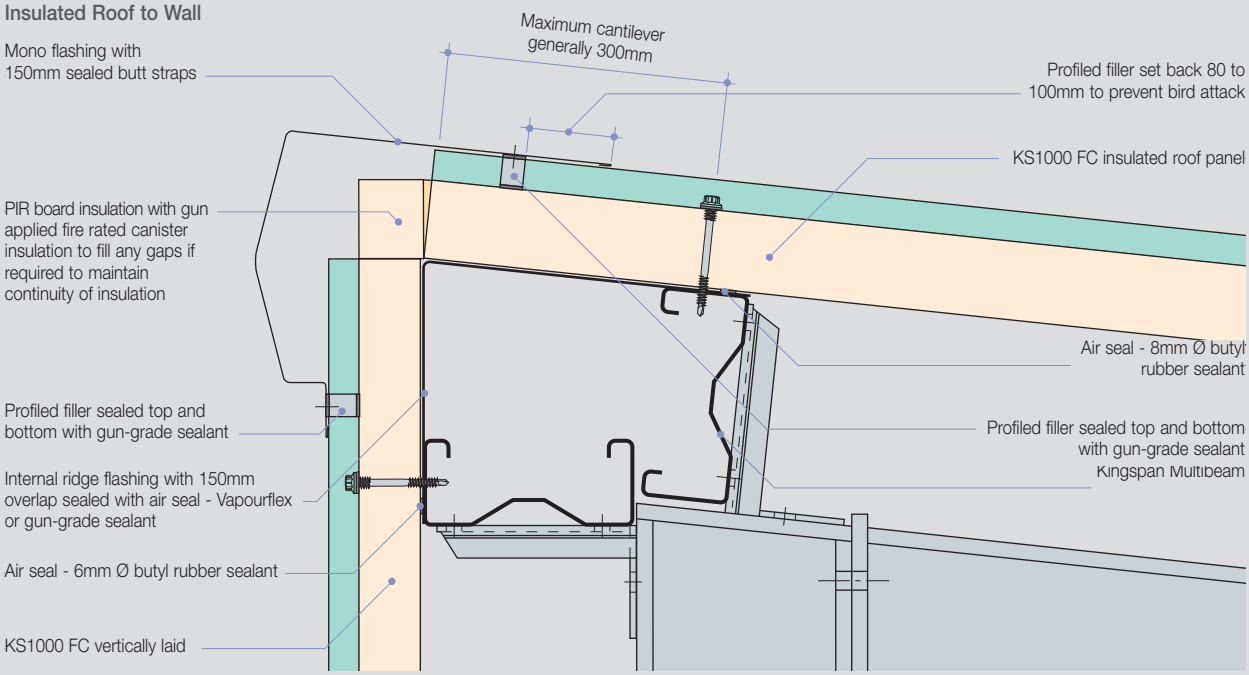
### Standard Ridge




**Note:** For end and side lap details please contact Kingspan **enviro***care*® Technical Services.

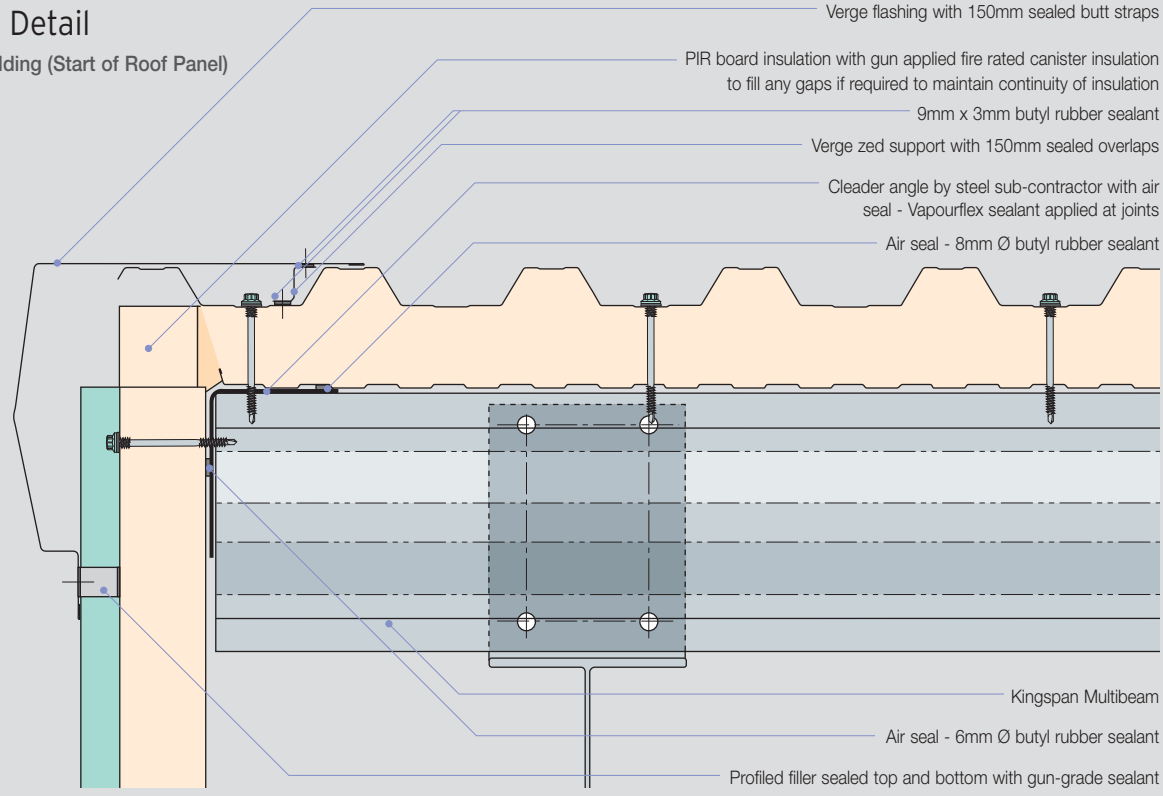
## Mono Ridge Detail

**Insulated Roof to Wall**




## Verge Detail

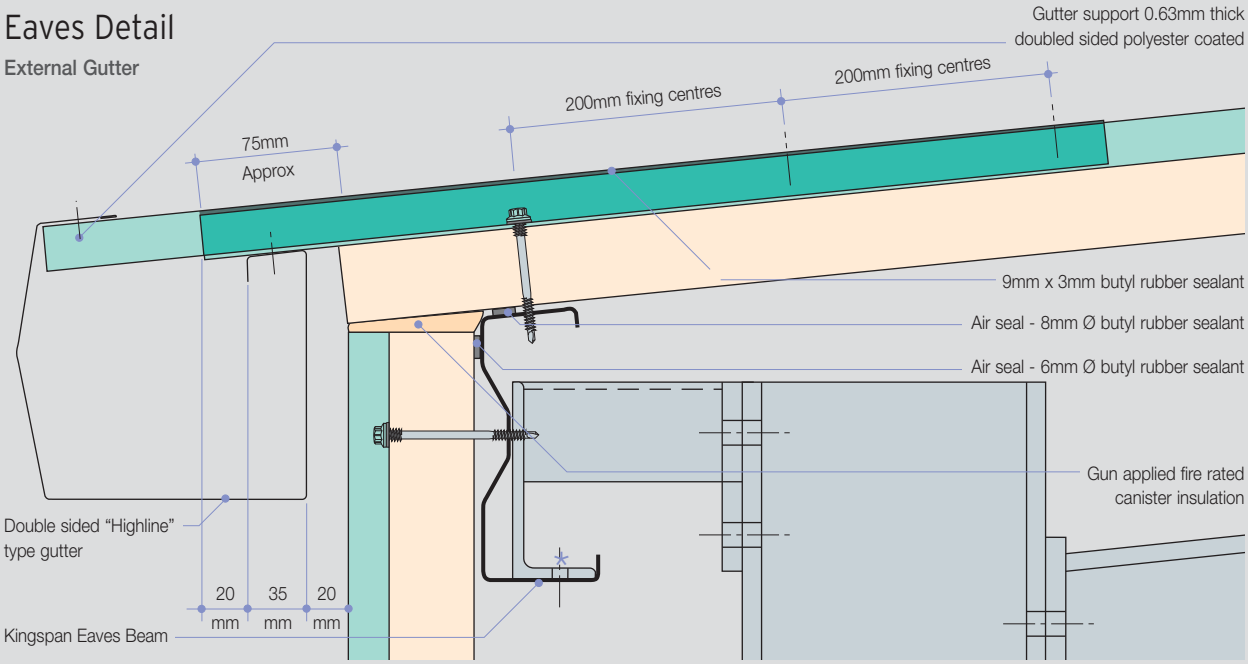
**Wall Cladding (Start of Roof Panel)**




**Note:** Project specific construction details must be used. Please contact Kingspan **enviro***care*® Technical Services for further information.

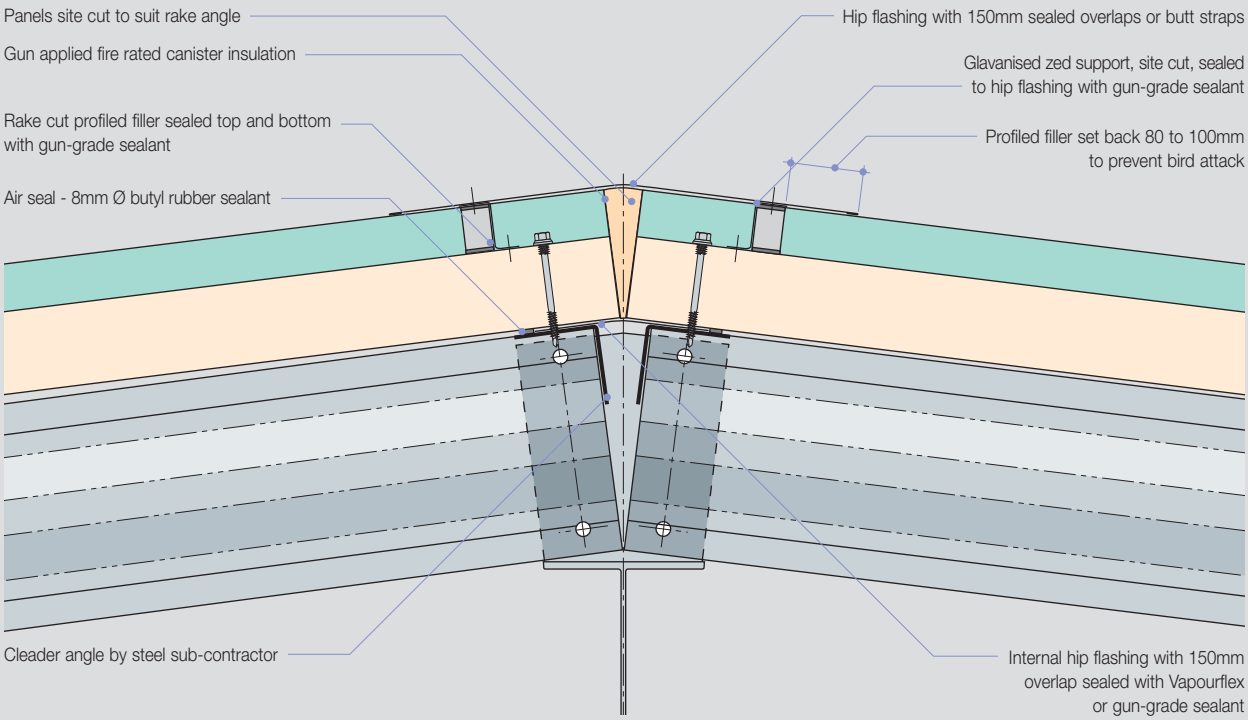
## Eaves Detail

**External Gutter**



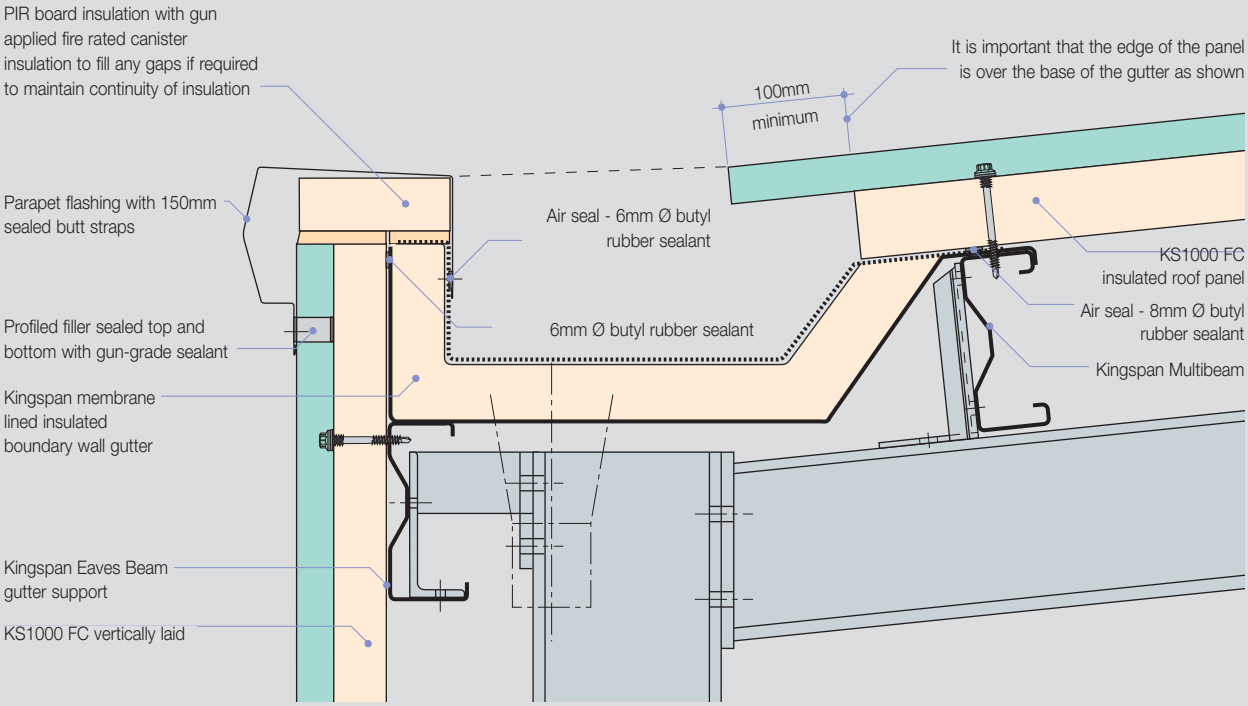

* Air seal - Vapourflex sealant is to be applied over any breaks in supporting secondary steelwork to give a continuous bearing face.

## Hip Detail

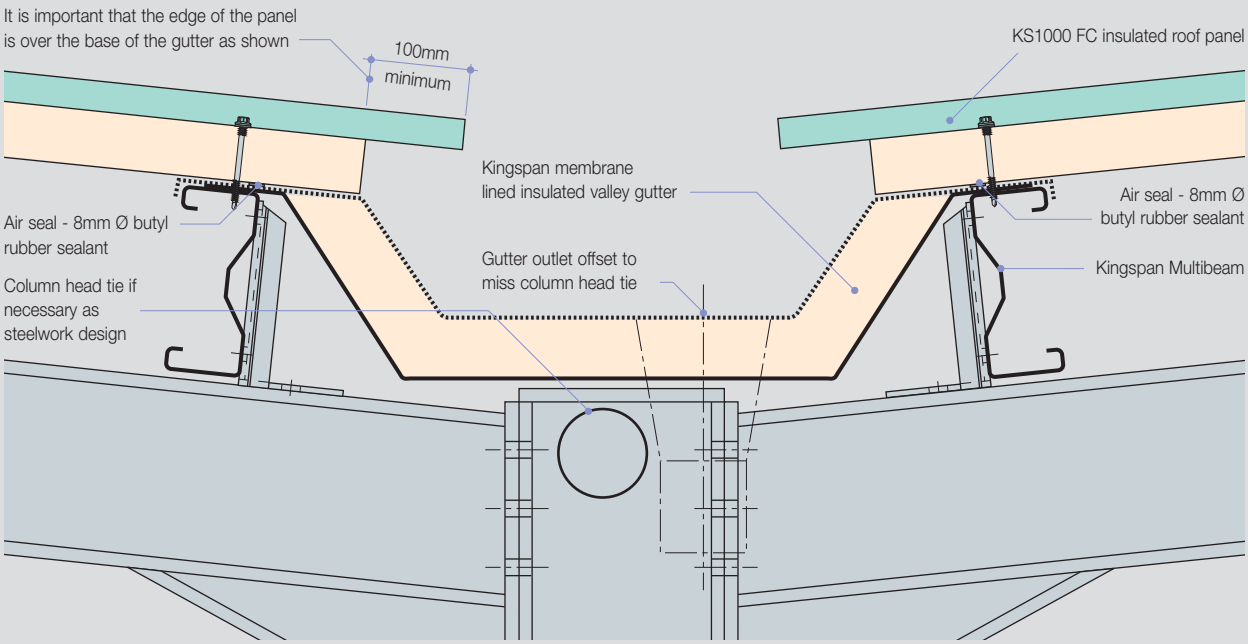



**Note:** Project specific construction details must be used. Please contact Kingspan **enviro***care*® Technical Services for further information.

## Boundary Wall Gutter



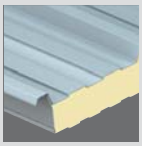

## Valley Gutter Detail



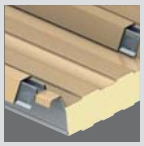
# Kingspan Insulated Roof, Wall & Façade Systems

## Roof Systems

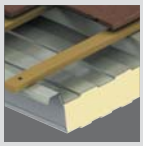
KS1000/2000 RW Trapezoidal



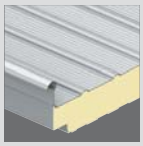
KS1000 SF Secret Fix



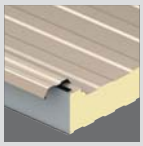
KS1000 TS Slate & Tile Support



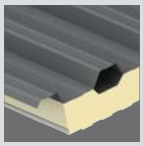
KS500/1000 ZIP Kingzip® Standing Seam



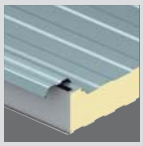
KS1000 LP Lo-Pitch



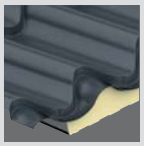
Kingspan EnergiPanel™



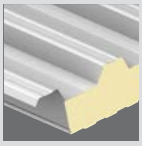
KS1000 CR Curved Roof



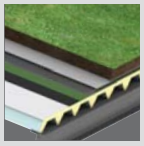
Kingspan Roof Tile



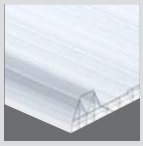
KS1000 FC Box Profile



Kingspan Envirodek®

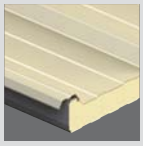


Kingspan Polycarb Rooflight

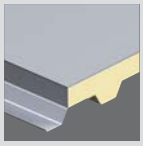


Kingspan Upstand Rooflight

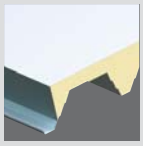
KS1000 DR/DRC Trapezoidal



KS1000 TD Topdek

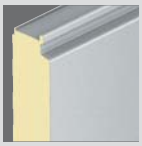


KS1000 Topspan

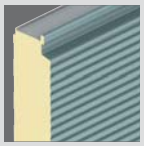


## Wall & Façade Systems

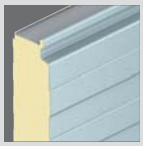
KS600, 900 & 1000 Optimo™



KS600, 900 & 1000 MR Micro-Rib

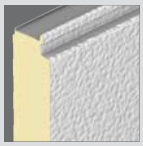


KS600, 900 & 1000 EB Euro-Box

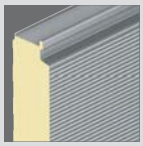


KS600, 900 & 1000 FL Flat

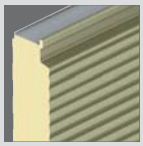
KS600, 900 & 1000 FL-S Stucco



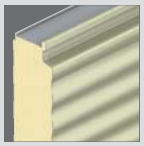
KS600, 900 & 1000 MM Mini-Micro



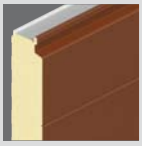
KS600, 900 & 1000 CX Convex



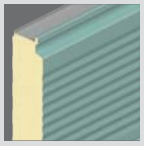
KS600, 900 & 1000 WV Wave



KS600, 900 & 1000 PL Plank

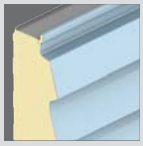


KS1000 TL Tramline

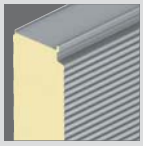


KS1000 CW CurveWall

KS1000 LV Louvre

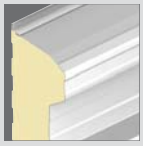


KS600, 900 & 1000 LS Longspan™

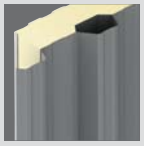


KS1000/2000 RW Trapezoidal

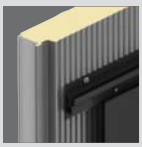
KS1000 FC Box Profile



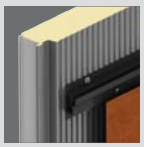
Kingspan EnergiPanel™



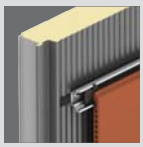
Kingspan Thermastone



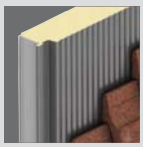
Kingspan WoodTherm®



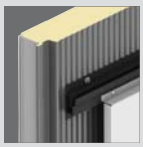
Kingspan Thermatile



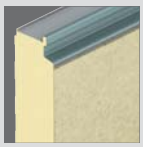
Kingspan Thermabrick™



Kingspan Thermatallic™

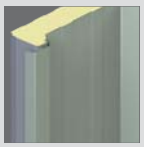


Kingspan Render Panel



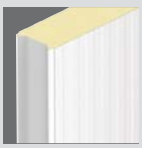
Kingspan Wall-Lite

KS1000 DR Trapezoidal



## Controlled Environment Systems

KS1100 CS Equi-Bead



KS1100 CS Mini-Bead



KS1100 CS Flat



KS1100 CS Micro-Rib



## Ancillaries

Gutters, Tophats & Flashings




**Kingspan Limited**

UK: Telephone: +44 (0) 1352 716100 Fax: +44 (0) 1352 710161 Email: info@kingspanpanels.com
Ireland: Telephone: +353 (0) 42 96 98500 Fax: +353 (0) 42 96 98572 Email: sales.ire@kingspanpanels.com


Details for the following countries; Australia, Belgium, Czech Republic, France, Germany, Hungary, Netherlands, New Zealand, Norway, Poland, Romania, Slovakia & Sweden can be found by visiting our website **www.kingspanpanels.com** or our group website **www.kingspan.com**