

Insulated Panels  
UK & Ireland

# FIRE-ENGINEERED BOUNDARY WALL SYSTEM

## TECHNICAL GUIDANCE

Single-storey Steel-framed Buildings

Compliant with BCSA  
Boundary Elevations  
Technical Specification



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Kingspan Fire-Engineered  
Integrated Boundary Wall  
Systems have been developed  
in collaboration with the  
following industry partners:



# EXECUTIVE SUMMARY

We are proud to launch the industry’s first fully integrated system solution designed specifically to support fire-resistant Kingspan QuadCore® and Eurobond insulated panels, encompassing every element from primary structure through to the building envelope.

This fire engineering approach provides a complete, tested, and verified boundary wall system package, ensuring compliance, and certainty of performance.

This technical guidance aligns fully with the **BCSA Technical Specification for Boundary Elevations**, effective from 1 July 2025, which Kingspan contributed to as part of the industry working group in collaboration with the SCI, BCSA, and other stakeholders.

### SCI-assessed and Certified

Our solution has been rigorously assessed and certified by the Steel Construction Institute (SCI) giving all project stakeholders full confidence in its technical integrity and long-term asset performance combined with a clear pathway to compliance with the BCSA guidance.

To view the SCI assessment certificate, please click [here](#).



### Full Design Scope: Vertical and Horizontal Insulated Panels

The BCSA Technical Specification presents an engineered solution to justify the use of standardised wall cladding tests at actual building scale, overcoming limitations of tested boundary conditions present in typical small scale 3 metre x 3 metre furnace tests. The industry-agreed approach uses engineering justification to prove a load path, in tension, through the fire-resisting external wall system back to a Capable Member. The industry working group agreed that all other solutions were not viable without full-scale testing.

The Kingspan Fire-Engineered Boundary Wall Systems accommodates both vertically and horizontally-laid insulated panels, hanging in tension from a capable structural member. This solution is backed by extensive engineering calculations derived from standardised and ad-hoc system testing. All calculations are to BS EN 1993-1-2: 2005, with fire-resistant insulated panels, tested to BS EN 1364-1: 2015 and classified to BS EN 13501-2: 2016.

### Collaborative, Industry-leading Approach

Developed in partnership with key industry stakeholders, our system integrates:

- primary steel structure;
- secondary steelwork;
- fire-resistant Kingspan QuadCore® and Eurobond insulated panels;
- approved insulated panel fasteners; and
- Capable Member intumescent passive fire protection.

This collaborative process has produced industry-validated construction details, ensuring regulatory compliance, buildability and durability.

### Technical Innovations

- Cladding hung in tension from a structural Capable Member at height.
- Analytically proven load paths through the external weathering sheet.
- Optimised intumescent coating thickness when used in conjunction with Kingspan QuadCore® and Eurobond insulated panels.
- Comprehensive fastener tables: assisting architects and installers in selecting appropriate and correct fasteners.
- Support load tables for horizontally laid cladding: streamlining fabrication for steelwork contractors.

### End-to-end Technical Support

Kingspan’s expert technical team provides comprehensive technical support to design, construction teams and building control throughout the project lifecycle, ensuring appropriate specification, detailing, and delivery from concept to completion.

### Conclusion

The Kingspan Fire-Engineered Boundary Wall System redefines boundary wall design for fire safety and performance. This complete integrated system brings together structure, external envelope, fasteners, and passive fire protection into a single, SCI-assessed package, delivering an optimised, fully compliant, and construction-ready solution for today’s fire safety requirements.

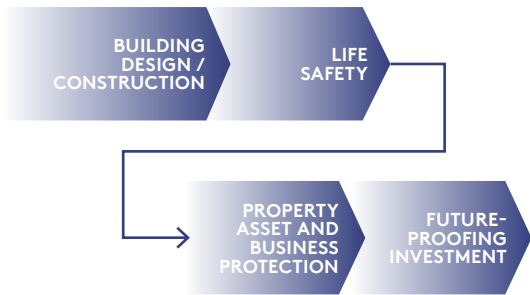


# A NEW APPROACH: FOR LIFE & ASSET PROTECTION

Kingspan Insulated Panels and Kingspan Structural Products were active participants in the industry-wide steering group, alongside the BCSA and the SCI.

## Reasons for Change

In recent years, all aspects of fire performance have been subject to increased scrutiny, as follows:



The July 2025, guidance took into account the rapid rise and growing demand for larger buildings used for manufacturing, logistics and distribution centres. This increased heights, spans, lengths, volumetric space, structural grids and building contents fire load risks.

## Objective of BCSA Boundary Wall Technical Specification

The objective of **BCSA Boundary Elevations Technical Specification - July 2025 Guidance** is to ensure that, in the fire limit state, an adequate load path exists to ensure that the required fire-resisting cladding remains supported and that the boundary elevation remains vertical, preventing the spread of fire.

The BCSA technical specification sets out the requirements for an engineered approach where the fire-resistant cladding is hung from a fire-protected structural support member(s) hereafter referred to as 'Capable Member(s)'. No reliance is placed on unprotected secondary steelwork (eaves beam / side rails) unless the members and their connections have been designed for the fire condition. The Capable Member supports back to the main frame should also be protected.

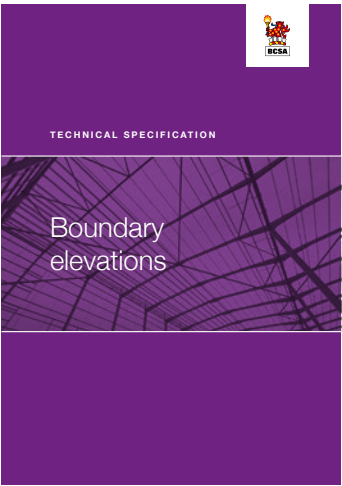
The technical specification has been developed assuming the single-storey building is a portal frame, however the principles are equally applicable to any single-storey, steel-framed building.

# BCSA BOUNDARY ELEVATIONS TECHNICAL SPECIFICATION JULY 2025 GUIDANCE

It is assumed that the primary steelwork and Capable Member(s) are protected by passive fire protection, such as intumescent coatings or fire protective boards.

The technical specification states that there is no allowance for venting caused by roof break up and the internal space is considered as a compartment with regard to a resistance period of 60 minutes integrity and 15 minutes insulation, and the temperature of the standard fire specified to BS EN 1991-1-2: 2005) of 945 °C.

The document aims to promote improved collaboration and earlier design integration across the client, project design and construction teams to deliver a robust solutions package.



## Fire and Steel in Construction

Structural performance in fire is an important design consideration for all materials. The strength of steel reduces at elevated temperatures so structural and secondary steelwork will generally need protection if the resistance of an unprotected member cannot be justified. In parallel much research has been undertaken into the performance of members and buildings at elevated temperatures, leading to comprehensive design rules such as:

- BS EN 1993-1-2: 2005 Eurocode 3. Design of steel structures; and
- BS 5950-8 Fire Resistant Design of Steel Structures (withdrawn).

# WHAT IS A BOUNDARY WALL?

## The 'Relevant Boundary'

An external wall on a building is always opposite a 'Relevant Boundary'.

The Relevant Boundary will be one of the following:

- Legal boundary of a site; or
- The middle of a public highway, railway or waterway; or
- Notional boundary with another separate building on the same site.

Building regulations guidance makes recommendations for an appropriate level of fire-resistance to the external walls of new buildings to prevent fire from spreading across the Relevant Boundary from one building to another. The fire-resistance rating is a measure of one or more of the following performance criteria as defined in BS EN 1363-1: 2020.

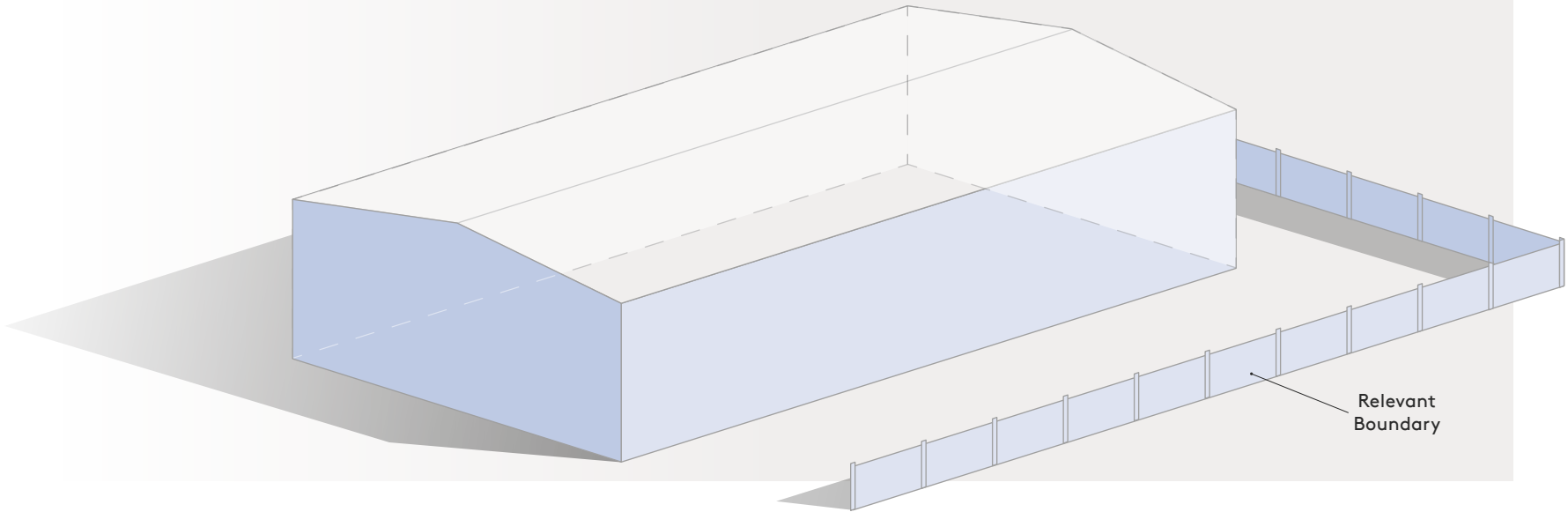
**Note:** All Building Regulations referenced in this document apply specifically to England. For advice in other jurisdictions, please contact your local Kingspan Technical Services team.

■ **Resistance to collapse (loadbearing capacity), denoted 'R':**

The ability of a test specimen of a loadbearing element to support its test load, where appropriate, without exceeding specified criteria with respect to both the extent of, and rate of, deflection.

■ **Resistance to fire containment (integrity), denoted 'E':**

The ability of a test specimen of a separating element of building construction, when exposed to fire on one side, to prevent the passage of flames and hot gases through and prevent the occurrence of flames on the unexposed side.



■ **Resistance to the transfer of excessive heat (insulation), denoted 'I':**

The ability of a test specimen of a separating element of building construction, when exposed to fire on one side, to restrict the temperature rise of the unexposed face to below specified levels.

There are three main cases as follows:

a) **Relevant Boundary sufficiently distant that the external wall requires no fire resistance:**

- i. For many new build projects the distance between the external façade of the new building and the Relevant Boundary is sufficient such that a fire in the new building can break through its external façade without causing a sufficiently high heat flux at the Relevant Boundary to create a significant risk of fire spread to a building on the other side of the Relevant Boundary.

- ii. In such cases, the external wall of the new building can be specified as 100% unprotected area ('UPA').
- iii. 100% UPA means that the external wall of the building would need no protection to fire penetration from the inside of the building.
- iv. However, where the external wall is loadbearing (i.e. it supports floors) it will still need to be fire protected in terms of maintaining the loadbearing capacity of the building's structure in the case of a fire in the new building.

b) **Relevant Boundary sufficiently close so that the entirety of the external wall needs fire resistance:**

- i. For some projects the distance between the external façade of the new building and the Relevant Boundary will be very close.

- ii. In such cases break out of fire from even a small area of the new building's external façade could result in a heat flux at the Relevant Boundary to cause fire spread.
- iii. In instances where the distance to the Relevant Boundary is 1 metre or less, compliance with Approved Document B (ADB) guidance requires that the external façade of the new building is designed as 100% protected area (0% UPA), i.e. the entirety of the façade (apart from limited openings for small windows) be provided with the same period of fire resistance as necessary for any fire compartmentation within the new building.
- iv. In this case the recommendation applies that this fire resistance is provided from inside the new building to out and outside the new building to in (i.e. in both directions).

# WHAT IS A BOUNDARY WALL?

c) Relevant Boundary distance between a) and b):

- i. Clearly, there will be many new buildings which fall between case a) and case b) (see previous page).
- ii. In these cases, compliance with ADB guidance requires that a determination is made of the percentage of the external wall that can be provided as UPA (i.e. not needing fire resistance in terms of integrity and insulation performance).
- iii. The view of the SCI is that, although some proportion of the cladding may be 'unprotected', the primary structure needs to be 100% protected - **you cannot allow part of the primary structure to collapse.**
- iv. Various approaches are given in ADB guidance for making this determination. All are based on the principle that the risk of fire spread from the new building across the Relevant Boundary is influenced by:
  - the distance to the Relevant Boundary (a shorter distance increases the risk), and
  - the size of the fire in the new building.
    - Where the new building is provided with internal fire compartmentation by means of fire resisting compartment walls and/or floors then the size of the fire that could break through the external wall from an internal fire would be limited by the distance between lines of compartmentation enclosing the fire where those lines of fire compartmentation interface with the external wall.
    - Conversely, where the compartments are large or there is no internal compartmentation then the fire size which could break through the external façade would be greater and result in a greater incident heat flux at the Relevant Boundary.

To further assist specification of Kingspan insulated wall solutions, please follow the link to 'The Route to Building Envelope Fire Safety Compliance' guides.

[CLICK HERE](#)

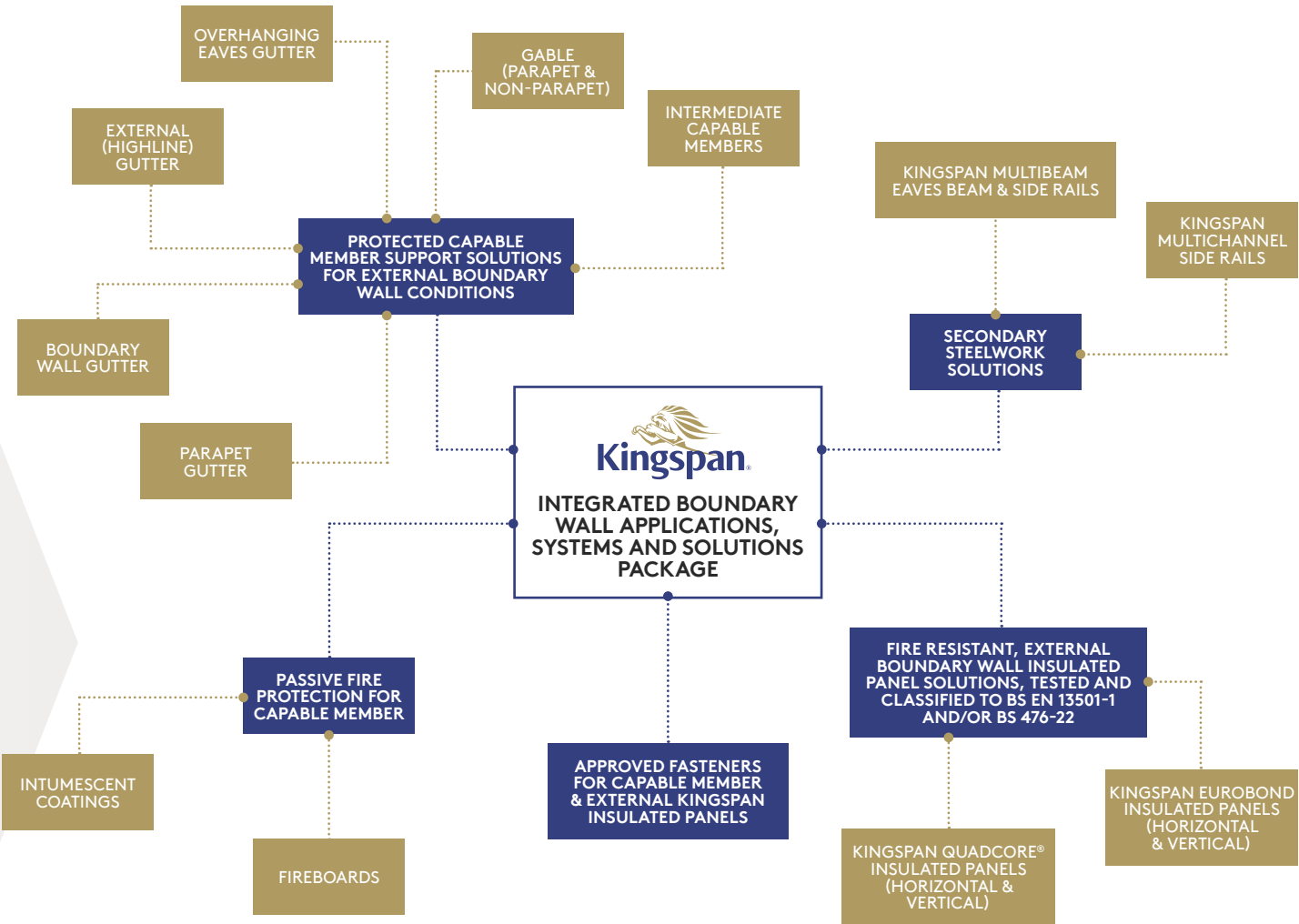


# KINGSPAN SOLUTIONS PACKAGE

Kingspan are working in collaboration with industry leaders to develop an integrated system approach for the design and construction of a compliant boundary wall.

## Kingspan integrated boundary wall applications, systems and solutions package

- Protected Capable Member solutions for external boundary wall conditions:
  - parapet gutter;
  - boundary wall gutter;
  - external (Highline) gutter;
  - overhanging eaves gutter;
  - gable (parapet and non-parapet);
  - intermediate Capable Members.
- Multibeam and Multichannel secondary steelwork: eaves beams and side rails.
- Fire Resistant, external boundary wall insulated panel solutions, tested and classified to BS EN 13501-1 and/or BS 476-22\*.
- Approved fasteners for Capable Member and external Kingspan insulated panels.
- Capable Member passive fire protection solutions: intumescent coatings and fireboards.



\* BS 476 covering reaction to fire was removed from ADB 2025 and references to fire-resistance will be removed from 2029.



- 1 Primary structure design and fire protection (by others)
- 2 Design of Capable Member and connections, and fire protection (by others)
- 3 Kingspan Multibeam secondary steel side rail system + primary structure connections (cleats) specified by Kingspan
- 4 External envelope systems (Kingspan QuadCore® and Eurobond)
- 5 Capable Member and approved external wall main panel fasteners
- 6 Limit state (top hung - tension) load path calculations (project-specific)

**Note:** Typical detail shown. The integration and location of typical Capable Members is project-specific and subject to collaboration within the design and construction teams.

# PRINCIPLES OF BOUNDARY WALL CONSTRUCTION

Interaction between the primary structure and fire-resisting cladding panels must be proven to ensure that the boundary wall elevation remains vertical and prevents the passage of flame and radiant heat to the Relevant Boundary.

Historically, construction practice in the UK has followed guidance published in SCI Publication P313, which is written into building regulations in ADB, with the intention of providing a construction method to ensure the supporting structure of a wall remains vertical with the cladding acting as a fire barrier.

It is recognised in the BCSA Technical Specification that more consideration needs to be given to the support of cladding in a fire, to summarise:

- **Primary Structure:** Designed in accordance with SCI P313 or fully fire protected. No change anticipated in the design and specification of passive fire protection to the primary structure. However the introduction of a Capable Member to support the weight of the wall cladding during a fire is required.
- **Cold Formed Secondary Steelwork:** No reliance to be placed on the secondary steelwork retaining strength or acting as support to fire-resisting cladding panels unless specifically proven by calculation, for example supporting horizontally-laid insulated panels. Where secondary steelwork is required to act as a loadbearing element when exposed to fire it must be proven to retain sufficient strength for the duration of the fire period. Temperatures are to be derived from a standard fire curve based on BS EN 1991-1-2: 2005.

- **Side rails** are expected to buckle away from the cladding but remain attached to columns throughout the fire duration. On this basis it is deemed the side rails will support themselves in catenary and not contribute to the weight of the wall supported by the Capable Member.
- **Insulated Panels:** are to hang in tension from a suitably fire-protected Capable Member at height on the elevation. Integrity and Insulation is justified by non-loadbearing wall fire tests on a typical 3 metre x 3 metre furnace to BS EN 1364-1: 2015 or BS 476-22\* as laid out in the regulatory guidance on fire safety. The guidance does not intend to limit the size of as-built fire-resisting walls to the size of the test nor replicate the exact support conditions that will exist for the wall in a real building.

Kingspan offer a range of fire resistant external wall insulated panels - tested to BS EN 1364-1 and classified to BS EN 13501-2.

\* BS 476 covering reaction to fire was removed from ADB 2025 and references to fire-resistance will be removed from 2029.

# CAPABLE MEMBER & PASSIVE FIRE PROTECTION: DESIGN CONSIDERATIONS

## Capable Member Specification

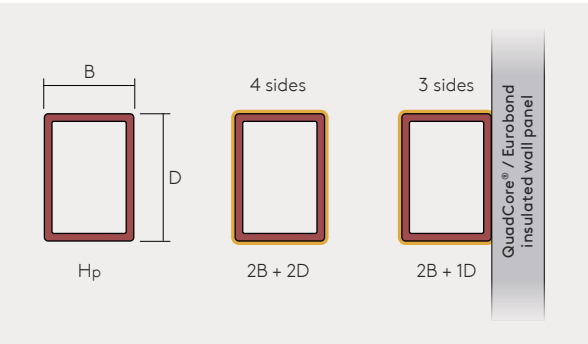
The geometry of the Capable Member can introduce impractical limitations to the specification of passive fire protection, therefore the engineer must consider this when deciding what Capable Member section to specify.

For boundary elevations, hollow structural sections are anticipated to be the preferred members for supporting wall cladding, as their closed geometry provides superior resistance to torsional stresses and reduces susceptibility to lateral torsional buckling.

## Section Factor

The section factor, often expressed as  $H_p/A$  or  $A/V$ , is the ratio of the surface area of the steelwork requiring protection to the volume of steel in the member. This factor changes between applications and it is essential that this is given adequate consideration in Capable Member selection as it has a direct impact on the specification of passive fire protection.

Section factors for sections are readily available in passive fire protection literature, see below example for the calculation for hollow sections.



In general, thin walled, high section factor ( $>200 \text{ m}^{-1}$ ) hollow sections can result in impractical passive fire protection thicknesses to limit steel temperatures to the critical temperature, refer to [Appendix 2](#) for further information.

## Specification of Passive Fire Protection:

It is expected that the primary method of passive fire protection to Capable Members will be intumescent coatings as these offer increased speed of application. Offsite (factory) application is an increasingly prevalent method with the development of durable and weatherable coatings providing greater quality control and product traceability.

Kingspan, working with industry partners, has performed a series of fire tests on intumescent-coated Capable Members with Kingspan QuadCore® insulated panels.

Independent test witnesses have concluded that the Kingspan QuadCore® insulated panels provide greater shielding to the clad face of the Capable Member than intumescent coatings alone. **The intumescent coatings must be of low pressure specification to ensure excellent fire-sealing without the need for a space between the capable Member and insulated panels.** This justifies the application of intumescent manufacturer certified performance tables for use with Kingspan QuadCore® insulated panels as follows:

- Section Factor – calculate for a 4-sided exposed beam including the clad face in the heated perimeter calculation.
- Dry Film Thickness (DFT) Tables – must use 4 sided column tables in determining intumescent coating thicknesses.

Where intumescent coatings are applied offsite the coating must be applied to all 4 sides to avoid the section becoming handed.

Where intumescent coatings are applied onsite the coating must be taken up to the insulated panel junction with the Capable Member.

**The above is subject to the specification of Kingspan QuadCore® insulated panels.**

# TEAM COLLABORATION & RESPONSIBILITIES

## Project Design Team

### Principal Designer

- Jurisdiction-specific regulatory requirements.
- Communicate fire strategy to design team.
- Relevant Boundary wall locations and requirements.
- BCSA-compliant systems and solutions.
- Primary structure and Capable Member passive fire-protection methods.
- Liaison with Fire Engineer, Structural Engineer, Building Control and Fire Officers.

## Construction Team

### Design & Build / Principal Contractor

- Principal designer and construction team to identify boundary wall project requirements
- Tendering and selection of specialist sub-contractors and supply chain.
- Facilitate communication (Golden Thread) between specialist sub-contractors and supply chain.
- Selection and installation of fire-protection measures.

### Steelwork Contractor

- Primary structure and Capable Member design.
- Application of offsite / onsite-applied intumescent coating to primary structure and Capable Members (unless specialist contractor appointed).

### Specialist Cladding Contractor

- BCSA-compliant external boundary wall system construction.
- Fixings to Capable Member and joint fixing to specialist cladding manufacturers specification.

### Specialist Passive Fire-Protection Contractor

- Application of intumescent coating (or onsite boarding if applicable).

## Scope of Kingspan Offering

### Kingspan Secondary Steelwork

- Cold-rolled Capable Member, compliance with **BS EN 1993-1-3: 2006, BS EN 1993-1-2: 2005 and BS EN 1991-1-2: 2002.**
- Specified fixings to Capable Member: **BS EN 1993-1-3: 2006, BS EN 1991-1-2: 2005.**

### Kingspan Insulated Panels

- Kingspan insulated panels to confirm EI (Integrity and Insulation) performance of the specified product supported by **BS EN 13501-2: 2016.**

### Vertically-laid Insulated Panels

- In excess of 60 minutes fire resistance from inside to out achievable without additional fire protection of side rails.
- Kingspan Insulated Panels to specify fixing quantity to Capable Member based on wall height and panel thickness / weight to allow Structural Engineer to specify the number of Capable Members.
- Specification of the Capable Member cannot be finalised until the supported wall height and cladding weight is known.

### Horizontally-laid Insulated Panels

- Up to 60 minutes fire rating from inside to out available without additional fire protection of side rails.
- Wall height between Capable Members to be advised by Kingspan Structural Products based on fixing capacity between vertical members and cladding weight.
- Kingspan Structural Products to specify cleat and bolt arrangement on a project-by-project basis.
- Vertical joints at columns to be backed by G140150 members cleated to fire protected columns, fire protection to include the G140150 column cleats.
- Vertical joints away from columns can be supported by compound cold-formed channels or custom panel joint rails.

The attachment of any additional weight, such as signage, may impact the fire resistance of the external wall panel and should be assessed by the project fire engineer and design team.

**The Kingspan Fire-Engineered Boundary Wall System is based on temperatures assessed in line with the standard fire curve.**

**For applications outside of this scope, project-specific temperatures are required with a full assessment performed by the project fire engineer.**

# TEAM COLLABORATION & RESPONSIBILITIES

Kingspan provide streamlined firewall expertise and guidance, including secondary steel support requirements, throughout the project life cycle.

Implementation of a fire-engineered boundary wall solution, following the BCSA guidance, requires early **RIBA Workstage** co-ordination between the design and construction teams, since alternative solutions place responsibilities on different parties and the selected cladding system chosen will impact the requirements of the Capable Members, secondary steelwork and loadings.

|                                    |                                                  | 0 STRATEGIC DEFINITION                                                                                                                                                                                                                                                                                                                                           | 1 PREPARATION & BRIEFING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 2 CONCEPT DESIGN                                                                                                                                                                                                                                                                                                                                               | 3 SPATIAL COORDINATION                                                            | 4 TECHNICAL DESIGN                                                                                                                                                           | 5 MANUFACTURING & CONSTRUCTION                                                     | 6 HANDOVER                                                                         | 7 USE                                                                              |
|------------------------------------|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|                                    |                                                  | <b>Masterplan Stage</b> <ul style="list-style-type: none"><li>Project Design Team to define and ascertain any Relevant Boundary conditions and related jurisdiction regulatory requirements including BCSA Technical Specification Boundary Elevations guidance.</li><li>Strategic appraisal of planning considerations and procurement route options.</li></ul> | <ul style="list-style-type: none"><li>Develop Boundary wall elevation parameters / layouts and structural methodology.</li><li>Fire engineered performance requirements, including:<ul style="list-style-type: none"><li>Fire protection solutions for primary structure / Capable Members;</li><li>Design of secondary steel (side rails);</li><li>Evaluate testing and certification for external wall cladding;</li><li>Submit scheme proposals to other team members and cost plan budget;</li><li>Planning advice, pre-application.</li></ul></li></ul> | <ul style="list-style-type: none"><li>Collaboration within design and construction team to develop boundary wall specification and construction package</li><li>Selection of system, construction, supply and installation teams</li><li>Develop cost plan</li><li>Undertake design reviews with client and project stakeholders, including insurers</li></ul> | <ul style="list-style-type: none"><li>Refer to RIBA 2020 workstage plan</li></ul> | <ul style="list-style-type: none"><li>Develop all design information required to manufacture and construct the project.</li><li>Refer to RIBA 2020 workstage plan.</li></ul> | <ul style="list-style-type: none"><li>Refer to RIBA 2020 workstage plan.</li></ul> | <ul style="list-style-type: none"><li>Refer to RIBA 2020 workstage plan.</li></ul> | <ul style="list-style-type: none"><li>Refer to RIBA 2020 workstage plan.</li></ul> |
| Regulatory Compliance and Approval | Building Regulations / Standards                 |                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                |                                                                                   |                                                                                                                                                                              |                                                                                    |                                                                                    |                                                                                    |
|                                    | Building Safety Act 2022                         |                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                |                                                                                   |                                                                                                                                                                              |                                                                                    |                                                                                    |                                                                                    |
|                                    | Building Control                                 |                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                |                                                                                   |                                                                                                                                                                              |                                                                                    |                                                                                    |                                                                                    |
| Stakeholders                       | Client / investor / design and construction team |                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                |                                                                                   |                                                                                                                                                                              |                                                                                    |                                                                                    |                                                                                    |
|                                    | Property insurance                               |                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                |                                                                                   |                                                                                                                                                                              |                                                                                    |                                                                                    |                                                                                    |
| Project Design Team                | Lead architect                                   |                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                |                                                                                   |                                                                                                                                                                              | NOVATED TO MAIN CONTRACTOR                                                         |                                                                                    | 12 MONTHS DEFECTS                                                                  |
|                                    | Structural engineer                              |                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                |                                                                                   |                                                                                                                                                                              |                                                                                    |                                                                                    | 12 MONTHS DEFECTS                                                                  |
|                                    | Cost planner                                     |                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                |                                                                                   |                                                                                                                                                                              | NOVATED TO MAIN CONTRACTOR                                                         |                                                                                    |                                                                                    |
|                                    | Fire engineer                                    |                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                |                                                                                   |                                                                                                                                                                              |                                                                                    |                                                                                    |                                                                                    |
|                                    | Design & Build contractor                        |                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                | TENDERING / SELECTED / SUB-CONTRACTORS                                            |                                                                                                                                                                              |                                                                                    |                                                                                    | 12 MONTHS DEFECTS                                                                  |
|                                    | Main contractor                                  |                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                | TENDERING / SELECTED / SUB-CONTRACTORS                                            |                                                                                                                                                                              |                                                                                    |                                                                                    | 12 MONTHS DEFECTS                                                                  |
|                                    | Steelwork fabricator                             |                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                | TENDERING / SELECTED / SUB-CONTRACTORS                                            |                                                                                                                                                                              |                                                                                    |                                                                                    |                                                                                    |
|                                    | Cladding installer                               |                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                | TENDERING / SELECTED / SUB-CONTRACTORS                                            |                                                                                                                                                                              |                                                                                    |                                                                                    |                                                                                    |
|                                    | Passive fire protection installer                |                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                | TENDERING / SELECTED / SUB-CONTRACTORS                                            |                                                                                                                                                                              |                                                                                    |                                                                                    |                                                                                    |
| Boundary Wall System Provider      | Kingspan Insulated Panels                        |                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                |                                                                                   |                                                                                                                                                                              |                                                                                    |                                                                                    |                                                                                    |
|                                    | Kingspan Structural Products                     |                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                |                                                                                   |                                                                                                                                                                              |                                                                                    |                                                                                    |                                                                                    |
|                                    | Passive fire protection                          |                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                |                                                                                   |                                                                                                                                                                              |                                                                                    |                                                                                    |                                                                                    |

# KINGSPAN FIRE-ENGINEERED BOUNDARY WALL SOLUTIONS

## Vertically-laid Insulated Panels

### Load Path through External Skin of the Insulated Panel

In a fire scenario, the panels hang in tension from the suitably fire-protected Capable Member. Any discontinuity of the panels, such as end laps, windows and changes in insulated panel type / orientation where the continuous load path from the Capable Member is broken, requires an additional Capable Member. More frequent Capable Members could also be required with taller elevations where the weight of the external wall exceeds the reduced capacity of the Capable Member, cladding and / or fasteners at the elevated temperature.

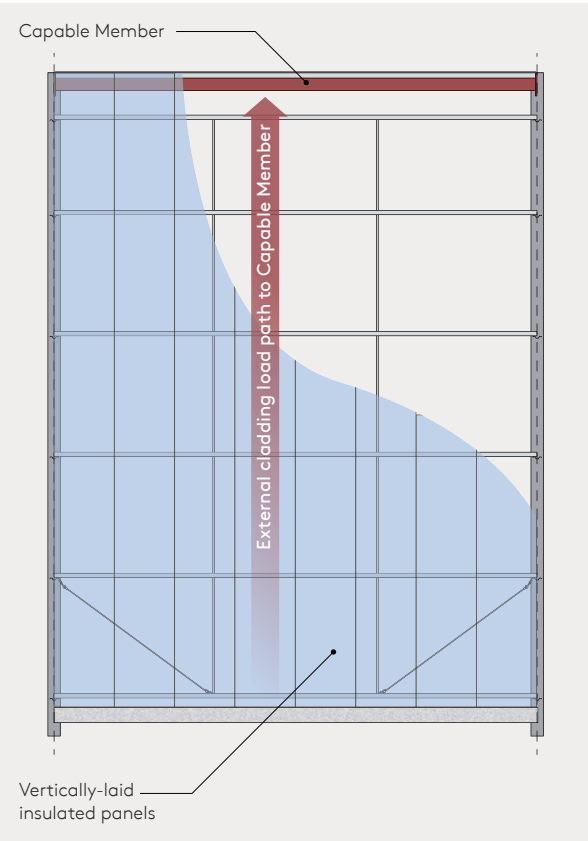
The fastener quantity used to fix the insulated panel to the Capable Member must be calculated based on:

- the weight and length of the insulated panel being ‘hung’ from the Capable Member; and
- the reduced capacity of the fastener due to the temperature of the Capable Member.

**Kingspan Technical Services can provide guidance on the periods of fire resistance of the insulated panels available in a vertical application from 60 minutes to 120 minutes.**

Guidance can also be provided on the number of fasteners for both fire and non-fire scenarios and provide advice on the requirement for any additional Capable Members.

**Note:** All fasteners into the Capable Member used to hang the panels must be visible fasteners equally spaced across the width of the panel. Therefore, for our secret-fix panels, such as Kingspan QuadCore® Architectural Wall Panels, the fasteners must be visible at the Capable Member locations and spread evenly across the width of the panel, noting minimum edges distances as recommended by the fastener supplier.



## Horizontally-laid Insulated Panels

### Load Path through Unprotected Secondary Steel

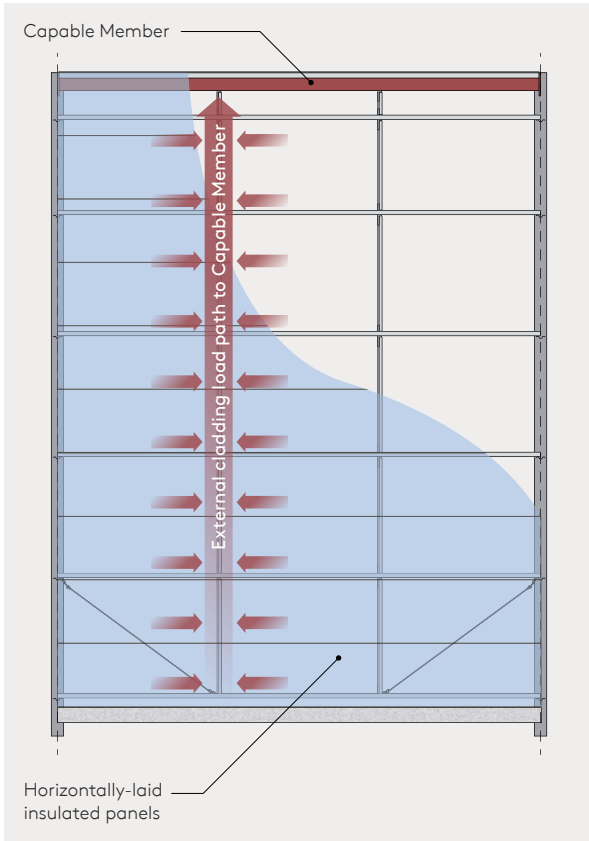
For periods of fire resistance up to 60 minutes, the secondary steel must provide the load path to the horizontal Capable Member. This is typically done via continuous vertical members or shorter vertical members with designed connections (see points below) which provide a continuous load path vertically upwards to a suitably fire protected Capable Member. The secondary steelwork supplier must provide the requirement for this.

The designer of the secondary steel must:

- use the appropriate strength reduction factors for the tensile capacity of intermediate vertical supports at the elevated temperatures (see BS EN 1993-1-2: 2005); and
- use the appropriate strength reduction factors for the capacity of cleated and bolted connections between intermediate vertical supports and horizontal side rails at the elevated temperatures (see BS EN 1993-1-2: 2005).

Typically, the capacity of the steelwork connections at elevated temperature governs the frequency of the Capable Members.

**Kingspan Technical Services can provide guidance on the periods of fire-resistance of the insulated panels available in a horizontal application to 60 minutes.**



# INSULATED WALL PANEL SYSTEMS

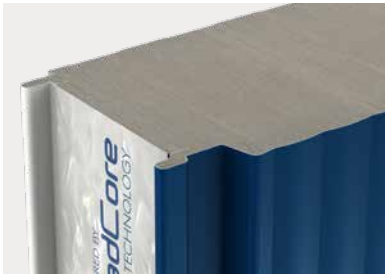
Kingspan Insulated Panels offer a range of fire-resistant panel systems, classified to BS EN 13501-2: 2016\*. Follow the links for further regulatory compliance guidance.



QuadCore® KS1000RW Wall



QuadCore® Architectural Wall



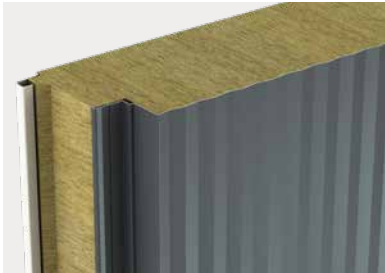
QuadCore® AWP-S



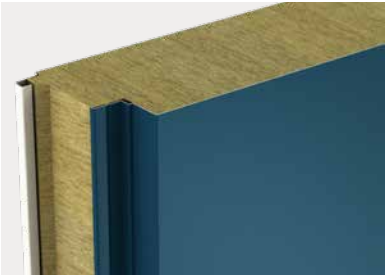
QuadCore® Evolution



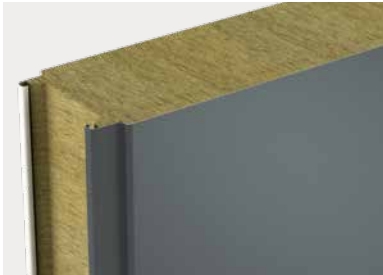
QuadCore® Coldstore



Eurobond Europanel Satin Line

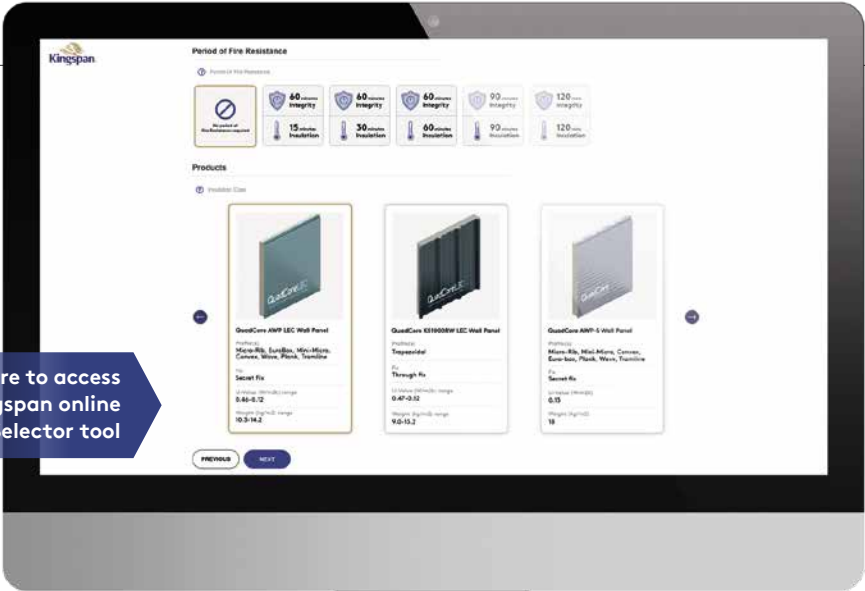


Eurobond Europanel Flat



Eurobond Rockspan

\*For full product testing and certification information, please refer to individual product data sheets.



Click here to access the Kingspan online Product Selector tool



Click here for the fire performance of QuadCore® insulated panels



Click here for the BS 476-22 and EN 1364-1 fire tests comparison

# TYPICAL CAPABLE MEMBER APPLICATIONS

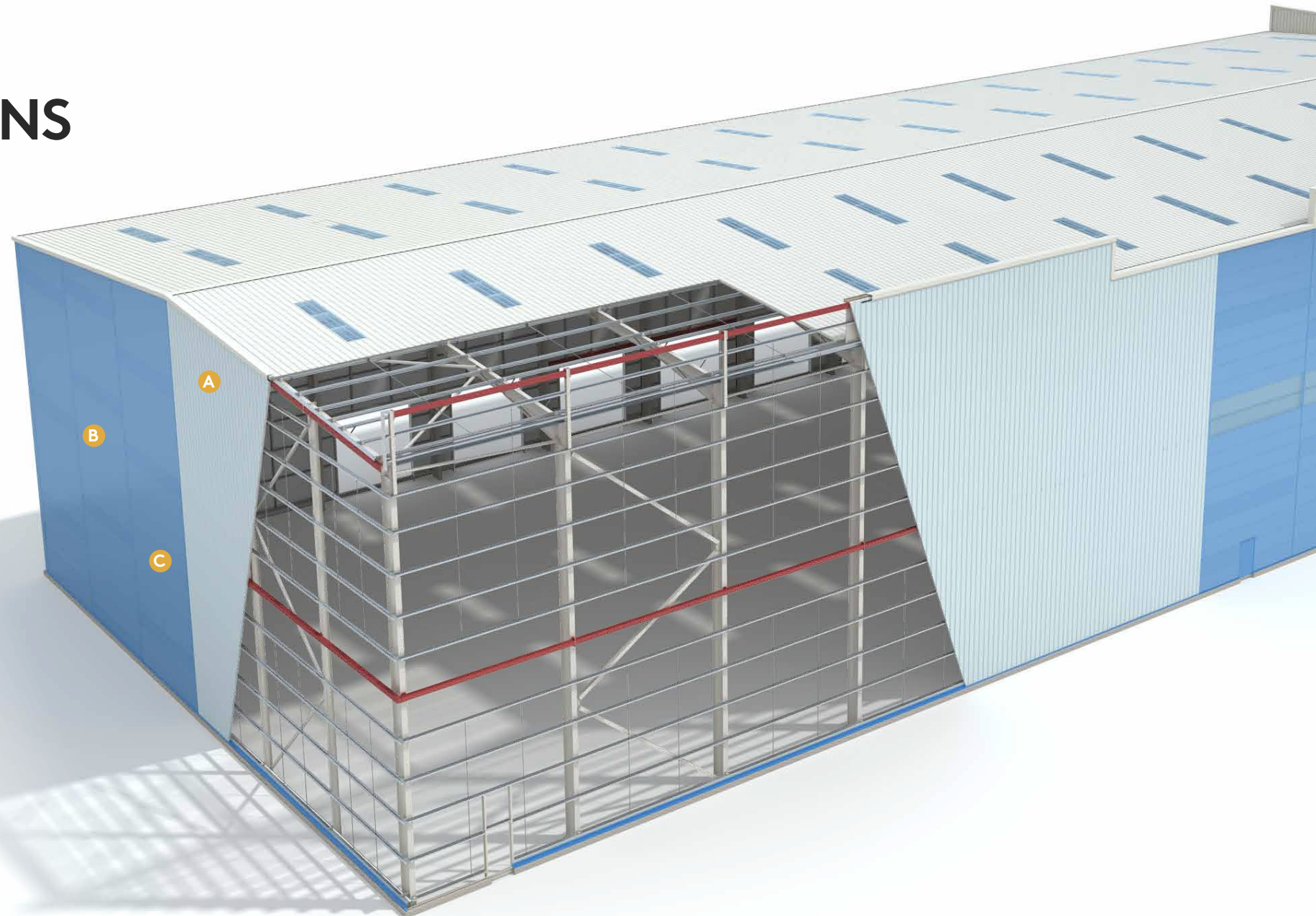
Allowance for Capable Members in tender submittal should follow the below guidance:

- A** Vertically-laid Kingspan QuadCore® / Eurobond insulated panels.
  - Capable Members required at any stack joint / end lap.
  - Capable Members required at window cill locations.
  - Capable Member required where panel length and / or fastener limitations are exceeded.
- B** Horizontally-laid Kingspan QuadCore® / Eurobond insulated panels.
  - Capable Member locations are project-specific and subject to calculation by Kingspan Structural Products.
  - Horizontal spanning panel could be acceptable to span column to column in the fire limit state.\*
- Capable Members required at any change in cladding orientation.\*
- Capable Member required at changes between horizontally-laid Kingspan QuadCore® KS1000RW Wall Panels and QuadCore® AWP Wall Panels.\*

## Cold-rolled Steelwork:

- C** In support of Kingspan QuadCore® / Eurobond insulated panels
  - Engineered horizontal insulated panel support solution.\*
  - Factory-assembled vertical sections complete with bolted cleats can be supplied by Kingspan Structural Products.\*
  - Distance between verticals will be project-specific. Consult Kingspan Structural Products.

\* Not shown.



# TYPICAL CONSTRUCTION DETAILS

## VERTICAL INSULATED PANEL APPLICATIONS

|                                                                                    |    |
|------------------------------------------------------------------------------------|----|
| ■ External Eaves Gutter Detail: Capable Member at Wall Head and Roof Panel Support | 16 |
| ■ Boundary Gutter Detail: Capable Member at Wall Head                              | 17 |
| ■ Parapet Gutter Detail: Capable Member at Wall Head                               | 18 |
| ■ Bullnose Gutter Detail: Capable Member at Wall Head and Roof Panel Support       | 19 |
| ■ Parapet Gable Detail: Capable Member at Wall Head                                | 20 |
| ■ Gable End Detail: Capable Member at Wall Head                                    | 21 |
| ■ Intermediate Capable Member at Stack Joint Detail                                | 22 |
| ■ Intermediate Capable Member at Lapped Joint Detail                               | 23 |
| ■ Boundary Wall Base Detail                                                        | 24 |

# TYPICAL CONSTRUCTION DETAILS

## VERTICAL INSULATED PANEL APPLICATIONS

### External Eaves Gutter Detail: Capable Member at Wall Head and Roof Panel Support

#### Wall

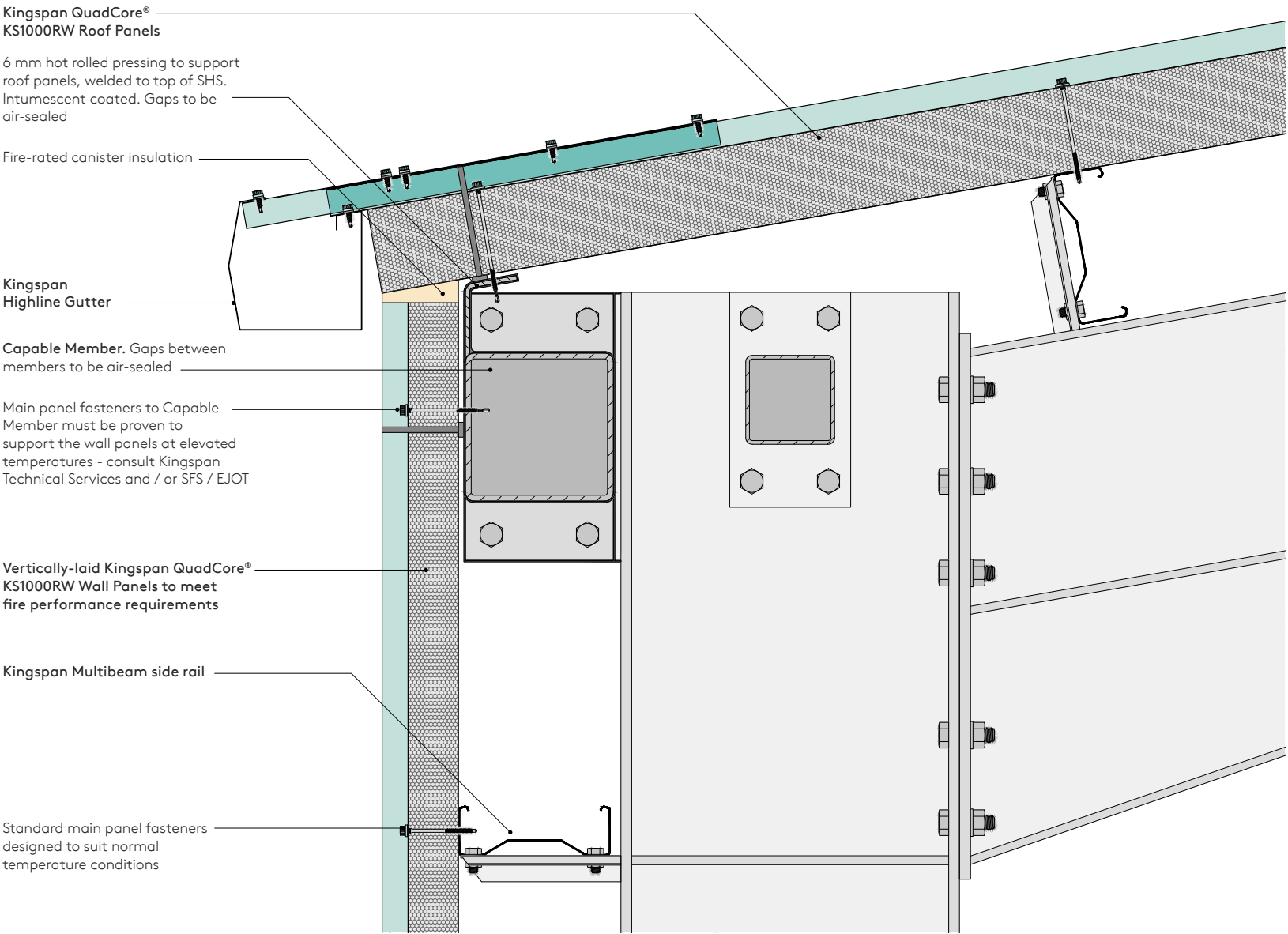
- Kingspan QuadCore® or Eurobond insulated wall panels, vertically-laid (QuadCore® KS1000RW Wall Panels shown).
- Detail applicable to other Kingspan insulated panels, e.g. QuadCore® AWP.
- Kingspan Multibeam or Multichannel side rails.

#### Roof

- Kingspan QuadCore® KS1000RW Roof Panels.
- Kingspan highline gutter.
- Kingspan Multibeam purlins.



To access the latest version of this detail, please [click here](#).



# TYPICAL CONSTRUCTION DETAILS

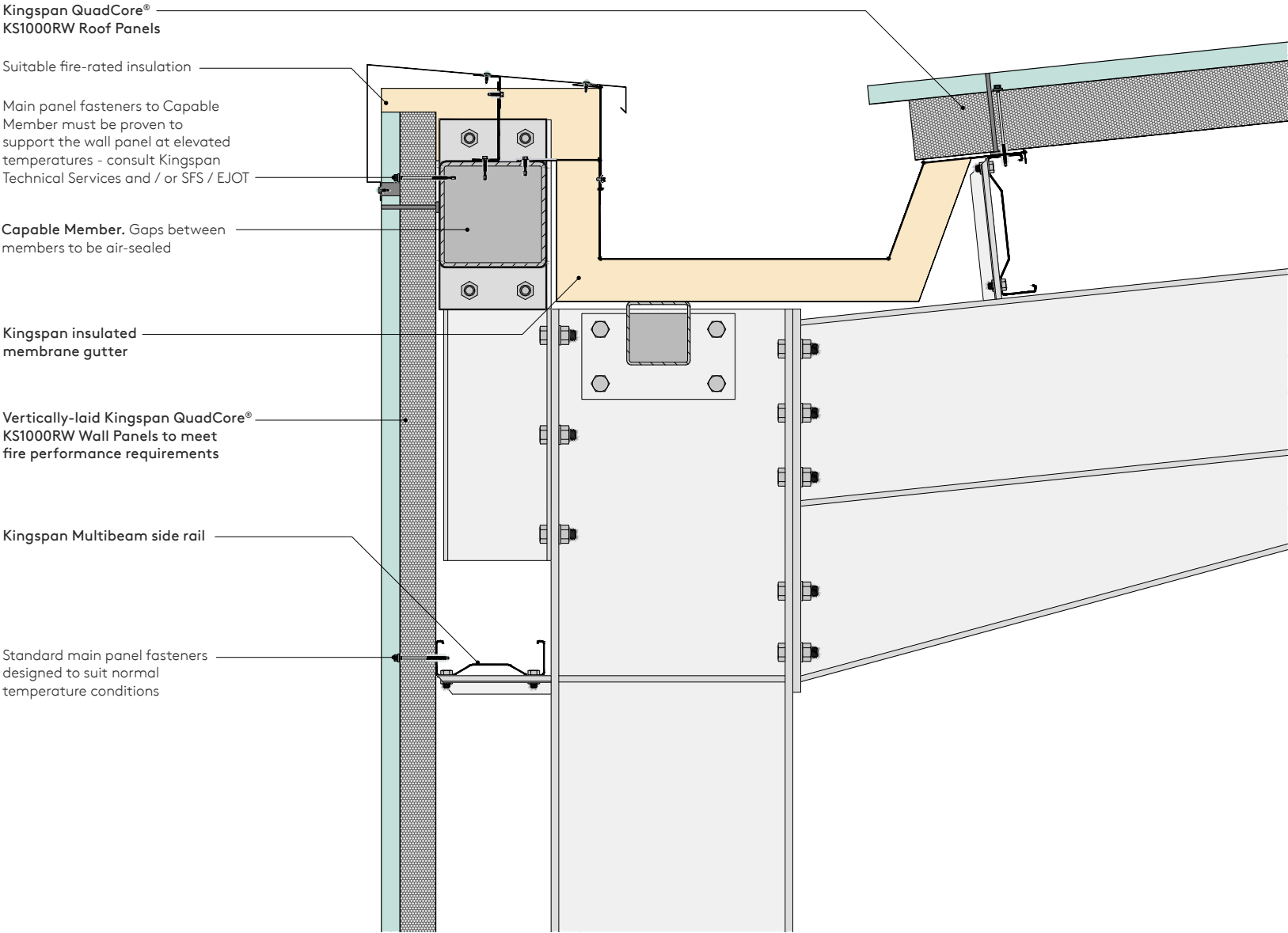
## VERTICAL INSULATED PANEL APPLICATIONS

### Boundary Gutter Detail: Capable Member at Wall Head

- Wall**
- Kingspan QuadCore® or Eurobond insulated wall panels, vertically-laid (QuadCore® KS1000RW Wall Panels shown).
  - Detail applicable to other Kingspan insulated panels, e.g. QuadCore® AWP.
  - Kingspan Multibeam or Multichannel side rails.
- Roof**
- Kingspan QuadCore® KS1000RW Roof Panels.
  - Kingspan insulated membrane gutter.
  - Kingspan Multibeam purlins.



To access the latest version of this detail, please [click here](#).



# TYPICAL CONSTRUCTION DETAILS

## VERTICAL INSULATED PANEL APPLICATIONS

### Parapet Gutter Detail: Capable Member at Wall Head

#### Wall

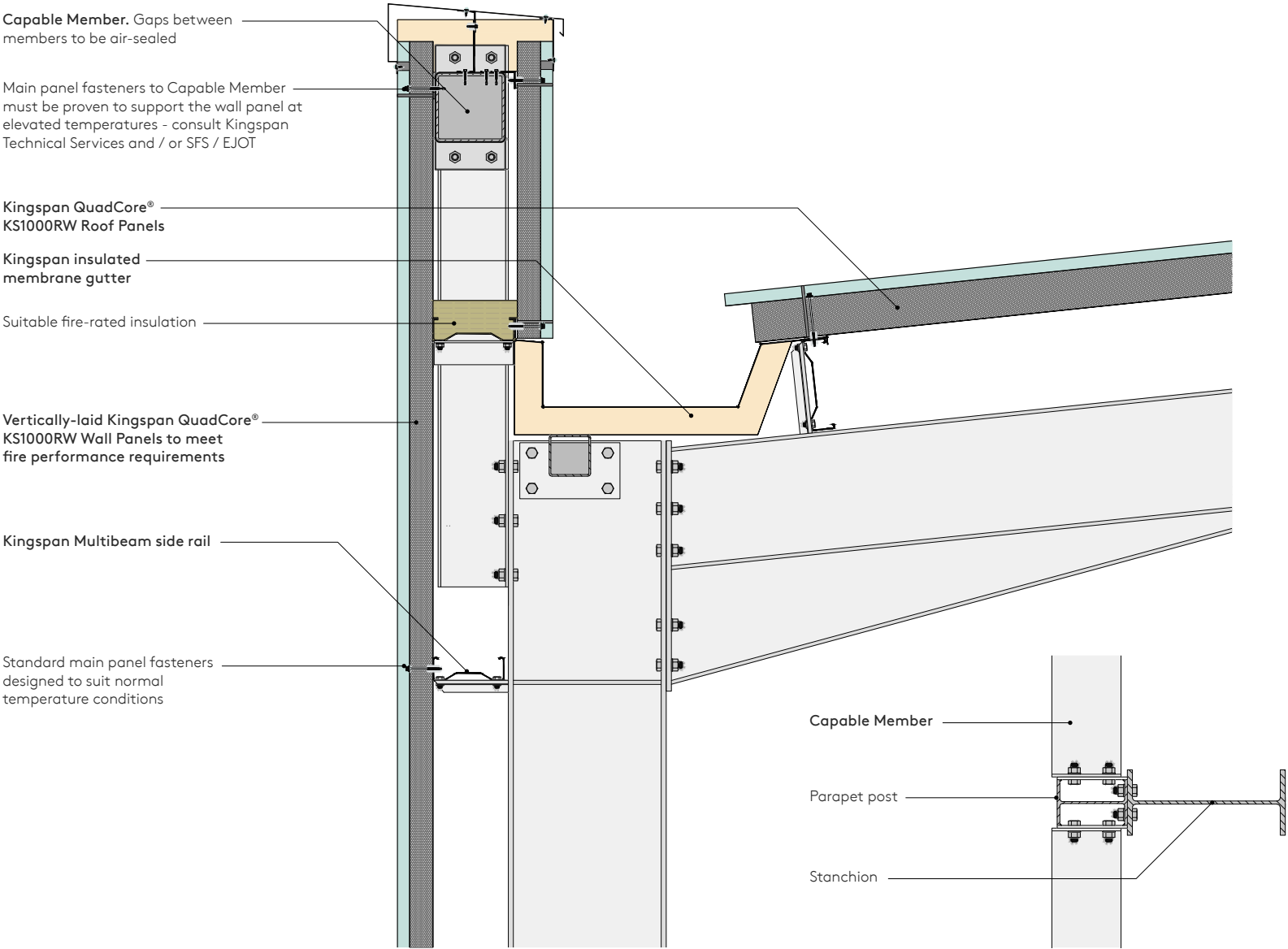
- Kingspan QuadCore® or Eurobond insulated wall panels, vertically-laid (QuadCore® KS1000RW Wall Panels shown).
- Detail applicable to other Kingspan insulated panels, e.g. QuadCore® AWP.
- Kingspan Multibeam or Multichannel side rails.

#### Roof

- Kingspan QuadCore® KS1000RW Roof Panels.
- Kingspan insulated membrane gutter.
- Kingspan Multibeam purlins.



To access the latest version of this detail, please [click here](#).



# TYPICAL CONSTRUCTION DETAILS

## VERTICAL INSULATED PANEL APPLICATIONS

### Bullnose Gutter Detail: Capable Member at Wall Head and Roof Panel Support

#### Wall

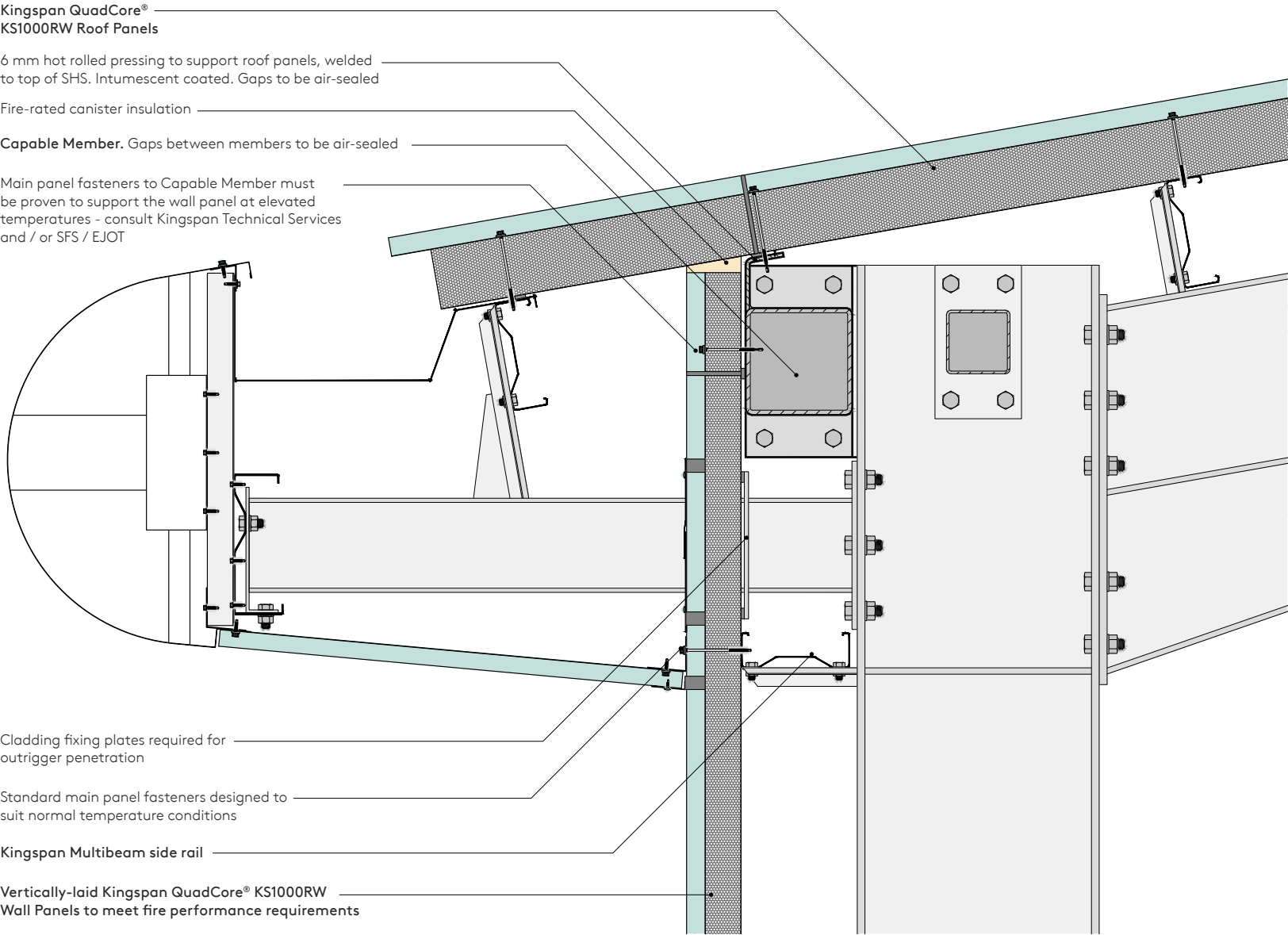
- Kingspan QuadCore® or Eurobond insulated wall panels, vertically-laid (QuadCore® KS1000RW Wall Panels shown).
- Detail applicable to other Kingspan insulated panels, e.g. QuadCore® AWP.
- Kingspan Multibeam or Multichannel side rails.

#### Roof

- Kingspan QuadCore® KS1000RW Roof Panels.
- Kingspan Multibeam purlins.



To access the latest version of this detail, please [click here](#).



# TYPICAL CONSTRUCTION DETAILS

## VERTICAL INSULATED PANEL APPLICATIONS

### Parapet Gable Detail: Capable Member at Wall Head

#### Wall

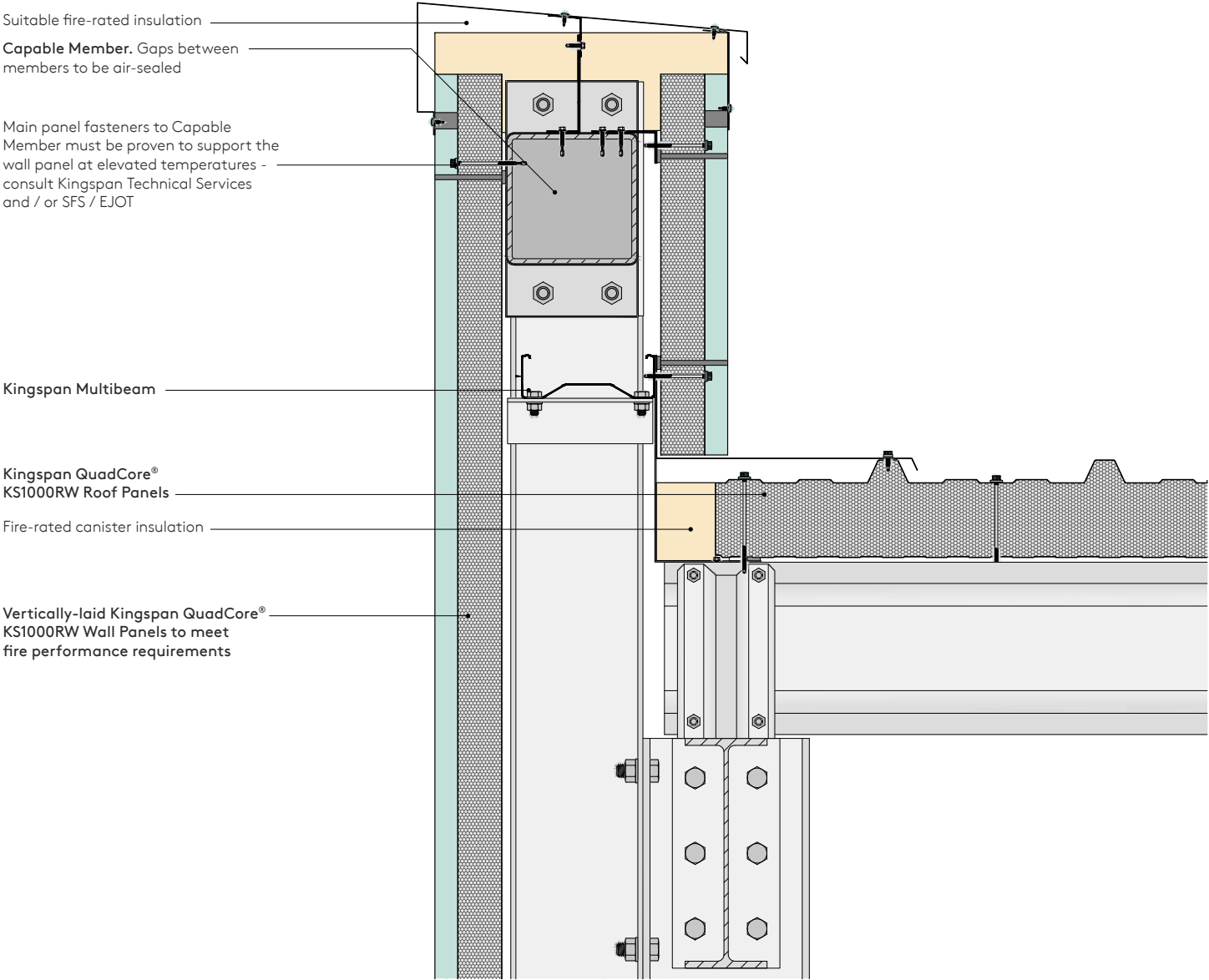
- Kingspan QuadCore® or Eurobond insulated wall panels, vertically-laid (QuadCore® KS1000RW Wall Panels shown).
- Detail applicable to other Kingspan insulated wall panels, e.g. QuadCore® AWP.
- Kingspan Multibeam or Multichannel side rails.

#### Roof

- Kingspan QuadCore® KS1000RW Roof Panels.
- Kingspan Multibeam purlins.



To access the latest version of this detail, please [click here](#).



# TYPICAL CONSTRUCTION DETAILS

## VERTICAL INSULATED PANEL APPLICATIONS

### Gable End Detail: Capable Member at Wall Head

#### Wall

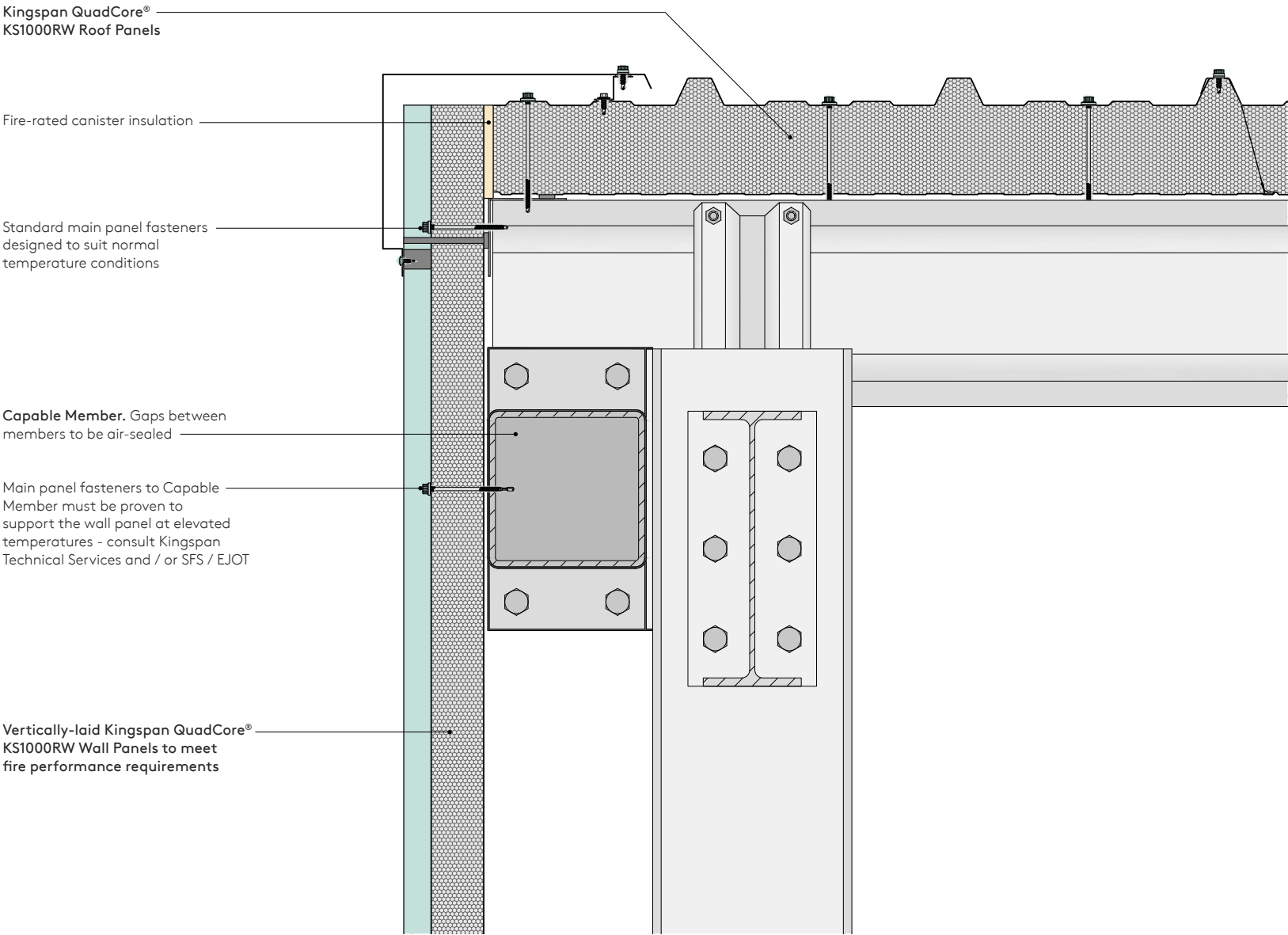
- Kingspan QuadCore® or Eurobond insulated wall panels, vertically-laid (QuadCore® KS1000RW Wall Panels shown).
- Detail applicable to other Kingspan insulated wall panels, e.g. QuadCore® AWP.
- Kingspan Multibeam or Multichannel side rails.

#### Roof

- Kingspan QuadCore® KS1000RW Roof Panels.
- Kingspan Multibeam purlins.



To access the latest version of this detail, please [click here](#).



# TYPICAL CONSTRUCTION DETAILS

## VERTICAL INSULATED PANEL APPLICATIONS

### Intermediate Capable Member at Stack Joint Detail

- Wall
- Kingspan QuadCore® or Eurobond insulated wall panels, vertically-laid (QuadCore® KS1000RW Wall Panels shown).
  - Detail applicable to other Kingspan insulated wall panels, e.g. QuadCore® AWP.
  - Kingspan Multibeam or Multichannel side rails.



To access the latest version of this detail, please [click here](#).

Vertically-laid Kingspan QuadCore® AWP Wall Panels to meet fire performance requirements

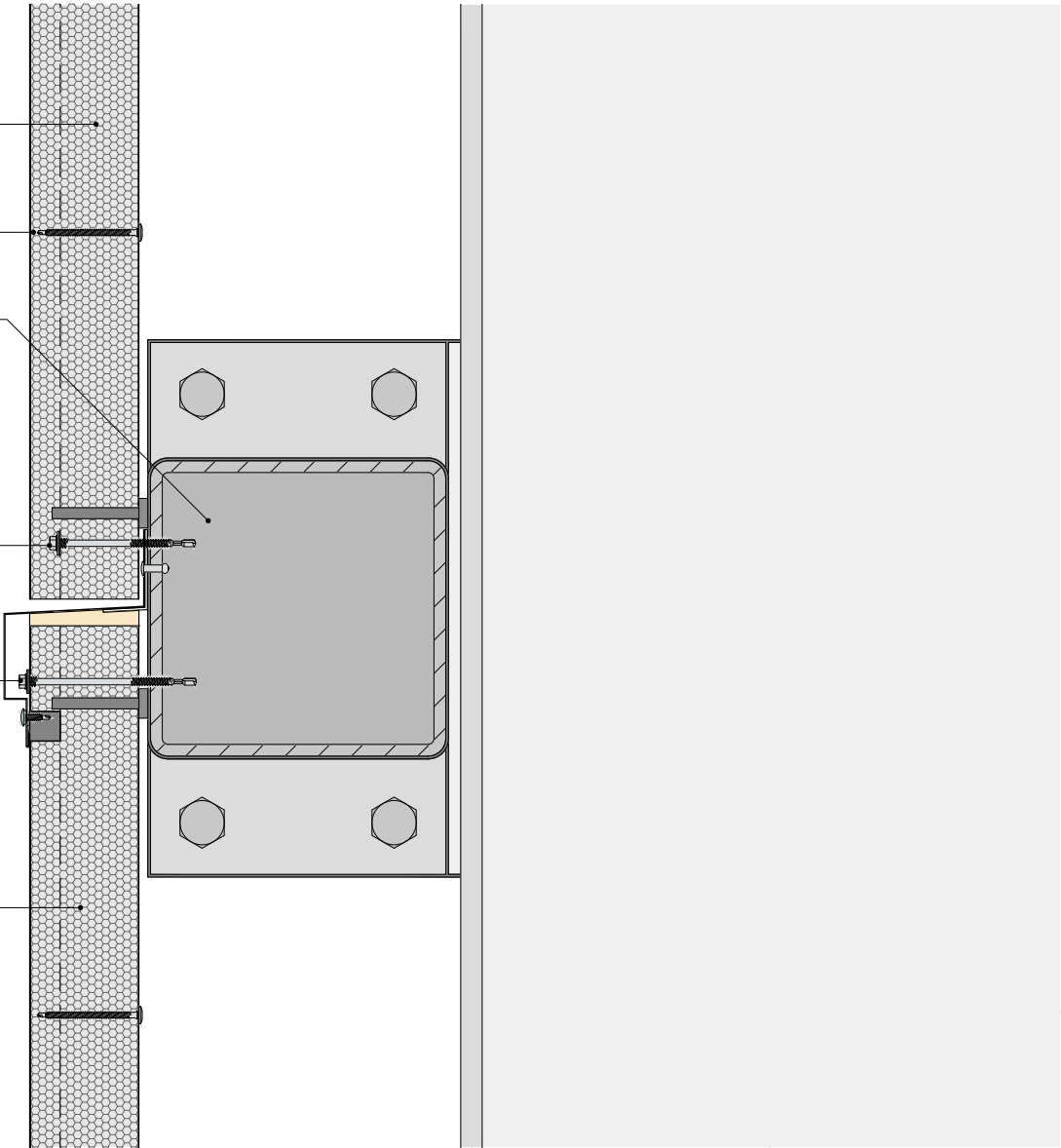
Panel joint stitcher screws at maximum 250 mm centres

Capable Member. Gaps between members to be air-sealed

Standard main panel fasteners designed to suit normal temperature conditions

Main panel fasteners to Capable Member must be proven to support the wall panel at elevated temperatures - consult Kingspan Technical Services and / or SFS / EJOT

Vertically-laid Kingspan QuadCore® AWP Wall Panels to meet fire performance requirements



# TYPICAL CONSTRUCTION DETAILS

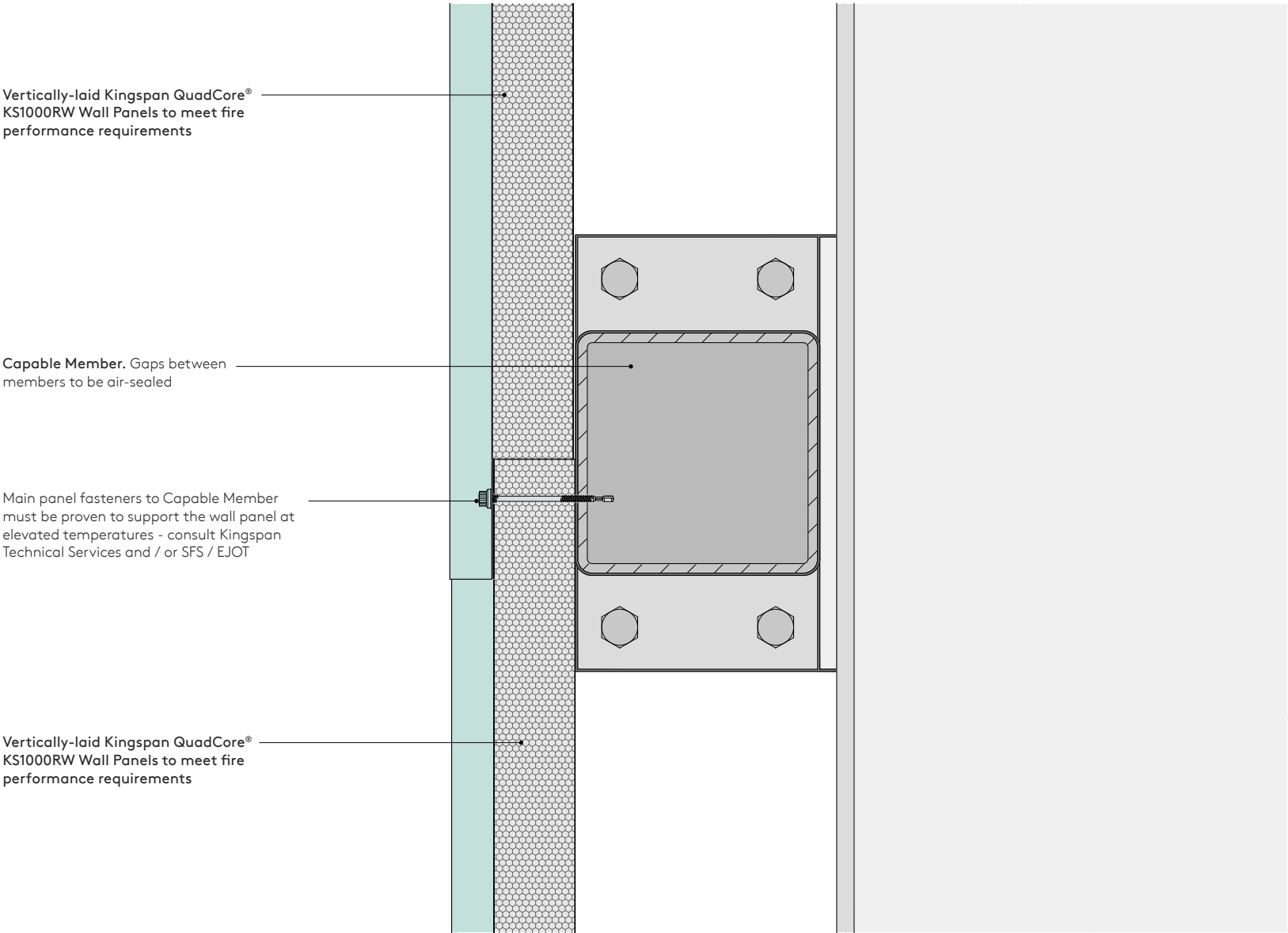
## VERTICAL INSULATED PANEL APPLICATIONS

### Intermediate Capable Member at Lapped Joint Detail

- Wall
- Kingspan QuadCore® or Eurobond insulated wall panels, vertically-laid (QuadCore® KS1000RW Wall Panels shown).
  - Detail applicable to other Kingspan insulated wall panels, e.g. QuadCore® AWP.



To access the latest version of this detail, please [click here](#).



# TYPICAL CONSTRUCTION DETAILS

## VERTICAL INSULATED PANEL APPLICATIONS

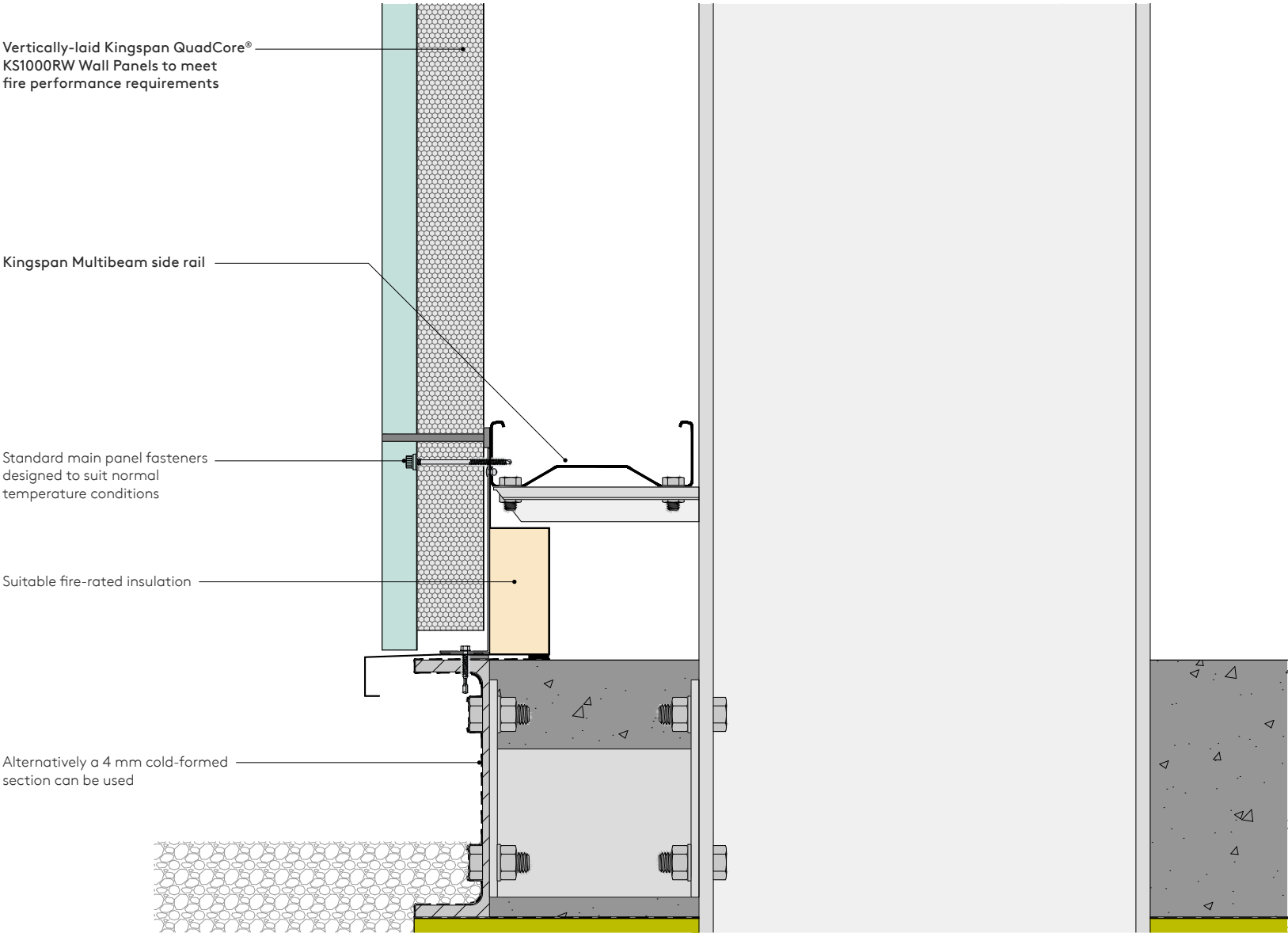
### Boundary Wall Base Detail

Wall

- Kingspan QuadCore® or Eurobond insulated wall panels, vertically-laid (QuadCore® KS1000RW Wall Panels shown).
- Detail applicable to other Kingspan insulated wall panels, e.g. QuadCore® AWP.
- Kingspan Multibeam or Multichannel side rails.



To access the latest version of this detail, please [click here](#).



# TYPICAL CONSTRUCTION DETAILS

## HORIZONTAL INSULATED PANEL APPLICATIONS

|                                                                                    |    |                                                                |    |
|------------------------------------------------------------------------------------|----|----------------------------------------------------------------|----|
| ■ Discontinuous Vertical Multichannel: General Arrangement                         | 26 | ■ Continuous Vertical Cladding Rail: General Arrangement       | 34 |
| ■ PC Cleats: Connection of Multichannel Rails and Multichannel Vertical Members    | 27 | ■ Gable End Detail: Vertical Multibeam Rail                    | 35 |
| ■ Single PC Cleat Joints                                                           | 28 | ■ Intermediate Slotted Support Detail: Vertical Multibeam Rail | 36 |
| ■ Double PC Cleat Joints                                                           | 29 | ■ Boundary Wall Base Detail: Vertical Multibeam Rail           | 37 |
| ■ External Eaves Gutter Detail: Capable Member at Wall Head and Roof Panel Support | 30 |                                                                |    |
| ■ Horizontal Multichannel Side Rail to Vertical Multichannel PC Joint Detail       | 31 |                                                                |    |
| ■ Horizontal Cladding Support: Optimisation through selection of different joints  | 32 |                                                                |    |
| ■ Multichannel Boundary Wall Base Detail                                           | 33 |                                                                |    |

# TYPICAL CONSTRUCTION DETAILS

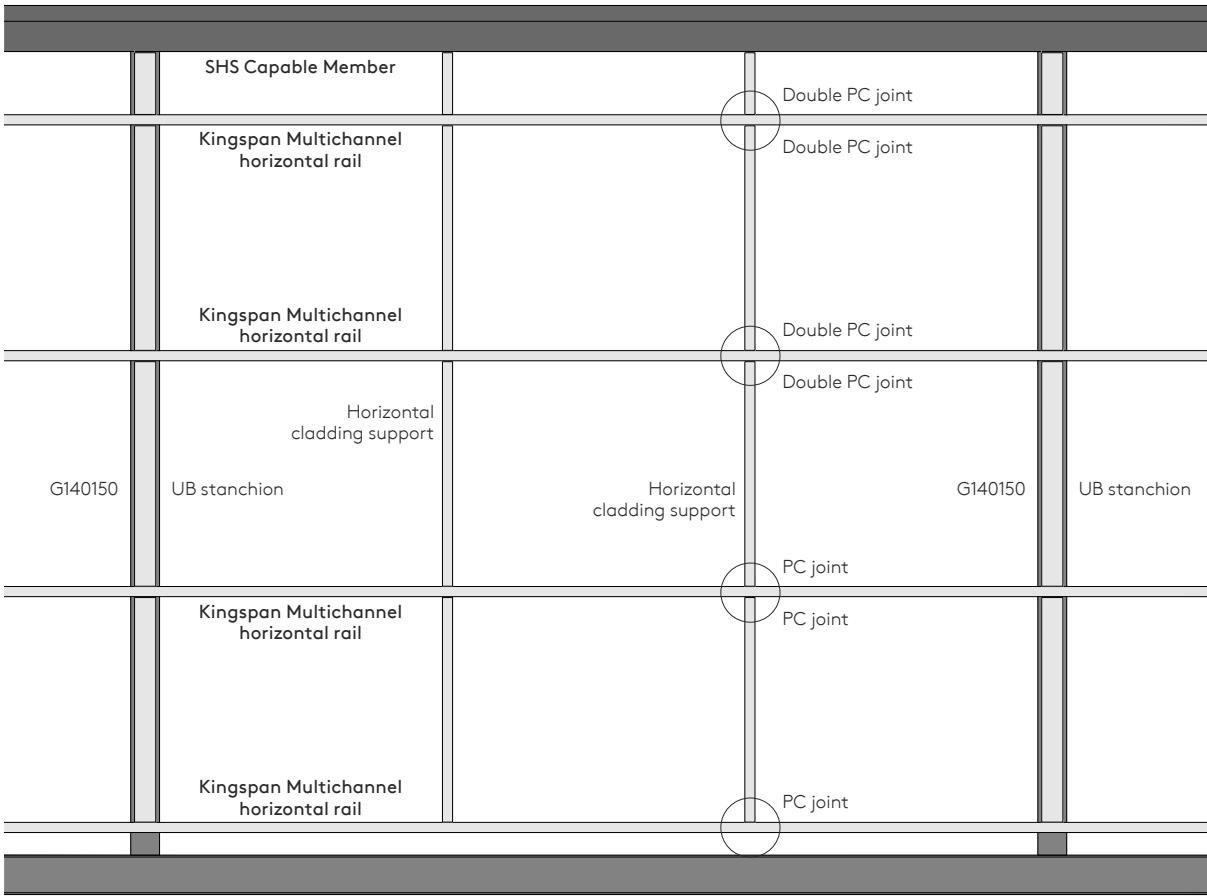
## HORIZONTAL INSULATED PANEL APPLICATIONS

### Discontinuous Vertical Multichannel: General Arrangement

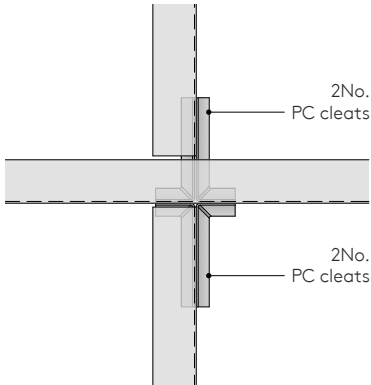
- Cleated vertical cladding rails.
- 2No. PC Cleats to one side of section.
- All bolts to be M16.
- Suitable for use with horizontally-laid Multichannel side rails only.



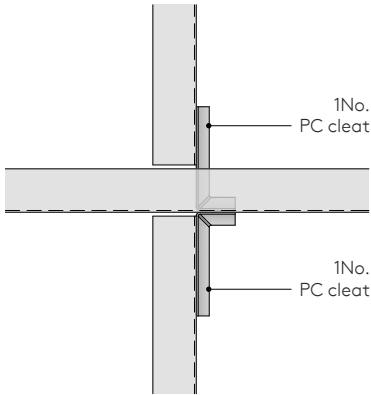
To access the latest version of this detail, please [click here](#).



Part Elevation



Double PC Joints



PC Joints

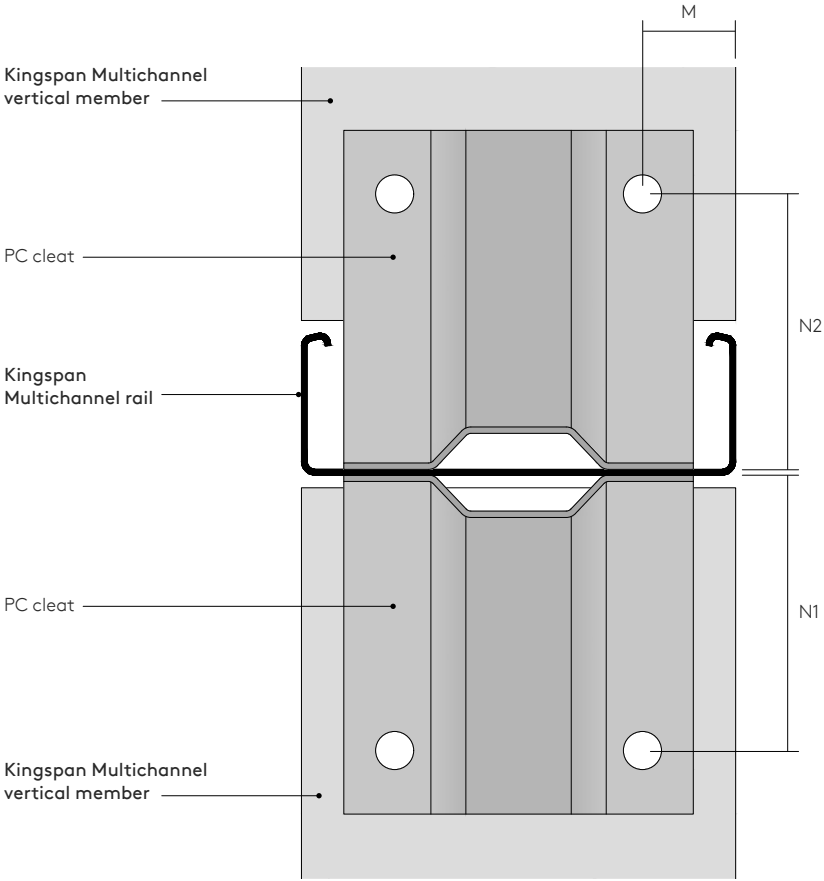
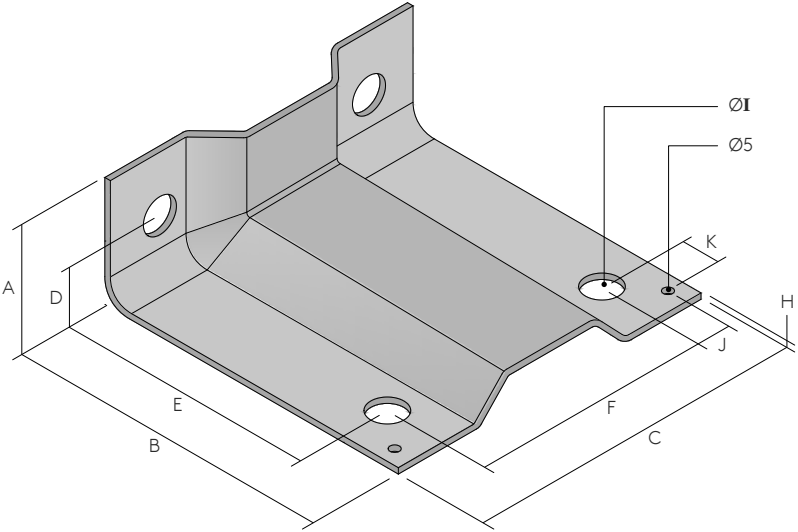
# TYPICAL CONSTRUCTION DETAILS

## HORIZONTAL INSULATED PANEL APPLICATIONS

PC Cleats: Connection of Multichannel  
Rails and Multichannel Vertical  
Members



To access the latest version of  
this detail, please [click here](#).



| Cleat<br>reference | Multichannel<br>web depth (mm) | A<br>(mm) | B<br>(mm) | C<br>(mm) | D<br>(mm) | E<br>(mm) | F<br>(mm) | G<br>(mm) | H<br>(mm) | J<br>(mm) | K<br>(mm) | I<br>(mm) | Bolt diameter<br>(mm) | Vertical Multichannel detailing    |                                   |                                    |
|--------------------|--------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------------------|------------------------------------|-----------------------------------|------------------------------------|
|                    |                                |           |           |           |           |           |           |           |           |           |           |           |                       | Backmark from cladding line M (mm) | Backmark from back of web N1 (mm) | Backmark from front of web N2 (mm) |
| PC225W3B           | 205                            | 60        | 160       | 165       | 30        | 130       | 117       | 24        | 3         | 16        | 20        | 18        | M16                   | 44                                 | 130                               | 130                                |
| PC250W3B           | 235                            | 60        | 160       | 190       | 30        | 130       | 142       | 24        | 3         | 16        | 20        | 18        | M16                   | 47                                 | 130                               | 130                                |
| PC275W3B           | 265                            | 60        | 160       | 215       | 30        | 130       | 167       | 24        | 3         | 16        | 20        | 18        | M16                   | 49                                 | 130                               | 130                                |
| PC300W3B           | 300                            | 60        | 160       | 240       | 30        | 130       | 192       | 24        | 3         | 16        | 20        | 18        | M16                   | 54                                 | 130                               | 130                                |
|                    | 350                            |           |           |           |           |           |           |           |           |           |           |           |                       | 79                                 | 130                               | 130                                |

# TYPICAL CONSTRUCTION DETAILS

## HORIZONTAL INSULATED PANEL APPLICATIONS

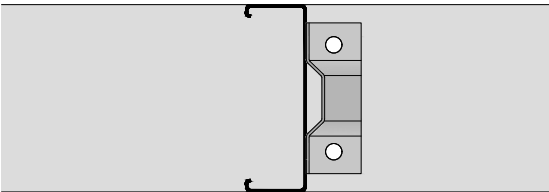
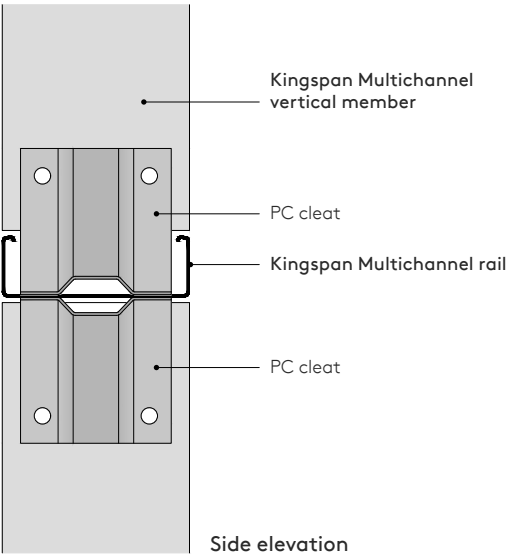
### Single PC Cleat Joints

- 2No. PC Cleats to one side of section.
- All bolts to be M16.
- Maximum joint capacity = 1.7 kN in the fire condition.
- Suitable for use with horizontally-laid Multichannel side rails only.

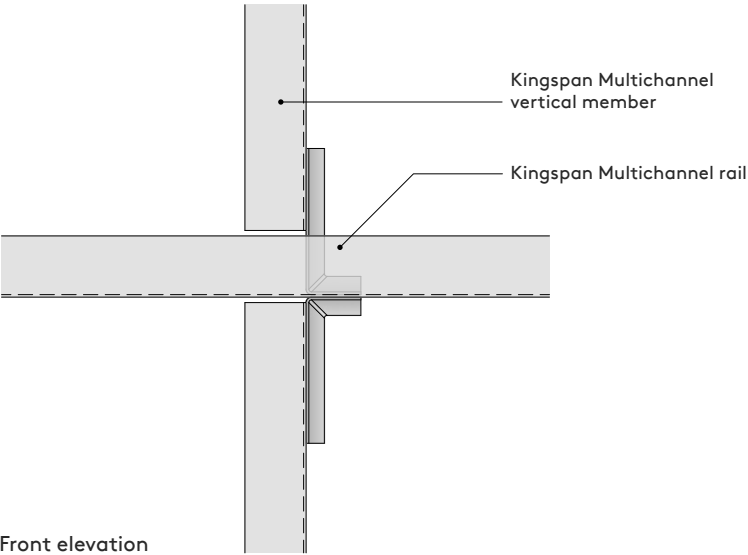
For scenarios exceeding the maximum joint capacity in the fire condition, please contact Kingspan Structural Products Technical Services for guidance.



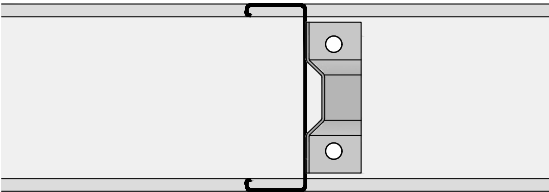
To access the latest version of this detail, please [click here](#).



Underside



Front elevation



Plan

# TYPICAL CONSTRUCTION DETAILS

## HORIZONTAL INSULATED PANEL APPLICATIONS

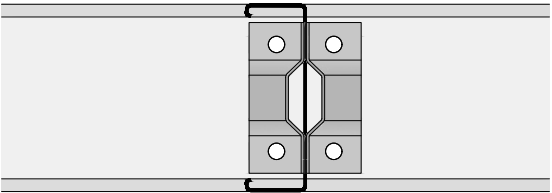
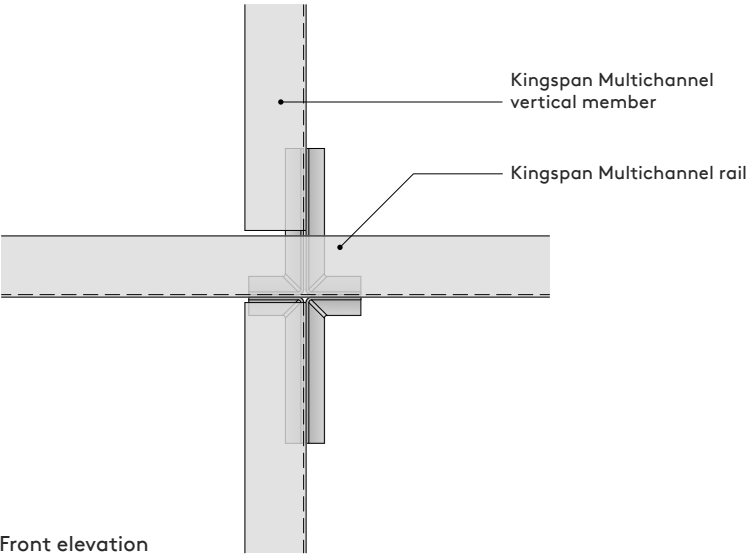
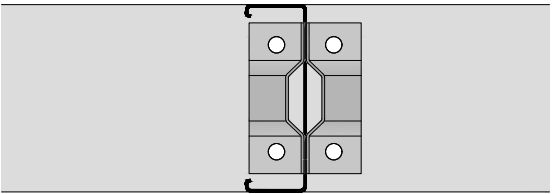
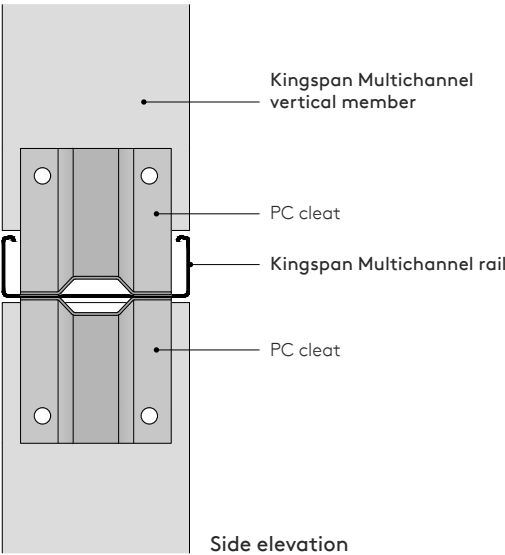
### Double PC Cleat Joints

- 4No. PC cleats to both sides of section.
- All bolts to be M16.
- Maximum joint capacity = 5.0 kN @ in the fire condition.
- Suitable for use with horizontally-laid Multichannel side rails only.

For scenarios exceeding the maximum joint capacity @ in the fire condition, please contact Kingspan Structural Products Technical Services for guidance.



To access the latest version of this detail, please [click here](#).



# TYPICAL CONSTRUCTION DETAILS

## HORIZONTAL INSULATED PANEL APPLICATIONS

### External Eaves Gutter Detail: Capable Member at Wall Head and Roof Panel Support

#### Wall

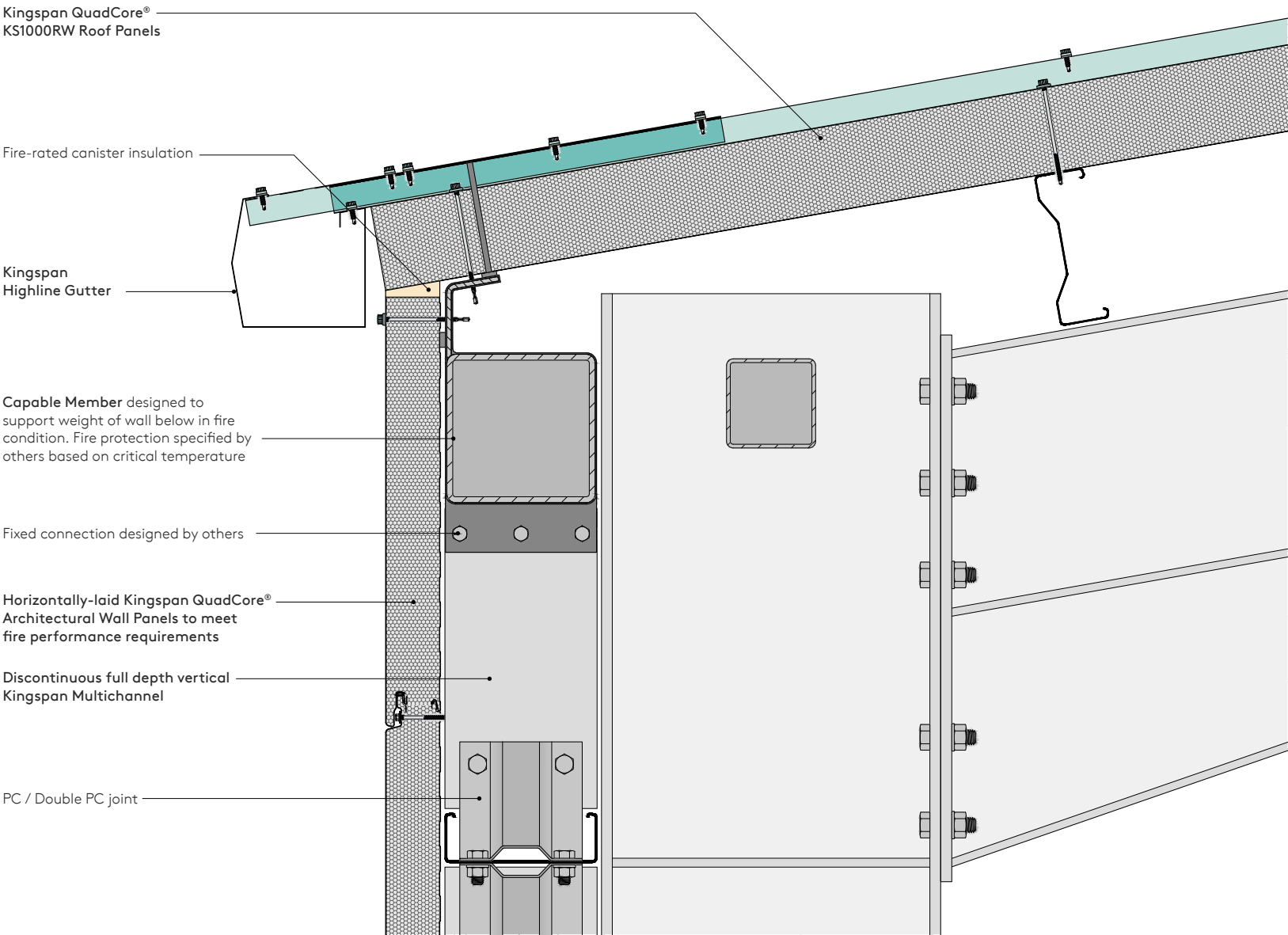
- Kingspan QuadCore® or Eurobond insulated wall panels, horizontally-laid (QuadCore® AWP Wall Panels shown).
- Detail applicable to other Kingspan insulated wall panels, e.g. QuadCore® KS1000RW.
- Kingspan Multichannel side rails.
- Offsite cleat assembly available on request.

#### Roof

- Kingspan QuadCore® KS1000RW Roof Panels.
- Kingspan Multibeam purlins.



To access the latest version of this detail, please [click here](#).



# TYPICAL CONSTRUCTION DETAILS

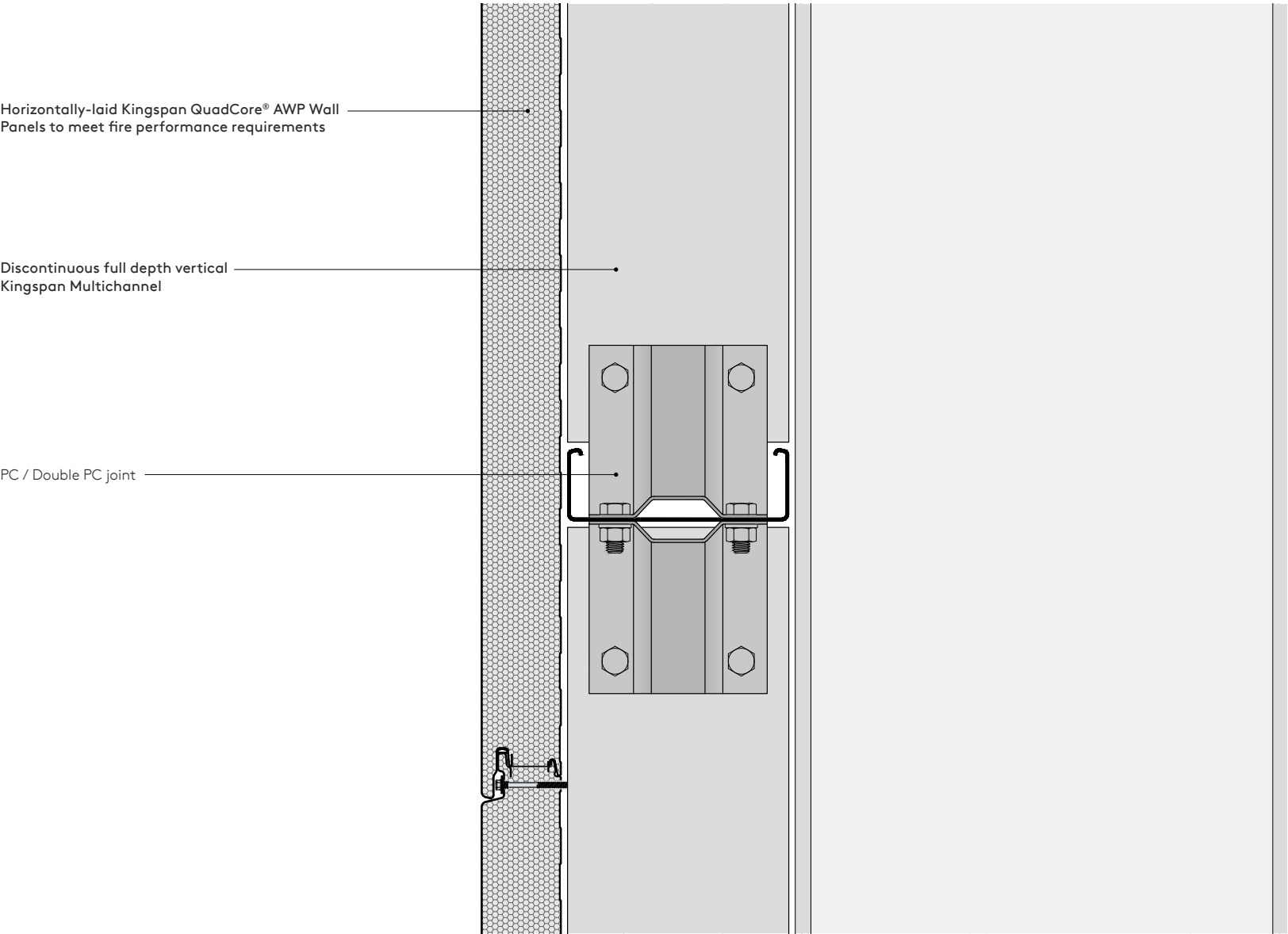
## HORIZONTAL INSULATED PANEL APPLICATIONS

### Horizontal Multichannel Side Rail to Vertical Multichannel PC Joint Detail

- Wall
- Kingspan QuadCore® or Eurobond insulated wall panels, horizontally-laid (QuadCore® AWP Wall Panels shown).
  - Detail applicable to other Kingspan insulated wall panels, e.g. QuadCore® KS1000RW.
  - Kingspan Multichannel side rails.
  - Offsite cleat assembly available on request.



To access the latest version of this detail, please [click here](#).



# TYPICAL CONSTRUCTION DETAILS

## HORIZONTAL INSULATED PANEL APPLICATIONS

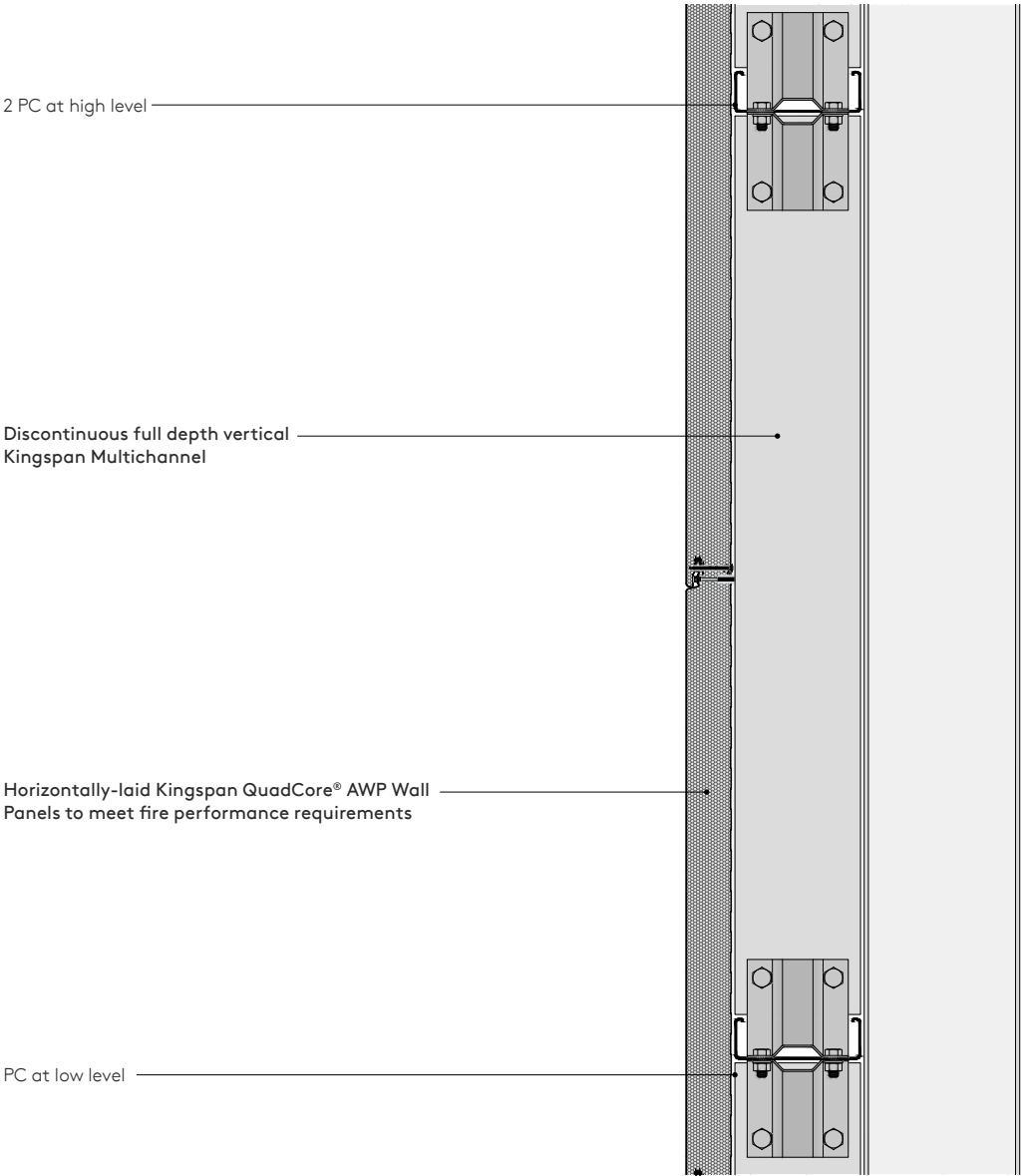
### Horizontal Cladding Support: Optimisation through selection of different joints

#### Wall

- Kingspan QuadCore® or Eurobond insulated wall panels, horizontally-laid (QuadCore® AWP Wall Panels shown).
- Detail applicable to other Kingspan insulated wall panels, e.g. QuadCore® KS1000RW.
- Kingspan Kingspan Multichannel side rails.
- Offsite cleat assembly available on request.



To access the latest version of  
this detail, please [click here](#).



# TYPICAL CONSTRUCTION DETAILS

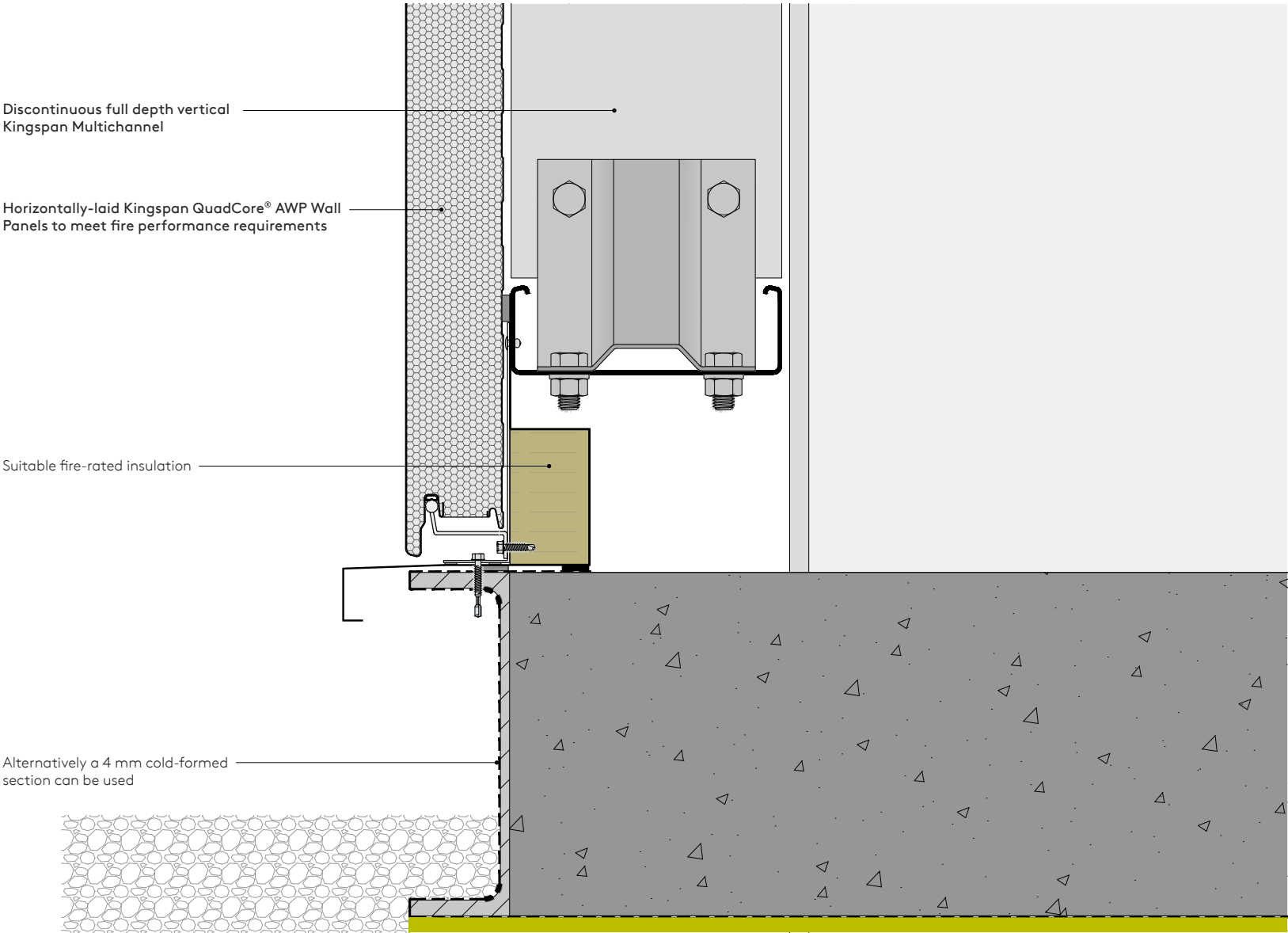
## HORIZONTAL INSULATED PANEL APPLICATIONS

### Multichannel Boundary Wall Base Detail

- Wall
- Kingspan QuadCore® or Eurobond insulated wall panels, horizontally-laid (QuadCore® AWP Wall Panels shown).
  - Detail applicable to other Kingspan insulated wall panels, e.g. QuadCore® KS1000RW.
  - Kingspan Kingspan Multichannel side rails.
  - Offsite cleat assembly available on request.



To access the latest version of this detail, please [click here](#).



# TYPICAL CONSTRUCTION DETAILS

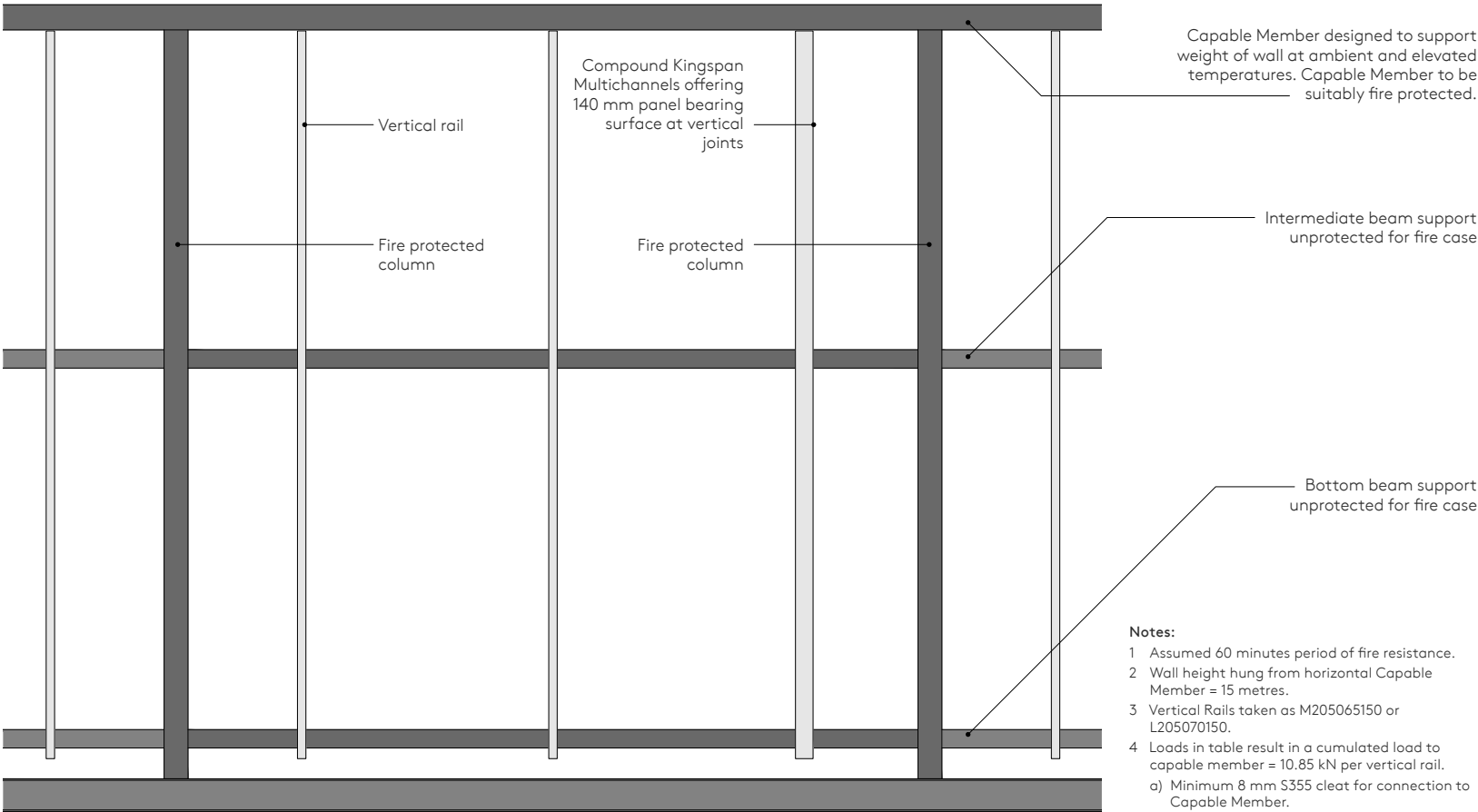
## HORIZONTAL INSULATED PANEL APPLICATIONS

### Continuous Vertical Cladding Rail: General Arrangement

- Horizontal cladding support suitable as either continuous vertical Kingspan Multibeam or Multichannel sections.
- Vertical rail centres to be checked for wind loading at ambient temperature.
- Positive connection at the top of vertical rails, slotted connections as required to intermediate supports to allow for vertical movement.
- Vertical rail lengths over 16 metres available on request.
- For vertical rail restraint requirements please consult Kingspan Technical Services.



To access the latest version of this detail, please [click here](#).



Part Elevation

Vertical Rail Load Table

| Vertical Rail Centres (m)                      | 1.5  | 1.6  | 1.7  | 1.8  | 1.9  | 2.0  | 2.1  | 2.2  | 2.3  | 2.4  | 2.5  | 2.6  | 2.7  | 2.8  | 2.9  | 3.0  |
|------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Allowable Cladding Weight (kg/m <sup>2</sup> ) | 46.4 | 43.5 | 41.0 | 38.7 | 36.6 | 34.8 | 33.2 | 31.7 | 30.3 | 29.0 | 27.9 | 26.8 | 25.8 | 24.9 | 24.0 | 23.2 |

- Notes:**
- 1 Assumed 60 minutes period of fire resistance.
  - 2 Wall height hung from horizontal Capable Member = 15 metres.
  - 3 Vertical Rails taken as M205065150 or L205070150.
  - 4 Loads in table result in a cumulated load to capable member = 10.85 kN per vertical rail.
    - a) Minimum 8 mm S355 cleat for connection to Capable Member.
    - b) Cleat width to be = (rail depth - 4 mm) i.e., 205 mm rails to have 201 mm cleats.
    - c) Minimum 4No. M12 8.8 bolts in shear at rail to cleat connection.
    - d) Connection of cleat to horizontal capable member to be designed by others.
  - 5 The design of the vertical rails should be based on the limiting requirement of:
    - a) the fire scenario (see table), and
    - b) the normal use / ambient scenario, i.e., due to wind, thermal (non-fire) and dead loads.For further guidance during the normal use / ambient scenario, please contact Kingspan Technical Services.

# TYPICAL CONSTRUCTION DETAILS

## HORIZONTAL INSULATED PANEL APPLICATIONS

### Gable End Detail: Vertical Multibeam Rail

#### Wall

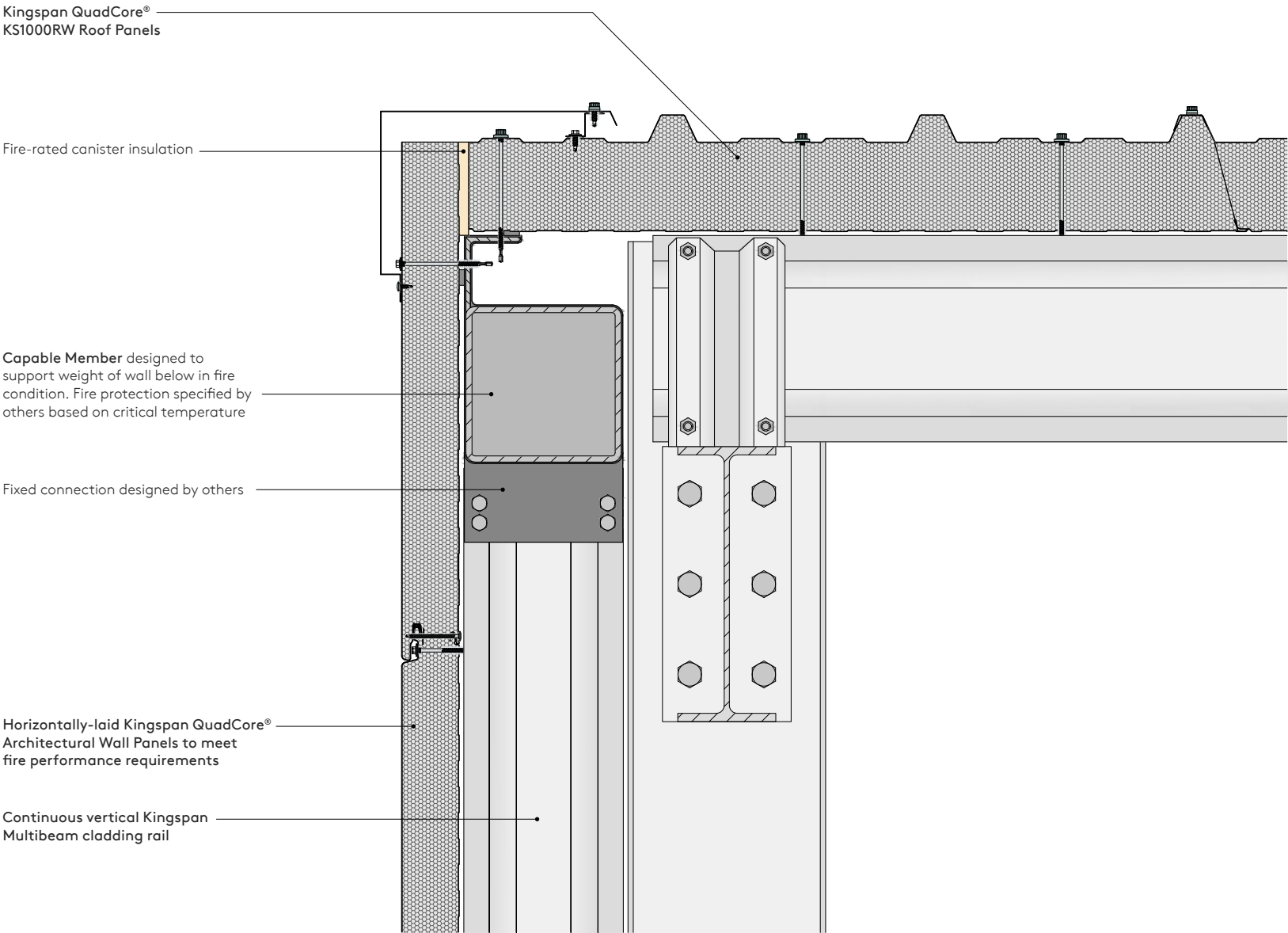
- Kingspan QuadCore® or Eurobond insulated wall panels, horizontally-laid (QuadCore® AWP Wall Panels shown).
- Detail applicable to other Kingspan insulated wall panels, e.g. QuadCore® KS1000RW.
- Available in both Kingspan Multibeam and Multichannel sections.

#### Roof

- Kingspan QuadCore® KS1000RW Roof Panels.
- Kingspan Multibeam purlins.



To access the latest version of this detail, please [click here](#).



# TYPICAL CONSTRUCTION DETAILS

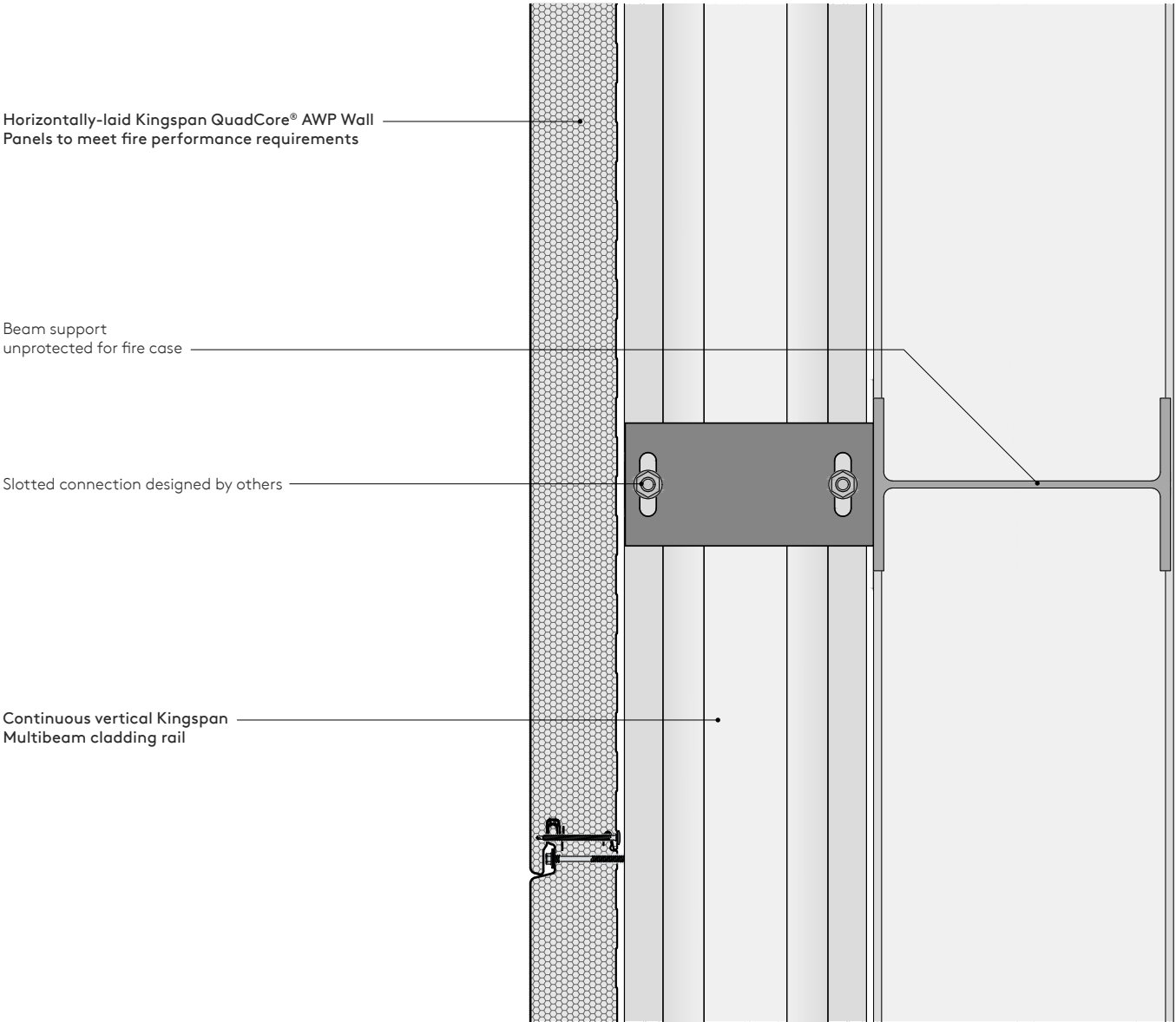
## HORIZONTAL INSULATED PANEL APPLICATIONS

### Intermediate Slotted Support Detail: Vertical Multibeam Rail

- Wall
- Kingspan QuadCore® or Eurobond insulated wall panels, horizontally-laid (QuadCore® AWP Wall Panels shown).
  - Detail applicable to other Kingspan insulated wall panels, e.g. QuadCore® KS1000RW.
  - Available in both Kingspan Multibeam and Multichannel sections.



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# TYPICAL CONSTRUCTION DETAILS

## HORIZONTAL INSULATED PANEL APPLICATIONS

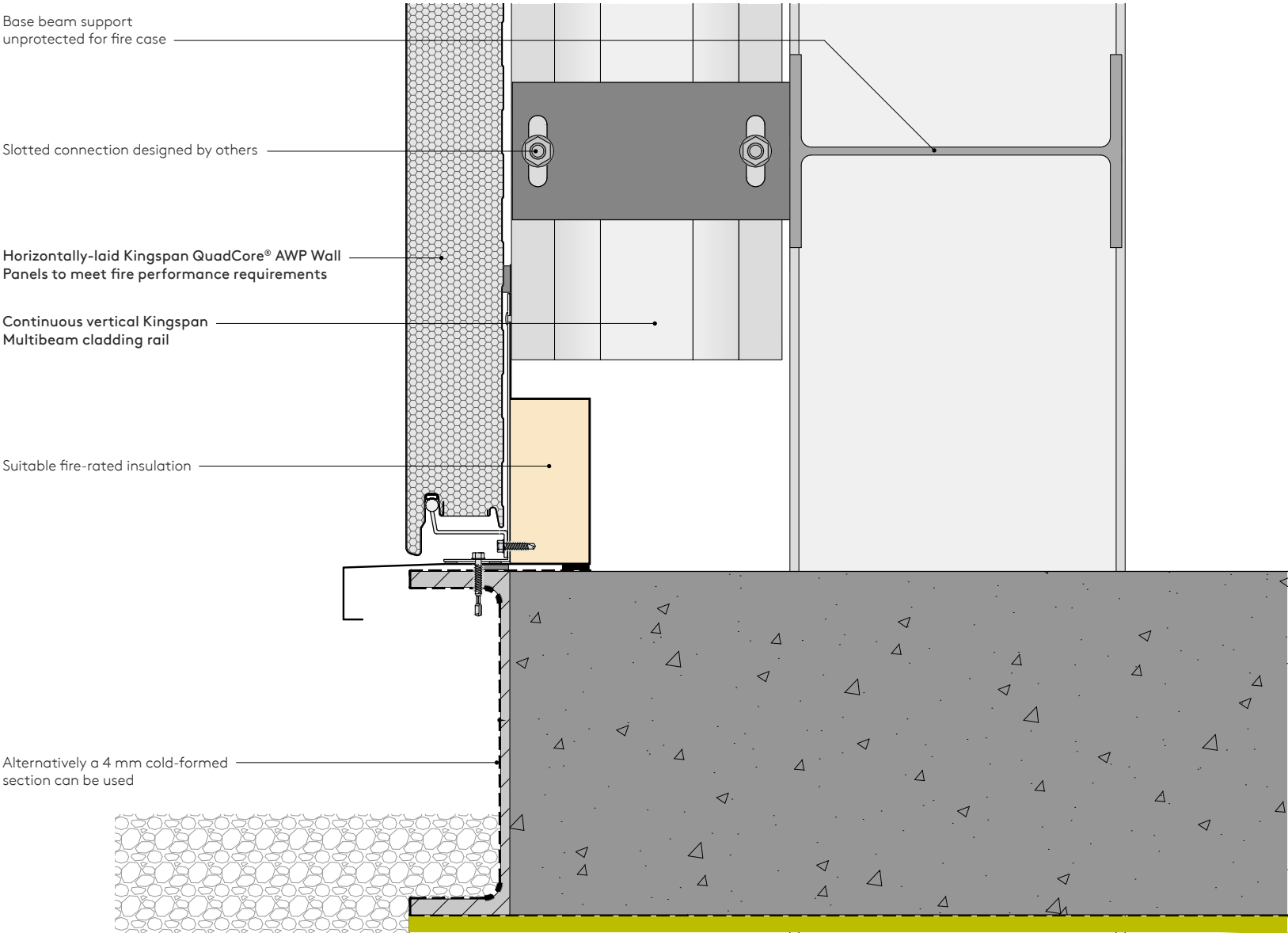
### Boundary Wall Base Detail: Vertical Multibeam Rail

Wall

- Kingspan QuadCore® or Eurobond insulated wall panels, horizontally-laid (QuadCore® AWP Wall Panels shown).
- Detail applicable to other Kingspan insulated wall panels, e.g. QuadCore® KS1000RW.
- Available in both Kingspan Multibeam and Multichannel sections.



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# INSULATED PANEL FASTENER TABLES

|                                      |    |
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| ■ Vertically-laid Insulated Panels   | 39 |
| ■ Horizontally-laid Insulated Panels | 44 |



# INSULATED PANEL FASTENER TABLES

## VERTICALLY-LAID INSULATED PANELS

### QuadCore® KS1000RW Wall Panels

Number of panel fasteners required to 'hang' the insulated panel from the horizontal Capable Member.

| Panel Length Hung from Capable Member (m) | Panel Thickness (mm) |    |    |    |    |    |     |     |     |     |     |
|-------------------------------------------|----------------------|----|----|----|----|----|-----|-----|-----|-----|-----|
|                                           | 40                   | 53 | 60 | 73 | 80 | 91 | 100 | 115 | 120 | 137 | 150 |
| 5.0                                       | 3                    | 3  | 3  | 3  | 3  | 3  | 3   | 3   | 3   | 3   | 3   |
| 5.5                                       | 3                    | 3  | 3  | 3  | 3  | 3  | 3   | 3   | 3   | 3   | 3   |
| 6.0                                       | 3                    | 3  | 3  | 3  | 3  | 3  | 3   | 3   | 3   | 3   | 3   |
| 6.5                                       | 3                    | 3  | 3  | 3  | 3  | 3  | 3   | 3   | 3   | 3   | 3   |
| 7.0                                       | 3                    | 3  | 3  | 3  | 3  | 3  | 3   | 3   | 3   | 3   | 3   |
| 7.5                                       | 3                    | 3  | 3  | 3  | 3  | 3  | 3   | 3   | 3   | 3   | 3   |
| 8.0                                       | 3                    | 3  | 3  | 3  | 3  | 3  | 3   | 3   | 3   | 3   | 3   |
| 8.5                                       | 3                    | 3  | 3  | 3  | 3  | 3  | 3   | 3   | 3   | 3   | 3   |
| 9.0                                       | 3                    | 3  | 3  | 3  | 3  | 3  | 3   | 3   | 3   | 3   | 3   |
| 9.5                                       | 3                    | 3  | 3  | 3  | 3  | 3  | 3   | 3   | 3   | 3   | 3   |
| 10.0                                      | 3                    | 3  | 3  | 3  | 3  | 3  | 3   | 3   | 3   | 3   | 3   |
| 10.5                                      | 3                    | 3  | 3  | 3  | 3  | 3  | 3   | 3   | 3   | 3   | 3   |
| 11.0                                      | 3                    | 3  | 3  | 3  | 3  | 3  | 3   | 3   | 3   | 3   | 3   |
| 11.5                                      | 3                    | 3  | 3  | 3  | 3  | 3  | 3   | 3   | 3   | 3   | 3   |
| 12.0                                      | 3                    | 3  | 3  | 3  | 3  | 3  | 3   | 3   | 3   | 3   | 3   |
| 12.5                                      | 3                    | 3  | 3  | 3  | 3  | 3  | 3   | 3   | 3   | 3   | 3   |
| 13.0                                      | 3                    | 3  | 3  | 3  | 3  | 3  | 3   | 3   | 3   | 3   | 3   |
| 13.5                                      | 3                    | 3  | 3  | 3  | 3  | 3  | 3   | 3   | 3   | 3   | 3   |
| 14.0                                      | 3                    | 3  | 3  | 3  | 3  | 3  | 3   | 3   | 3   | 3   | 3   |
| 14.5                                      | 3                    | 3  | 3  | 3  | 3  | 3  | 3   | 3   | 3   | 3   | 3   |
| 15.0                                      | 3                    | 3  | 3  | 3  | 3  | 3  | 3   | 3   | 3   | 3   | 3   |

- Notes / assumptions:**
- 1 Assumed 60 minutes period of fire resistance.
  - 2 Through-fix carbon / stainless steel fasteners to be used for connections from panel to protected Capable Member.
    - a) Fasteners have an assumed shear / bearing capacity of 0.43 kN or greater for the liner / internal face (at ambient temperature).
      - (i) Liner / internal face gauge and grade assumed as nominally 0.32 mm and S220GD respectively.
      - (ii) Please contact the fastener supplier for confirmation of values.
    - b) Fasteners have an assumed shear / bearing capacity of 0.9 kN or greater for the external face (at ambient temperature).
      - (i) External face gauge and grade assumed as nominally 0.465 mm and S280GD respectively.
      - (ii) Please contact the fastener supplier for confirmation of values.
    - c) Minimum fastener edge distance of 5x the fastener diameter from the panel end.
    - d) Through-fix fasteners must be away from the vertical joints, i.e. panel should be face fixed (no hidden fixings) at the Capable Member locations.
    - e) Fastener must engage both the internal and external face of the cladding.
    - f) The quantity of fasteners at the head of the wall should be the greater of the requirements from:
      - (i) a fire scenario (see table), and
      - (ii) during normal use / ambient scenario, i.e. due to wind, thermal (non-fire) and dead loads.For further guidance on the fastener quantities during the normal use / ambient scenario, please contact Kingspan Technical Services.
  - 3 No additional weight, e.g. from signage / façades, has been included to the weight of the cladding.
  - 4 The protected member at the head of the wall panel must be designed to carry the whole weight of the wall system.
    - a) Capable Member assumed to reach a temperature no greater than **600°C**.
  - 5 For cases falling outside the specifications above, please contact Kingspan Technical Services.

# INSULATED PANEL FASTENER TABLES

## VERTICALLY-LAID INSULATED PANELS

### QuadCore® Architectural Wall Panels

Number of panel fasteners required to 'hang' the insulated panel from the horizontal Capable Member.

| Panel Length Hung from Capable Member (m) | Panel Thickness (mm) |    |    |    |     |     |     |     |
|-------------------------------------------|----------------------|----|----|----|-----|-----|-----|-----|
|                                           | 70                   | 74 | 80 | 90 | 100 | 120 | 140 | 150 |
| 5.0                                       | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 5.5                                       | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 6.0                                       | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 6.5                                       | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 7.0                                       | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 7.5                                       | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 8.0                                       | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 8.5                                       | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 9.0                                       | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 9.5                                       | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 10.0                                      | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 10.5                                      | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 11.0                                      | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 11.5                                      | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 3   |
| 12.0                                      | 2                    | 2  | 2  | 2  | 2   | 2   | 3   | 3   |
| 12.5                                      | 2                    | 2  | 2  | 2  | 2   | 3   | 3   | 3   |
| 13.0                                      | 2                    | 2  | 2  | 2  | 2   | 3   | 3   | 3   |
| 13.5                                      | 2                    | 2  | 2  | 2  | 3   | 3   | 3   | 3   |
| 14.0                                      | 2                    | 2  | 3  | 3  | 3   | 3   | 3   | 3   |
| 14.5                                      | 3                    | 3  | 3  | 3  | 3   | 3   | 3   | 3   |
| 15.0                                      | 3                    | 3  | 3  | 3  | 3   | 3   | 3   | 3   |

- Notes / assumptions:**
- 1 Assumed 60 minutes period of fire resistance.
  - 2 Through-fix carbon / stainless steel fasteners to be used for connections from panel to protected Capable Member.
    - a) Fasteners have an assumed shear / bearing capacity of 0.75 kN or greater for the liner / internal face (at ambient temperature).
      - (i) Liner / internal face gauge and grade assumed as nominally 0.465 mm and S220GD respectively.
      - (ii) Please contact the fastener supplier for confirmation of values.
    - b) Fasteners have an assumed shear / bearing capacity of 0.9 kN or greater for the external face (at ambient temperature).
      - (i) External face gauge and grade assumed as nominally 0.465 mm and S280GD respectively.
      - (ii) Please contact the fastener supplier for confirmation of values.
    - c) Minimum fastener edge distance of 5x the fastener diameter from the panel end.
    - d) Through-fix fasteners must be away from the vertical joints, i.e. panel should be face fixed (no hidden fixings) at the Capable Member locations.
    - e) Fastener must engage both the internal and external face of the cladding.
    - f) The quantity of fasteners at the head of the wall should be the greater of the requirements from:
      - (i) a fire scenario (see table), and
      - (ii) during normal use / ambient scenario, i.e. due to wind, thermal (non-fire) and dead loads.For further guidance on the fastener quantities during the normal use / ambient scenario, please contact Kingspan Technical Services.
  - 3 No additional weight, e.g. from signage / façades, has been included to the weight of the cladding.
  - 4 The protected member at the head of the wall panel must be designed to carry the whole weight of the wall system.
    - a) Capable Member assumed to reach a temperature no greater than **600°C**.
  - 5 For cases falling outside the specifications above, please contact Kingspan Technical Services.

# INSULATED PANEL FASTENER TABLES

## VERTICALLY-LAID INSULATED PANELS

### QuadCore® AWP-S Wall Panels

Number of panel fasteners required to 'hang' the insulated panel from the horizontal Capable Member.

| Panel Length Hung from Capable Member (m) | Panel Thickness (mm) |
|-------------------------------------------|----------------------|
|                                           | 150                  |
| 5.0                                       | 2                    |
| 5.5                                       | 2                    |
| 6.0                                       | 2                    |
| 6.5                                       | 2                    |
| 7.0                                       | 2                    |
| 7.5                                       | 2                    |
| 8.0                                       | 2                    |
| 8.5                                       | 2                    |
| 9.0                                       | 2                    |
| 9.5                                       | 2                    |
| 10.0                                      | 2                    |
| 10.5                                      | 2                    |
| 11.0                                      | 2                    |
| 11.5                                      | 2                    |
| 12.0                                      | 2                    |
| 12.5                                      | 2                    |
| 13.0                                      | 3                    |
| 13.5                                      | 3                    |
| 14.0                                      | 3                    |
| 14.5                                      | 3                    |
| 15.0                                      | 3                    |

Notes / assumptions:

- 1 Assumed 60 minutes period of fire resistance.
- 2 Through-fix carbon / stainless steel fasteners to be used for connections from panel to protected Capable Member.

a) Fasteners have an assumed shear / bearing capacity of 0.75 kN or greater for the liner / internal face (at ambient temperature).

(i) Liner / internal face gauge and grade assumed as nominally 0.465 mm and S220GD respectively.

(ii) Please contact the fastener supplier for confirmation of values.

b) Fasteners have an assumed shear / bearing capacity of 1.31 kN or greater for the external face (at ambient temperature).

(i) External face gauge and grade assumed as nominally 0.465 mm and S280GD respectively.

(ii) Please contact the fastener supplier for confirmation of values.

c) Minimum fastener edge distance of 5x the fastener diameter from the panel end.

d) Through-fix fasteners must be away from the vertical joints, i.e. panel should be face fixed (no hidden fixings) at the Capable Member locations.

e) Fastener must engage both the internal and external face of the cladding.

f) The quantity of fasteners at the head of the wall should be the greater of the requirements from:

(i) a fire scenario (see table), and

(ii) during normal use / ambient scenario, i.e. due to wind, thermal (non-fire) and dead loads.

For further guidance on the fastener quantities during the normal use / ambient scenario, please contact Kingspan Technical Services.

3 No additional weight, e.g. from signage / façades, has been included to the weight of the cladding.

4 The protected member at the head of the wall panel must be designed to carry the whole weight of the wall system.

a) Capable Member assumed to reach a temperature no greater than 600°C.

5 For cases falling outside the specifications above, please contact Kingspan Technical Services.
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# INSULATED PANEL FASTENER TABLES

## VERTICALLY-LAID INSULATED PANELS

### QuadCore® Evolution Wall Panels

Number of panel fasteners required to 'hang' the insulated panel from the horizontal Capable Member.

| Panel Length Hung from Capable Member (m) | Panel Thickness (mm) |    |    |    |     |     |     |     |
|-------------------------------------------|----------------------|----|----|----|-----|-----|-----|-----|
|                                           | 70                   | 74 | 80 | 90 | 100 | 120 | 140 | 150 |
| 5.0                                       | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 5.5                                       | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 6.0                                       | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 6.5                                       | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 7.0                                       | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 7.5                                       | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 8.0                                       | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 8.5                                       | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 9.0                                       | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 9.5                                       | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 10.0                                      | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 10.5                                      | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 11.0                                      | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 11.5                                      | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 12.0                                      | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 12.5                                      | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 13.0                                      | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 13.5                                      | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 14.0                                      | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 14.5                                      | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 15.0                                      | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |

- Notes / assumptions:**
- Assumed 60 minutes period of fire resistance.
  - Through-fix carbon / stainless steel fasteners to be used for connections from panel to protected Capable Member.
    - Fasteners have an assumed shear / bearing capacity of 0.75 kN or greater for the liner / internal face (at ambient temperature).
      - Liner / internal face gauge and grade assumed as nominally 0.465 mm and S220GD respectively.
      - Please contact the fastener supplier for confirmation of values.
    - Fasteners have an assumed shear / bearing capacity of 1.31 kN or greater for the external face (at ambient temperature).
      - External face gauge and grade assumed as nominally 0.595 mm and S280GD respectively.
      - Please contact the fastener supplier for confirmation of values.
    - Minimum fastener edge distance of 5x the fastener diameter from the panel end.
    - Through-fix fasteners must be away from the vertical joints, i.e. panel should be face fixed (no hidden fixings) at the Capable Member locations.
    - Fastener must engage both the internal and external face of the cladding.
    - The quantity of fasteners at the head of the wall should be the greater of the requirements from:
      - a fire scenario (see table), and
      - during normal use / ambient scenario, i.e. due to wind, thermal (non-fire) and dead loads.For further guidance on the fastener quantities during the normal use / ambient scenario, please contact Kingspan Technical Services.
  - No additional weight, e.g. from signage / façades, has been included to the weight of the cladding.
  - The protected member at the head of the wall panel must be designed to carry the whole weight of the wall system.
    - Capable Member assumed to reach a temperature no greater than **600°C**.
  - For cases falling outside the specifications above, please contact Kingspan Technical Services.

# INSULATED PANEL FASTENER TABLES

## VERTICALLY-LAID INSULATED PANELS

### QuadCore® Coldstore Panels

Number of panel fasteners required to 'hang' the insulated panel from the horizontal Capable Member.

| Panel Length Hung from Capable Member (m) | Panel Thickness (mm) |     |     |     |     |     |
|-------------------------------------------|----------------------|-----|-----|-----|-----|-----|
|                                           | 100                  | 125 | 150 | 175 | 200 | 220 |
| 5.0                                       | 3                    | 3   | 3   | 3   | 3   | 3   |
| 5.5                                       | 3                    | 3   | 3   | 3   | 3   | 3   |
| 6.0                                       | 3                    | 3   | 3   | 3   | 3   | 3   |
| 6.5                                       | 3                    | 3   | 3   | 3   | 3   | 3   |
| 7.0                                       | 3                    | 3   | 3   | 3   | 3   | 3   |
| 7.5                                       | 3                    | 3   | 3   | 3   | 3   | 3   |
| 8.0                                       | 3                    | 3   | 3   | 3   | 3   | 3   |
| 8.5                                       | 3                    | 3   | 3   | 3   | 3   | 3   |
| 9.0                                       | 3                    | 3   | 3   | 3   | 3   | 3   |
| 9.5                                       | 3                    | 3   | 3   | 3   | 3   | 3   |
| 10.0                                      | 3                    | 3   | 3   | 3   | 3   | 3   |
| 10.5                                      | 3                    | 3   | 3   | 3   | 3   | 3   |
| 11.0                                      | 3                    | 3   | 3   | 3   | 3   | 3   |
| 11.5                                      | 3                    | 3   | 3   | 3   | 3   | 4   |
| 12.0                                      | 3                    | 3   | 3   | 3   | 4   | 4   |
| 12.5                                      | 3                    | 3   | 3   | 3   | 4   | 4   |
| 13.0                                      | 3                    | 3   | 3   | 4   | 4   | 4   |
| 13.5                                      | 3                    | 3   | 4   | 4   | 4   | 4   |
| 14.0                                      | 3                    | 3   | 4   | 4   | 4   | 4   |
| 14.5                                      | 3                    | 4   | 4   | 4   | 4   | 4   |
| 15.0                                      | 3                    | 4   | 4   | 4   | 4   | 4   |

Notes / assumptions:

- 1 Assumed 60 minutes period of fire resistance.
- 2 Through-fix carbon / stainless steel fasteners to be used for connections from panel to protected Capable Member.

a) Fasteners have an assumed shear / bearing capacity of 0.75 kN or greater for the liner / internal face (at ambient temperature).

(i) Liner / internal face gauge and grade assumed as nominally 0.465 mm and S220GD respectively.

(ii) Please contact the fastener supplier for confirmation of values.

b) Fasteners have an assumed shear / bearing capacity of 0.75 kN or greater for the external face (at ambient temperature).

(i) External face gauge and grade assumed as nominally 0.465 mm and S220GD respectively.

(ii) Please contact the fastener supplier for confirmation of values.

c) Minimum fastener edge distance of 5x the fastener diameter from the panel end.

d) Through-fix fasteners must be away from the vertical joints, i.e. panel should be face fixed (no hidden fixings) at the Capable Member locations.

e) Fastener must engage both the internal and external face of the cladding.

f) The quantity of fasteners at the head of the wall should be the greater of the requirements from:

(i) a fire scenario (see table), and

(ii) during normal use / ambient scenario, i.e. due to wind, thermal (non-fire) and dead loads.

For further guidance on the fastener quantities during the normal use / ambient scenario, please contact Kingspan Technical Services.

3 No additional weight, e.g. from signage / façades, has been included to the weight of the cladding.

4 The protected member at the head of the wall panel must be designed to carry the whole weight of the wall system.

a) Capable Member assumed to reach a temperature no greater than 600°C.

5 For cases falling outside the specifications above, please contact Kingspan Technical Services.
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# INSULATED PANEL FASTENER TABLES

## HORIZONTALLY-LAID INSULATED PANELS

### QuadCore® KS1000RW Wall Panels - unprotected vertical cold-rolled rails

Number of panel fasteners required to attach to the unprotected vertical rails.

| Panel Span Between Vertical Capable Members (m) | Panel Thickness (mm) |    |    |    |     |     |     |     |     |
|-------------------------------------------------|----------------------|----|----|----|-----|-----|-----|-----|-----|
|                                                 | 60                   | 73 | 80 | 91 | 100 | 115 | 120 | 137 | 150 |
| 1.0                                             | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   | 2   |
| 1.2                                             | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   | 2   |
| 1.4                                             | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   | 2   |
| 1.6                                             | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   | 2   |
| 1.8                                             | 3                    | 3  | 3  | 3  | 3   | 3   | 3   | 3   | 3   |
| 2.0                                             | 3                    | 3  | 3  | 3  | 3   | 3   | 3   | 3   | 3   |
| 2.2                                             | 3                    | 3  | 3  | 3  | 3   | 3   | 3   | 3   | 3   |
| 2.4                                             | 3                    | 3  | 3  | 3  | 3   | 3   | 3   | 3   | 3   |
| 2.6                                             | 3                    | 3  | 3  | 3  | 3   | 3   | 3   | 3   | 3   |
| 2.8                                             | 4                    | 4  | 4  | 4  | 4   | 4   | 4   | 4   | 4   |
| 3.0                                             | 4                    | 4  | 4  | 4  | 4   | 4   | 4   | 4   | 4   |

Notes / assumptions:

- Assumed 60 minutes period of fire resistance.
- Through-fix carbon / stainless steel fasteners to be used for connections from panel to protected Capable Member.
  - Fasteners have an assumed shear / bearing design resistance of 0.43 kN or greater for the liner / internal face (at ambient temperature).
    - Liner / internal face gauge and grade assumed as nominally 0.32 mm and S220GD respectively.
    - Please contact the fastener supplier for confirmation of values.
  - Fasteners have an assumed shear / bearing design resistance of 0.9 kN or greater for the external face (at ambient temperature).
    - External face gauge and grade assumed as nominally 0.465 mm and S280GD respectively.
    - Please contact the fastener supplier for confirmation of values.
  - Fastener must engage both the internal and external face of the cladding.
- The quantity of fasteners from each panel to vertical cladding rail should be the greater of the requirements from:
  - a fire scenario (see table), and
  - during normal use / ambient scenario, i.e. due to wind, thermal (non-fire) and dead loads.For further guidance on the fastener quantities during the normal use / ambient scenario, please contact Kingspan Technical Services.
- For panel ends and end laps, a minimum of 3 fasteners are required.
- No additional weight, e.g. from signage / façades, has been included to the weight of the cladding.
- Vertical cladding rails are assumed to be unprotected and reach a temperature no greater than **945°C** for the given period of fire resistance.
  - Each vertical cladding rail must provide a load path for the loads associated with its tributary area of wall.
- For cases falling outside the specifications above, please contact Kingspan Technical Services.

### QuadCore® KS1000RW Wall Panels - fire protected columns

Number of panel fasteners required to attach to the fire protected columns.

| Panel Span Between Vertical Capable Members (m) | Panel Thickness (mm) |    |    |    |     |     |     |     |     |
|-------------------------------------------------|----------------------|----|----|----|-----|-----|-----|-----|-----|
|                                                 | 60                   | 73 | 80 | 91 | 100 | 115 | 120 | 137 | 150 |
| 5.0                                             | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   | 2   |
| 5.25                                            | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   | 2   |
| 5.5                                             | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   | 2   |
| 5.75                                            | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   | 2   |
| 6.0                                             | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   | 2   |
| 6.25                                            | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   | 2   |
| 6.5                                             | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   | 2   |
| 6.75                                            | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   | 2   |
| 7.0                                             | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   | 2   |
| 7.25                                            | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   | 2   |
| 7.5                                             | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   | 2   |

Notes / assumptions:

- Assumed 60 minutes period of fire resistance.
- Through-fix carbon / stainless steel fasteners to be used for connections from panel to protected Capable Member.
  - Fasteners have an assumed shear / bearing design resistance of 0.43 kN or greater for the liner / internal face (at ambient temperature).
    - Liner / internal face gauge and grade assumed as nominally 0.32 mm and S220GD respectively.
    - Please contact the fastener supplier for confirmation of values.
  - Fasteners have an assumed shear / bearing design resistance of 0.9 kN or greater for the external face (at ambient temperature).
    - External face gauge and grade assumed as nominally 0.465 mm and S280GD respectively.
    - Please contact the fastener supplier for confirmation of values.
  - Fastener must engage both the internal and external face of the cladding.
- The quantity of fasteners from each panel to vertical member should be the greater of the requirements from:
  - a fire scenario (see table), and
  - during normal use / ambient scenario, i.e. due to wind, thermal (non-fire) and dead loads.For further guidance on the fastener quantities during the normal use / ambient scenario, please contact Kingspan Technical Services.
- For panel ends and end laps, a minimum of 3 fasteners are required.
- No additional weight, e.g. from signage / façades, has been included to the weight of the cladding.
- Protected columns are assumed to be limited to a critical temperature of **600°C** for the given period of fire resistance.
  - Each column must provide a load path for the loads associated with its tributary area of wall.
- For cases falling outside the specifications above, please contact Kingspan Technical Services.

# INSULATED PANEL FASTENER TABLES

## HORIZONTALLY-LAID INSULATED PANELS

### QuadCore® Architectural Wall Panels - unprotected vertical cold-rolled rails

Number of panel fasteners required to attach to the unprotected vertical rails.

| Panel Span Between Vertical Capable Members (m) | Panel Thickness (mm) |    |    |    |     |     |     |     |
|-------------------------------------------------|----------------------|----|----|----|-----|-----|-----|-----|
|                                                 | 70                   | 74 | 80 | 90 | 100 | 120 | 140 | 150 |
| 1.0                                             | 1                    | 1  | 1  | 1  | 1   | 1   | 1   | 1   |
| 1.2                                             | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 1.4                                             | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 1.6                                             | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 1.8                                             | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 2.0                                             | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 2.2                                             | 3                    | 3  | 3  | 3  | 3   | 3   | 3   | 3   |
| 2.4                                             | 3                    | 3  | 3  | 3  | 3   | 3   | 3   | 3   |
| 2.6                                             | 3                    | 3  | 3  | 3  | 3   | 3   | 3   | 3   |
| 2.8                                             | 3                    | 3  | 3  | 3  | 3   | 3   | 3   | 3   |
| 3.0                                             | 3                    | 3  | 3  | 3  | 3   | 3   | 3   | 3   |

Notes / assumptions:

- Assumed 60 minutes period of fire resistance.
- Through-fix carbon / stainless steel fasteners to be used for connections from panel to protected Capable Member.
  - Fasteners have an assumed shear / bearing design resistance of 0.75 kN or greater for the liner / internal face (at ambient temperature).
    - Liner / internal face gauge and grade assumed as nominally 0.465 mm and S220GD respectively.
    - Please contact the fastener supplier for confirmation of values.
  - Fasteners have an assumed shear / bearing design resistance of 0.9 kN or greater for the external face (at ambient temperature).
    - External face gauge and grade assumed as nominally 0.465 mm and S280GD respectively.
    - Please contact the fastener supplier for confirmation of values.
  - Fastener must engage both the internal and external face of the cladding.
- The quantity of fasteners from each panel to vertical cladding rail should be the greater of the requirements from:
  - a fire scenario (see table), and
  - during normal use / ambient scenario, i.e. due to wind, thermal (non-fire) and dead loads.For further guidance on the fastener quantities during the normal use / ambient scenario, please contact Kingspan Technical Services.
- No additional weight, e.g. from signage / façades, has been included to the weight of the cladding.
- Vertical cladding rails are assumed to be unprotected and reach a temperature no greater than **945°C** for the given period of fire resistance.
  - Each vertical cladding rail must provide a load path for the loads associated with its tributary area of wall.
- For cases falling outside the specifications above, please contact Kingspan Technical Services.

### QuadCore® Architectural Wall Panels - fire protected columns

Number of panel fasteners required to attach to the fire protected columns.

| Panel Span Between Vertical Capable Members (m) | Panel Thickness (mm) |    |    |    |     |     |     |     |
|-------------------------------------------------|----------------------|----|----|----|-----|-----|-----|-----|
|                                                 | 70                   | 74 | 80 | 90 | 100 | 120 | 140 | 150 |
| 5.0                                             | 1                    | 1  | 1  | 1  | 1   | 1   | 2   | 2   |
| 5.25                                            | 1                    | 1  | 1  | 1  | 1   | 2   | 2   | 2   |
| 5.5                                             | 1                    | 1  | 1  | 1  | 2   | 2   | 2   | 2   |
| 5.75                                            | 1                    | 1  | 1  | 2  | 2   | 2   | 2   | 2   |
| 6.0                                             | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 6.25                                            | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 6.5                                             | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 6.75                                            | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 7.0                                             | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 7.25                                            | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 7.5                                             | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |

Notes / assumptions:

- Assumed 60 minutes period of fire resistance.
- Through-fix carbon / stainless steel fasteners to be used for connections from panel to protected Capable Member.
  - Fasteners have an assumed shear / bearing design resistance of 0.75 kN or greater for the liner / internal face (at ambient temperature).
    - Liner / internal face gauge and grade assumed as nominally 0.465 mm and S220GD respectively.
    - Please contact the fastener supplier for confirmation of values.
  - Fasteners have an assumed shear / bearing design resistance of 0.9 kN or greater for the external face (at ambient temperature).
    - External face gauge and grade assumed as nominally 0.465 mm and S280GD respectively.
    - Please contact the fastener supplier for confirmation of values.
  - Fastener must engage both the internal and external face of the cladding.
- The quantity of fasteners from each panel to vertical member should be the greater of the requirements from:
  - a fire scenario (see table), and
  - during normal use / ambient scenario, i.e. due to wind, thermal (non-fire) and dead loads.For further guidance on the fastener quantities during the normal use / ambient scenario, please contact Kingspan Technical Services.
- No additional weight, e.g. from signage / façades, has been included to the weight of the cladding.
- Protected columns are assumed to be limited to a critical temperature of **600°C** for the given period of fire resistance.
  - Each column must provide a load path for the loads associated with its tributary area of wall.
- For cases falling outside the specifications above, please contact Kingspan Technical Services.

# INSULATED PANEL FASTENER TABLES

## HORIZONTALLY-LAID INSULATED PANELS

### QuadCore® AWP-S Wall Panels - unprotected vertical cold-rolled rails

Number of panel fasteners required to attach to the unprotected vertical rails.

| Panel Span Between Vertical Capable Members (m) | Panel Thickness (mm) |
|-------------------------------------------------|----------------------|
|                                                 | 150                  |
| 1.0                                             | 1                    |
| 1.2                                             | 2                    |
| 1.4                                             | 2                    |
| 1.6                                             | 2                    |
| 1.8                                             | 2                    |
| 2.0                                             | 2                    |
| 2.2                                             | 3                    |
| 2.4                                             | 3                    |
| 2.6                                             | 3                    |
| 2.8                                             | 3                    |
| 3.0                                             | 3                    |

Notes / assumptions:

- Assumed 60 minutes period of fire resistance.
- Through-fix carbon / stainless steel fasteners to be used for connections from panel to protected Capable Member.
  - Fasteners have an assumed shear / bearing design resistance of 0.75 kN or greater for the liner / internal face (at ambient temperature).
    - Liner / internal face gauge and grade assumed as nominally 0.465 mm and S220GD respectively.
    - Please contact the fastener supplier for confirmation of values.
  - Fasteners have an assumed shear / bearing design resistance of 1.31 kN or greater for the external face (at ambient temperature).
    - External face gauge and grade assumed as nominally 0.595 mm and S280GD respectively.
    - Please contact the fastener supplier for confirmation of values.
  - Fastener must engage both the internal and external face of the cladding.
- The quantity of fasteners from each panel to vertical cladding rail should be the greater of the requirements from:
  - a fire scenario (see table), and
  - during normal use / ambient scenario, i.e. due to wind, thermal (non-fire) and dead loads.For further guidance on the fastener quantities during the normal use / ambient scenario, please contact Kingspan Technical Services.
- No additional weight, e.g. from signage / façades, has been included to the weight of the cladding.
- Vertical cladding rails are assumed to be unprotected and reach a temperature no greater than **945°C** for the given period of fire resistance.
  - Each vertical cladding rail must provide a load path for the loads associated with its tributary area of wall.
- For cases falling outside the specifications above, please contact Kingspan Technical Services.

### QuadCore® AWP-S Wall Panels - fire protected columns

Number of panel fasteners required to attach to the fire protected columns.

| Panel Span Between Vertical Capable Members (m) | Panel Thickness (mm) |
|-------------------------------------------------|----------------------|
|                                                 | 150                  |
| 5.0                                             | 1                    |
| 5.25                                            | 1                    |
| 5.5                                             | 1                    |
| 5.75                                            | 1                    |
| 6.0                                             | 2                    |
| 6.25                                            | 2                    |
| 6.5                                             | 2                    |
| 6.75                                            | 2                    |
| 7.0                                             | 2                    |
| 7.25                                            | 2                    |
| 7.5                                             | 2                    |

Notes / assumptions:

- Assumed 60 minutes period of fire resistance.
- Through-fix carbon / stainless steel fasteners to be used for connections from panel to protected Capable Member.
  - Fasteners have an assumed shear / bearing design resistance of 0.75 kN or greater for the liner / internal face (at ambient temperature).
    - Liner / internal face gauge and grade assumed as nominally 0.465 mm and S220GD respectively.
    - Please contact the fastener supplier for confirmation of values.
  - Fasteners have an assumed shear / bearing design resistance of 1.31 kN or greater for the external face (at ambient temperature).
    - External face gauge and grade assumed as nominally 0.595 mm and S280GD respectively.
    - Please contact the fastener supplier for confirmation of values.
  - Fastener must engage both the internal and external face of the cladding.
- The quantity of fasteners from each panel to vertical member should be the greater of the requirements from:
  - a fire scenario (see table), and
  - during normal use / ambient scenario, i.e. due to wind, thermal (non-fire) and dead loads.For further guidance on the fastener quantities during the normal use / ambient scenario, please contact Kingspan Technical Services.
- No additional weight, e.g. from signage / façades, has been included to the weight of the cladding.
- Protected columns are assumed to be limited to a critical temperature of **600°C** for the given period of fire resistance.
  - Each column must provide a load path for the loads associated with its tributary area of wall.
- For cases falling outside the specifications above, please contact Kingspan Technical Services.

# INSULATED PANEL FASTENER TABLES

## HORIZONTALLY-LAID INSULATED PANELS

### QuadCore® Evolution Wall Panels - unprotected vertical cold-rolled rails

Number of panel fasteners required to attach to the unprotected vertical rails.

| Panel Span Between Vertical Capable Members (m) | Panel Thickness (mm) |    |    |    |     |     |     |     |
|-------------------------------------------------|----------------------|----|----|----|-----|-----|-----|-----|
|                                                 | 70                   | 74 | 80 | 90 | 100 | 120 | 140 | 150 |
| 1.0                                             | 1                    | 1  | 1  | 1  | 1   | 1   | 1   | 1   |
| 1.2                                             | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 1.4                                             | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 1.6                                             | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 1.8                                             | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 2.0                                             | 2                    | 2  | 2  | 2  | 2   | 2   | 2   | 2   |
| 2.2                                             | 3                    | 3  | 3  | 3  | 3   | 3   | 3   | 3   |
| 2.4                                             | 3                    | 3  | 3  | 3  | 3   | 3   | 3   | 3   |
| 2.6                                             | 3                    | 3  | 3  | 3  | 3   | 3   | 3   | 3   |
| 2.8                                             | 3                    | 3  | 3  | 3  | 3   | 3   | 3   | 3   |
| 3.0                                             | 3                    | 3  | 3  | 3  | 3   | 3   | 3   | 3   |

Notes / assumptions:

- Assumed 60 minutes period of fire resistance.
- Through-fix carbon / stainless steel fasteners to be used for connections from panel to protected Capable Member.
  - Fasteners have an assumed shear / bearing design resistance of 0.75 kN or greater for the liner / internal face (at ambient temperature).
    - Liner / internal face gauge and grade assumed as nominally 0.465 mm and S220GD respectively.
    - Please contact the fastener supplier for confirmation of values.
  - Fasteners have an assumed shear / bearing design resistance of 1.31 kN or greater for the external face (at ambient temperature).
    - External face gauge and grade assumed as nominally 0.595 mm and S280GD respectively.
    - Please contact the fastener supplier for confirmation of values.
  - Fastener must engage both the internal and external face of the cladding.
- The quantity of fasteners from each panel to vertical cladding rail should be the greater of the requirements from:
  - a fire scenario (see table), and
  - during normal use / ambient scenario, i.e. due to wind, thermal (non-fire) and dead loads.For further guidance on the fastener quantities during the normal use / ambient scenario, please contact Kingspan Technical Services.
- No additional weight, e.g. from signage / façades, has been included to the weight of the cladding.
- Vertical cladding rails are assumed to be unprotected and reach a temperature no greater than **945°C** for the given period of fire resistance.
  - Each vertical cladding rail must provide a load path for the loads associated with its tributary area of wall.
- For cases falling outside the specifications above, please contact Kingspan Technical Services.

### QuadCore® Evolution Wall Panels - fire protected columns

Number of panel fasteners required to attach to the fire protected columns.

| Panel Span Between Vertical Capable Members (m) | Panel Thickness (mm) |    |    |    |     |     |     |     |
|-------------------------------------------------|----------------------|----|----|----|-----|-----|-----|-----|
|                                                 | 70                   | 74 | 80 | 90 | 100 | 120 | 140 | 150 |
| 5.0                                             | 1                    | 1  | 1  | 1  | 1   | 1   | 1   | 1   |
| 5.25                                            | 1                    | 1  | 1  | 1  | 1   | 1   | 1   | 1   |
| 5.5                                             | 1                    | 1  | 1  | 1  | 1   | 1   | 1   | 1   |
| 5.75                                            | 1                    | 1  | 1  | 1  | 1   | 1   | 1   | 1   |
| 6.0                                             | 1                    | 1  | 1  | 1  | 1   | 1   | 1   | 1   |
| 6.25                                            | 1                    | 1  | 1  | 1  | 1   | 1   | 1   | 1   |
| 6.5                                             | 1                    | 1  | 1  | 1  | 1   | 1   | 1   | 1   |
| 6.75                                            | 1                    | 1  | 1  | 1  | 1   | 1   | 1   | 1   |
| 7.0                                             | 1                    | 1  | 1  | 1  | 1   | 1   | 2   | 2   |
| 7.25                                            | 1                    | 1  | 1  | 1  | 1   | 1   | 2   | 2   |
| 7.5                                             | 1                    | 1  | 1  | 1  | 1   | 2   | 2   | 2   |

Notes / assumptions:

- Assumed 60 minutes period of fire resistance.
- Through-fix carbon / stainless steel fasteners to be used for connections from panel to protected Capable Member.
  - Fasteners have an assumed shear / bearing design resistance of 0.75 kN or greater for the liner / internal face (at ambient temperature).
    - Liner / internal face gauge and grade assumed as nominally 0.465 mm and S220GD respectively.
    - Please contact the fastener supplier for confirmation of values.
  - Fasteners have an assumed shear / bearing design resistance of 1.31 kN or greater for the external face (at ambient temperature).
    - External face gauge and grade assumed as nominally 0.595 mm and S280GD respectively.
    - Please contact the fastener supplier for confirmation of values.
  - Fastener must engage both the internal and external face of the cladding.
- The quantity of fasteners from each panel to vertical member should be the greater of the requirements from:
  - a fire scenario (see table), and
  - during normal use / ambient scenario, i.e. due to wind, thermal (non-fire) and dead loads.For further guidance on the fastener quantities during the normal use / ambient scenario, please contact Kingspan Technical Services.
- No additional weight, e.g. from signage / façades, has been included to the weight of the cladding.
- Protected columns are assumed to be limited to a critical temperature of **600°C** for the given period of fire resistance.
  - Each column must provide a load path for the loads associated with its tributary area of wall.
- For cases falling outside the specifications above, please contact Kingspan Technical Services.

# INSULATED PANEL FASTENER TABLES

## HORIZONTALLY-LAID INSULATED PANELS

### QuadCore® Coldstore Wall Panels - unprotected vertical cold-rolled rails

Number of panel fasteners required to attach to the unprotected vertical rails.

| Panel Span Between Vertical Capable Members (m) | Panel Thickness (mm) |     |     |     |     |     |
|-------------------------------------------------|----------------------|-----|-----|-----|-----|-----|
|                                                 | 100                  | 125 | 150 | 175 | 200 | 220 |
| 1.0                                             | 3                    | 3   | 3   | 3   | 3   | 3   |
| 1.2                                             | 3                    | 3   | 3   | 3   | 3   | 3   |
| 1.4                                             | 3                    | 3   | 3   | 3   | 3   | 3   |
| 1.6                                             | 3                    | 3   | 3   | 3   | 3   | 3   |
| 1.8                                             | 3                    | 3   | 3   | 3   | 3   | 3   |
| 2.0                                             | 3                    | 3   | 3   | 3   | 3   | 3   |
| 2.2                                             | 3                    | 3   | 3   | 3   | 3   | 3   |
| 2.4                                             | 3                    | 3   | 3   | 3   | 3   | 3   |
| 2.6                                             | 3                    | 3   | 3   | 3   | 3   | 3   |
| 2.8                                             | 3                    | 3   | 3   | 3   | 3   | 3   |
| 3.0                                             | 4                    | 4   | 4   | 4   | 4   | 4   |

Notes / assumptions:

- Assumed 60 minutes period of fire resistance.
- Through-fix carbon / stainless steel fasteners to be used for connections from panel to protected Capable Member.
  - Fasteners have an assumed shear / bearing design resistance of 0.75 kN or greater for the liner / internal face (at ambient temperature).
    - Liner / internal face gauge and grade assumed as nominally 0.465 mm and S220GD respectively.
    - Please contact the fastener supplier for confirmation of values.
  - Fasteners have an assumed shear / bearing design resistance of 0.75 kN or greater for the external face (at ambient temperature).
    - External face gauge and grade assumed as nominally 0.465 mm and S220GD respectively.
    - Please contact the fastener supplier for confirmation of values.
  - Fastener must engage both the internal and external face of the cladding.
  - The quantity of fasteners from each panel to vertical cladding rail should be the greater of the requirements from:
    - a fire scenario (see table), and
    - during normal use / ambient scenario, i.e. due to wind, thermal (non-fire) and dead loads.For further guidance on the fastener quantities during the normal use / ambient scenario, please contact Kingspan Technical Services.
- No additional weight, e.g. from signage / façades, has been included to the weight of the cladding.
- Vertical cladding rails are assumed to be unprotected and reach a temperature no greater than **945°C** for the given period of fire resistance.
  - Each vertical cladding rail must provide a load path for the loads associated with its tributary area of wall.
- For cases falling outside the specifications above, please contact Kingspan Technical Services.

### QuadCore® Coldstore Wall Panels - fire protected columns

Number of panel fasteners required to attach to the fire protected columns.

| Panel Span Between Vertical Capable Members (m) | Panel Thickness (mm) |     |     |     |     |     |
|-------------------------------------------------|----------------------|-----|-----|-----|-----|-----|
|                                                 | 100                  | 125 | 150 | 175 | 200 | 220 |
| 5.0                                             | 3                    | 3   | 3   | 3   | 3   | 3   |
| 5.25                                            | 3                    | 3   | 3   | 3   | 3   | 3   |
| 5.5                                             | 3                    | 3   | 3   | 3   | 3   | 3   |
| 5.75                                            | 3                    | 3   | 3   | 3   | 3   | 3   |
| 6.0                                             | 3                    | 3   | 3   | 3   | 3   | 3   |
| 6.25                                            | 3                    | 3   | 3   | 3   | 3   | 3   |
| 6.5                                             | 3                    | 3   | 3   | 3   | 3   | 3   |
| 6.75                                            | 3                    | 3   | 3   | 3   | 3   | 3   |
| 7.0                                             | 3                    | 3   | 3   | 3   | 3   | 3   |
| 7.25                                            | 3                    | 3   | 3   | 3   | 3   | 3   |
| 7.5                                             | 3                    | 3   | 3   | 3   | 3   | 3   |

Notes / assumptions:

- Assumed 60 minutes period of fire resistance.
- Through-fix carbon / stainless steel fasteners to be used for connections from panel to protected Capable Member.
  - Fasteners have an assumed shear / bearing design resistance of 0.75 kN or greater for the liner / internal face (at ambient temperature).
    - Liner / internal face gauge and grade assumed as nominally 0.465 mm and S220GD respectively.
    - Please contact the fastener supplier for confirmation of values.
  - Fasteners have an assumed shear / bearing design resistance of 0.75 kN or greater for the external face (at ambient temperature).
    - External face gauge and grade assumed as nominally 0.465 mm and S220GD respectively.
    - Please contact the fastener supplier for confirmation of values.
  - Fastener must engage both the internal and external face of the cladding.
  - The quantity of fasteners from each panel to vertical member should be the greater of the requirements from:
    - a fire scenario (see table), and
    - during normal use / ambient scenario, i.e. due to wind, thermal (non-fire) and dead loads.For further guidance on the fastener quantities during the normal use / ambient scenario, please contact Kingspan Technical Services.
- No additional weight, e.g. from signage / façades, has been included to the weight of the cladding.
- Protected columns are assumed to be limited to a critical temperature of **600°C** for the given period of fire resistance.
  - Each column must provide a load path for the loads associated with its tributary area of wall.
- For cases falling outside the specifications above, please contact Kingspan Technical Services.

# DESIGN TABLES

## HORIZONTALLY-LAID INSULATED PANEL SUPPORT

- Discontinuous Vertical Kingspan  
Multichannel: Cladding Weight 12 kg/m<sup>2</sup> 50
- Discontinuous Vertical Kingspan  
Multichannel: Cladding Weight 30 kg/m<sup>2</sup> 53

# DESIGN TABLES

## HORIZONTALLY-LAID INSULATED PANEL SUPPORT

Design in accordance with BS EN 1993-1-3: 2006 and BS EN 1993-1-2: 2005.  
**Cladding weight: 12 kg/m².**

Discontinuous Vertical Kingspan Multichannel  
Size: 205 mm. Gauge: 1.5 mm.  
Cladding Weight: 12 kg/m²

| Wall Height Hung<br>from Capable<br>Member (m) | Horizontal Panel Support Centres (m) |     |     |     |     |
|------------------------------------------------|--------------------------------------|-----|-----|-----|-----|
|                                                | 1.0                                  | 1.5 | 2.0 | 2.5 | 3.0 |
| 3                                              | PC                                   | PC  | PC  | PC  | PC  |
| 4                                              | PC                                   | PC  | PC  | PC  | PC  |
| 5                                              | PC                                   | PC  | PC  | 2PC | 2PC |
| 6                                              | PC                                   | PC  | 2PC | 2PC | 2PC |
| 7                                              | PC                                   | PC  | 2PC | 2PC | 2PC |
| 8                                              | PC                                   | 2PC | 2PC | 2PC | 2PC |
| 9                                              | PC                                   | 2PC | 2PC | 2PC | *   |
| 10                                             | PC                                   | 2PC | 2PC | *   | *   |
| 11                                             | 2PC                                  | 2PC | 2PC | *   | *   |
| 12                                             | 2PC                                  | 2PC | *   | *   | *   |
| 13                                             | 2PC                                  | 2PC | *   | *   | *   |
| 14                                             | 2PC                                  | 2PC | *   | *   | *   |
| 15                                             | 2PC                                  | *   | *   | *   | *   |

Discontinuous Vertical Kingspan Multichannel  
Size: 235 mm. Gauge: 1.5 mm.  
Cladding Weight: 12 kg/m²

| Wall Height Hung<br>from Capable<br>Member (m) | Horizontal Panel Support Centres (m) |     |     |     |     |
|------------------------------------------------|--------------------------------------|-----|-----|-----|-----|
|                                                | 1.0                                  | 1.5 | 2.0 | 2.5 | 3.0 |
| 3                                              | PC                                   | PC  | PC  | PC  | PC  |
| 4                                              | PC                                   | PC  | PC  | PC  | PC  |
| 5                                              | PC                                   | PC  | PC  | 2PC | 2PC |
| 6                                              | PC                                   | PC  | 2PC | 2PC | 2PC |
| 7                                              | PC                                   | PC  | 2PC | 2PC | 2PC |
| 8                                              | PC                                   | 2PC | 2PC | 2PC | 2PC |
| 9                                              | PC                                   | 2PC | 2PC | 2PC | *   |
| 10                                             | PC                                   | 2PC | 2PC | *   | *   |
| 11                                             | 2PC                                  | 2PC | 2PC | *   | *   |
| 12                                             | 2PC                                  | 2PC | *   | *   | *   |
| 13                                             | 2PC                                  | 2PC | *   | *   | *   |
| 14                                             | 2PC                                  | 2PC | *   | *   | *   |
| 15                                             | 2PC                                  | *   | *   | *   | *   |

Discontinuous Vertical Kingspan Multichannel  
Size: 265 mm. Gauge: 1.5 mm.  
Cladding Weight: 12 kg/m²

| Wall Height Hung<br>from Capable<br>Member (m) | Horizontal Panel Support Centres (m) |     |     |     |     |
|------------------------------------------------|--------------------------------------|-----|-----|-----|-----|
|                                                | 1.0                                  | 1.5 | 2.0 | 2.5 | 3.0 |
| 3                                              | PC                                   | PC  | PC  | PC  | PC  |
| 4                                              | PC                                   | PC  | PC  | PC  | PC  |
| 5                                              | PC                                   | PC  | PC  | 2PC | 2PC |
| 6                                              | PC                                   | PC  | 2PC | 2PC | 2PC |
| 7                                              | PC                                   | PC  | 2PC | 2PC | 2PC |
| 8                                              | PC                                   | 2PC | 2PC | 2PC | *   |
| 9                                              | PC                                   | 2PC | 2PC | 2PC | *   |
| 10                                             | 2PC                                  | 2PC | 2PC | *   | *   |
| 11                                             | 2PC                                  | 2PC | 2PC | *   | *   |
| 12                                             | 2PC                                  | 2PC | *   | *   | *   |
| 13                                             | 2PC                                  | 2PC | *   | *   | *   |
| 14                                             | 2PC                                  | *   | *   | *   | *   |
| 15                                             | 2PC                                  | *   | *   | *   | *   |

**Notes:**  
1 Assumed 60 minutes period of fire resistance.  
2 Assumed average horizontal rail centres = 2 metres.  
3 Connection of cleat to horizontal Capable Member to be designed by others.  
4 The design of the system should be based on the limiting requirement of:  
a) the fire scenario (see table), and  
b) the normal use / ambient scenario, i.e., due to wind, thermal (non-fire) and dead loads.  
For further guidance during the normal use / ambient scenario, please contact Kingspan Technical Services.  
5 For guidance where an asterisk (\*) is present, or for cases falling outside the specifications above, please contact Kingspan Technical Services.

# DESIGN TABLES

## HORIZONTALLY-LAID INSULATED PANEL SUPPORT

Design in accordance with BS EN 1993-1-3: 2006 and BS EN 1993-1-2: 2005.  
**Cladding weight: 12 kg/m².**

Discontinuous Vertical Kingspan Multichannel  
Size: 205 mm. Gauge: 2.0 mm.  
Cladding Weight: 12 kg/m²

| Wall Height Hung from Capable Member (m) | Horizontal Panel Support Centres (m) |     |     |     |     |
|------------------------------------------|--------------------------------------|-----|-----|-----|-----|
|                                          | 1.0                                  | 1.5 | 2.0 | 2.5 | 3.0 |
| 3                                        | PC                                   | PC  | PC  | PC  | PC  |
| 4                                        | PC                                   | PC  | PC  | PC  | PC  |
| 5                                        | PC                                   | PC  | PC  | 2PC | 2PC |
| 6                                        | PC                                   | PC  | 2PC | 2PC | 2PC |
| 7                                        | PC                                   | PC  | 2PC | 2PC | 2PC |
| 8                                        | PC                                   | 2PC | 2PC | 2PC | 2PC |
| 9                                        | PC                                   | 2PC | 2PC | 2PC | 2PC |
| 10                                       | 2PC                                  | 2PC | 2PC | 2PC | 2PC |
| 11                                       | 2PC                                  | 2PC | 2PC | 2PC | *   |
| 12                                       | 2PC                                  | 2PC | 2PC | 2PC | *   |
| 13                                       | 2PC                                  | 2PC | 2PC | *   | *   |
| 14                                       | 2PC                                  | 2PC | 2PC | *   | *   |
| 15                                       | 2PC                                  | 2PC | *   | *   | *   |

Discontinuous Vertical Kingspan Multichannel  
Size: 235 mm. Gauge: 2.0 mm.  
Cladding Weight: 12 kg/m²

| Wall Height Hung from Capable Member (m) | Horizontal Panel Support Centres (m) |     |     |     |     |
|------------------------------------------|--------------------------------------|-----|-----|-----|-----|
|                                          | 1.0                                  | 1.5 | 2.0 | 2.5 | 3.0 |
| 3                                        | PC                                   | PC  | PC  | PC  | PC  |
| 4                                        | PC                                   | PC  | PC  | PC  | PC  |
| 5                                        | PC                                   | PC  | PC  | 2PC | 2PC |
| 6                                        | PC                                   | PC  | 2PC | 2PC | 2PC |
| 7                                        | PC                                   | 2PC | 2PC | 2PC | 2PC |
| 8                                        | PC                                   | 2PC | 2PC | 2PC | 2PC |
| 9                                        | PC                                   | 2PC | 2PC | 2PC | 2PC |
| 10                                       | 2PC                                  | 2PC | 2PC | 2PC | 2PC |
| 11                                       | 2PC                                  | 2PC | 2PC | 2PC | *   |
| 12                                       | 2PC                                  | 2PC | 2PC | 2PC | *   |
| 13                                       | 2PC                                  | 2PC | 2PC | *   | *   |
| 14                                       | 2PC                                  | 2PC | 2PC | *   | *   |
| 15                                       | 2PC                                  | 2PC | *   | *   | *   |

Discontinuous Vertical Kingspan Multichannel  
Size: 265 mm. Gauge: 2.0 mm.  
Cladding Weight: 12 kg/m²

| Wall Height Hung from Capable Member (m) | Horizontal Panel Support Centres (m) |     |     |     |     |
|------------------------------------------|--------------------------------------|-----|-----|-----|-----|
|                                          | 1.0                                  | 1.5 | 2.0 | 2.5 | 3.0 |
| 3                                        | PC                                   | PC  | PC  | PC  | PC  |
| 4                                        | PC                                   | PC  | PC  | PC  | 2PC |
| 5                                        | PC                                   | PC  | PC  | 2PC | 2PC |
| 6                                        | PC                                   | PC  | 2PC | 2PC | 2PC |
| 7                                        | PC                                   | 2PC | 2PC | 2PC | 2PC |
| 8                                        | PC                                   | 2PC | 2PC | 2PC | 2PC |
| 9                                        | 2PC                                  | 2PC | 2PC | 2PC | 2PC |
| 10                                       | 2PC                                  | 2PC | 2PC | 2PC | 2PC |
| 11                                       | 2PC                                  | 2PC | 2PC | 2PC | *   |
| 12                                       | 2PC                                  | 2PC | 2PC | *   | *   |
| 13                                       | 2PC                                  | 2PC | 2PC | *   | *   |
| 14                                       | 2PC                                  | 2PC | 2PC | *   | *   |
| 15                                       | 2PC                                  | 2PC | *   | *   | *   |

- Notes:**
- 1 Assumed 60 minutes period of fire resistance.
  - 2 Assumed average horizontal rail centres = 2 metres.
  - 3 Connection of cleat to horizontal Capable Member to be designed by others.
  - 4 The design of the system should be based on the limiting requirement of:
    - a) the fire scenario (see table), and
    - b) the normal use / ambient scenario, i.e., due to wind, thermal (non-fire) and dead loads.For further guidance during the normal use / ambient scenario, please contact Kingspan Technical Services.
  - 5 For guidance where an asterisk (\*) is present, or for cases falling outside the specifications above, please contact Kingspan Technical Services.

# DESIGN TABLES

## HORIZONTALLY-LAID INSULATED PANEL SUPPORT

Design in accordance with BS EN 1993-1-3: 2006 and BS EN 1993-1-2: 2005.  
**Cladding weight: 12 kg/m².**

Discontinuous Vertical Kingspan Multichannel  
Size: 205 mm. Gauge: 2.5 mm.  
Cladding Weight: 12 kg/m²

| Wall Height Hung<br>from Capable<br>Member (m) | Horizontal Panel Support Centres (m) |     |     |     |     |
|------------------------------------------------|--------------------------------------|-----|-----|-----|-----|
|                                                | 1.0                                  | 1.5 | 2.0 | 2.5 | 3.0 |
| 3                                              | PC                                   | PC  | PC  | PC  | PC  |
| 4                                              | PC                                   | PC  | PC  | PC  | 2PC |
| 5                                              | PC                                   | PC  | PC  | 2PC | 2PC |
| 6                                              | PC                                   | PC  | 2PC | 2PC | 2PC |
| 7                                              | PC                                   | 2PC | 2PC | 2PC | 2PC |
| 8                                              | PC                                   | 2PC | 2PC | 2PC | 2PC |
| 9                                              | 2PC                                  | 2PC | 2PC | 2PC | 2PC |
| 10                                             | 2PC                                  | 2PC | 2PC | 2PC | 2PC |
| 11                                             | 2PC                                  | 2PC | 2PC | 2PC | 2PC |
| 12                                             | 2PC                                  | 2PC | 2PC | 2PC | *   |
| 13                                             | 2PC                                  | 2PC | 2PC | 2PC | *   |
| 14                                             | 2PC                                  | 2PC | 2PC | *   | *   |
| 15                                             | 2PC                                  | 2PC | 2PC | *   | *   |

Discontinuous Vertical Kingspan Multichannel  
Size: 235 mm. Gauge: 2.5 mm.  
Cladding Weight: 12 kg/m²

| Wall Height Hung<br>from Capable<br>Member (m) | Horizontal Panel Support Centres (m) |     |     |     |     |
|------------------------------------------------|--------------------------------------|-----|-----|-----|-----|
|                                                | 1.0                                  | 1.5 | 2.0 | 2.5 | 3.0 |
| 3                                              | PC                                   | PC  | PC  | PC  | PC  |
| 4                                              | PC                                   | PC  | PC  | PC  | 2PC |
| 5                                              | PC                                   | PC  | PC  | 2PC | 2PC |
| 6                                              | PC                                   | PC  | 2PC | 2PC | 2PC |
| 7                                              | PC                                   | 2PC | 2PC | 2PC | 2PC |
| 8                                              | PC                                   | 2PC | 2PC | 2PC | 2PC |
| 9                                              | 2PC                                  | 2PC | 2PC | 2PC | 2PC |
| 10                                             | 2PC                                  | 2PC | 2PC | 2PC | 2PC |
| 11                                             | 2PC                                  | 2PC | 2PC | 2PC | 2PC |
| 12                                             | 2PC                                  | 2PC | 2PC | 2PC | *   |
| 13                                             | 2PC                                  | 2PC | 2PC | *   | *   |
| 14                                             | 2PC                                  | 2PC | 2PC | *   | *   |
| 15                                             | 2PC                                  | 2PC | 2PC | *   | *   |

Discontinuous Vertical Kingspan Multichannel  
Size: 265 mm. Gauge: 2.5 mm.  
Cladding Weight: 12 kg/m²

| Wall Height Hung<br>from Capable<br>Member (m) | Horizontal Panel Support Centres (m) |     |     |     |     |
|------------------------------------------------|--------------------------------------|-----|-----|-----|-----|
|                                                | 1.0                                  | 1.5 | 2.0 | 2.5 | 3.0 |
| 3                                              | PC                                   | PC  | PC  | PC  | PC  |
| 4                                              | PC                                   | PC  | PC  | PC  | 2PC |
| 5                                              | PC                                   | PC  | PC  | 2PC | 2PC |
| 6                                              | PC                                   | PC  | 2PC | 2PC | 2PC |
| 7                                              | PC                                   | 2PC | 2PC | 2PC | 2PC |
| 8                                              | PC                                   | 2PC | 2PC | 2PC | 2PC |
| 9                                              | 2PC                                  | 2PC | 2PC | 2PC | 2PC |
| 10                                             | 2PC                                  | 2PC | 2PC | 2PC | 2PC |
| 11                                             | 2PC                                  | 2PC | 2PC | 2PC | 2PC |
| 12                                             | 2PC                                  | 2PC | 2PC | 2PC | *   |
| 13                                             | 2PC                                  | 2PC | 2PC | *   | *   |
| 14                                             | 2PC                                  | 2PC | 2PC | *   | *   |
| 15                                             | 2PC                                  | 2PC | *   | *   | *   |

- Notes:**
- 1 Assumed 60 minutes period of fire resistance.
  - 2 Assumed average horizontal rail centres = 2 metres.
  - 3 Connection of cleat to horizontal Capable Member to be designed by others.
  - 4 The design of the system should be based on the limiting requirement of:
    - a) the fire scenario (see table), and
    - b) the normal use / ambient scenario, i.e., due to wind, thermal (non-fire) and dead loads.For further guidance during the normal use / ambient scenario, please contact Kingspan Technical Services.
  - 5 For guidance where an asterisk (\*) is present, or for cases falling outside the specifications above, please contact Kingspan Technical Services.

# DESIGN TABLES

## HORIZONTALLY-LAID INSULATED PANEL SUPPORT

Design in accordance with BS EN 1993-1-3: 2006 and BS EN 1993-1-2: 2005.  
**Cladding weight: 30 kg/m².**

Discontinuous Vertical Kingspan Multichannel  
Size: 205 mm. Gauge: 1.5 mm.  
Cladding Weight: 30 kg/m²

| Wall Height Hung from Capable Member (m) | Horizontal Panel Support Centres (m) |     |     |     |     |
|------------------------------------------|--------------------------------------|-----|-----|-----|-----|
|                                          | 1.0                                  | 1.5 | 2.0 | 2.5 | 3.0 |
| 3                                        | PC                                   | PC  | 2PC | 2PC | 2PC |
| 4                                        | PC                                   | 2PC | 2PC | 2PC | *   |
| 5                                        | 2PC                                  | 2PC | 2PC | *   | *   |
| 6                                        | 2PC                                  | 2PC | *   | *   | *   |
| 7                                        | 2PC                                  | *   | *   | *   | *   |
| 8                                        | 2PC                                  | *   | *   | *   | –   |
| 9                                        | 2PC                                  | *   | *   | *   | –   |
| 10                                       | *                                    | *   | *   | –   | –   |
| 11                                       | *                                    | *   | *   | –   | –   |
| 12                                       | *                                    | *   | –   | –   | –   |
| 13                                       | *                                    | *   | –   | –   | –   |
| 14                                       | *                                    | *   | –   | –   | –   |
| 15                                       | *                                    | –   | –   | –   | –   |

Discontinuous Vertical Kingspan Multichannel  
Size: 235 mm. Gauge: 1.5 mm.  
Cladding Weight: 30 kg/m²

| Wall Height Hung from Capable Member (m) | Horizontal Panel Support Centres (m) |     |     |     |     |
|------------------------------------------|--------------------------------------|-----|-----|-----|-----|
|                                          | 1.0                                  | 1.5 | 2.0 | 2.5 | 3.0 |
| 3                                        | PC                                   | PC  | 2PC | 2PC | 2PC |
| 4                                        | PC                                   | 2PC | 2PC | 2PC | *   |
| 5                                        | 2PC                                  | 2PC | 2PC | *   | *   |
| 6                                        | 2PC                                  | 2PC | *   | *   | *   |
| 7                                        | 2PC                                  | *   | *   | *   | *   |
| 8                                        | 2PC                                  | *   | *   | *   | –   |
| 9                                        | 2PC                                  | *   | *   | *   | –   |
| 10                                       | *                                    | *   | *   | –   | –   |
| 11                                       | *                                    | *   | *   | –   | –   |
| 12                                       | *                                    | *   | –   | –   | –   |
| 13                                       | *                                    | *   | –   | –   | –   |
| 14                                       | *                                    | *   | –   | –   | –   |
| 15                                       | *                                    | –   | –   | –   | –   |

Discontinuous Vertical Kingspan Multichannel  
Size: 265 mm. Gauge: 1.5 mm.  
Cladding Weight: 30 kg/m²

| Wall Height Hung from Capable Member (m) | Horizontal Panel Support Centres (m) |     |     |     |     |
|------------------------------------------|--------------------------------------|-----|-----|-----|-----|
|                                          | 1.0                                  | 1.5 | 2.0 | 2.5 | 3.0 |
| 3                                        | PC                                   | PC  | 2PC | 2PC | 2PC |
| 4                                        | PC                                   | 2PC | 2PC | 2PC | *   |
| 5                                        | 2PC                                  | 2PC | 2PC | *   | *   |
| 6                                        | 2PC                                  | 2PC | *   | *   | *   |
| 7                                        | 2PC                                  | *   | *   | *   | *   |
| 8                                        | 2PC                                  | *   | *   | *   | –   |
| 9                                        | 2PC                                  | *   | *   | *   | –   |
| 10                                       | *                                    | *   | *   | –   | –   |
| 11                                       | *                                    | *   | *   | –   | –   |
| 12                                       | *                                    | *   | –   | –   | –   |
| 13                                       | *                                    | *   | –   | –   | –   |
| 14                                       | *                                    | *   | –   | –   | –   |
| 15                                       | *                                    | –   | –   | –   | –   |

**Notes:**  
1 Assumed 60 minutes period of fire resistance.  
2 Assumed average horizontal rail centres = 2 metres.  
3 Connection of cleat to horizontal Capable Member to be designed by others.  
4 The design of the system should be based on the limiting requirement of:  
a) the fire scenario (see table), and  
b) the normal use / ambient scenario, i.e., due to wind, thermal (non-fire) and dead loads.  
For further guidance during the normal use / ambient scenario, please contact Kingspan Technical Services.  
5 For guidance where an asterisk (\*) is present, or for cases falling outside the specifications above, please contact Kingspan Technical Services.

# DESIGN TABLES

## HORIZONTALLY-LAID INSULATED PANEL SUPPORT

Design in accordance with BS EN 1993-1-3: 2006 and BS EN 1993-1-2: 2005.  
**Cladding weight: 30 kg/m².**

Discontinuous Vertical Kingspan Multichannel  
Size: 205 mm. Gauge: 2.0 mm.  
Cladding Weight: 30 kg/m²

| Wall Height Hung<br>from Capable<br>Member (m) | Horizontal Panel Support Centres (m) |     |     |     |     |
|------------------------------------------------|--------------------------------------|-----|-----|-----|-----|
|                                                | 1.0                                  | 1.5 | 2.0 | 2.5 | 3.0 |
| 3                                              | PC                                   | PC  | 2PC | 2PC | 2PC |
| 4                                              | PC                                   | 2PC | 2PC | 2PC | 2PC |
| 5                                              | 2PC                                  | 2PC | 2PC | 2PC | *   |
| 6                                              | 2PC                                  | 2PC | 2PC | *   | *   |
| 7                                              | 2PC                                  | 2PC | *   | *   | *   |
| 8                                              | 2PC                                  | 2PC | *   | *   | *   |
| 9                                              | 2PC                                  | *   | *   | *   | *   |
| 10                                             | 2PC                                  | *   | *   | *   | *   |
| 11                                             | 2PC                                  | *   | *   | *   | –   |
| 12                                             | 2PC                                  | *   | *   | *   | –   |
| 13                                             | *                                    | *   | *   | –   | –   |
| 14                                             | *                                    | *   | *   | –   | –   |
| 15                                             | *                                    | *   | *   | –   | –   |

Discontinuous Vertical Kingspan Multichannel  
Size: 235 mm. Gauge: 2.0 mm.  
Cladding Weight: 30 kg/m²

| Wall Height Hung<br>from Capable<br>Member (m) | Horizontal Panel Support Centres (m) |     |     |     |     |
|------------------------------------------------|--------------------------------------|-----|-----|-----|-----|
|                                                | 1.0                                  | 1.5 | 2.0 | 2.5 | 3.0 |
| 3                                              | PC                                   | PC  | 2PC | 2PC | 2PC |
| 4                                              | PC                                   | 2PC | 2PC | 2PC | 2PC |
| 5                                              | 2PC                                  | 2PC | 2PC | 2PC | *   |
| 6                                              | 2PC                                  | 2PC | 2PC | *   | *   |
| 7                                              | 2PC                                  | 2PC | *   | *   | *   |
| 8                                              | 2PC                                  | 2PC | *   | *   | *   |
| 9                                              | 2PC                                  | *   | *   | *   | *   |
| 10                                             | 2PC                                  | *   | *   | *   | *   |
| 11                                             | 2PC                                  | *   | *   | *   | –   |
| 12                                             | 2PC                                  | *   | *   | *   | –   |
| 13                                             | *                                    | *   | *   | –   | –   |
| 14                                             | *                                    | *   | *   | –   | –   |
| 15                                             | *                                    | *   | –   | –   | –   |

Discontinuous Vertical Kingspan Multichannel  
Size: 265 mm. Gauge: 2.0 mm.  
Cladding Weight: 30 kg/m²

| Wall Height Hung<br>from Capable<br>Member (m) | Horizontal Panel Support Centres (m) |     |     |     |     |
|------------------------------------------------|--------------------------------------|-----|-----|-----|-----|
|                                                | 1.0                                  | 1.5 | 2.0 | 2.5 | 3.0 |
| 3                                              | PC                                   | PC  | 2PC | 2PC | 2PC |
| 4                                              | PC                                   | 2PC | 2PC | 2PC | 2PC |
| 5                                              | 2PC                                  | 2PC | 2PC | 2PC | *   |
| 6                                              | 2PC                                  | 2PC | 2PC | *   | *   |
| 7                                              | 2PC                                  | 2PC | *   | *   | *   |
| 8                                              | 2PC                                  | 2PC | *   | *   | *   |
| 9                                              | 2PC                                  | *   | *   | *   | *   |
| 10                                             | 2PC                                  | *   | *   | *   | *   |
| 11                                             | 2PC                                  | *   | *   | *   | –   |
| 12                                             | *                                    | *   | *   | *   | –   |
| 13                                             | *                                    | *   | *   | –   | –   |
| 14                                             | *                                    | *   | *   | –   | –   |
| 15                                             | *                                    | *   | –   | –   | –   |

- Notes:**
- 1 Assumed 60 minutes period of fire resistance.
  - 2 Assumed average horizontal rail centres = 2 metres.
  - 3 Connection of cleat to horizontal Capable Member to be designed by others.
  - 4 The design of the system should be based on the limiting requirement of:
    - a) the fire scenario (see table), and
    - b) the normal use / ambient scenario, i.e., due to wind, thermal (non-fire) and dead loads.For further guidance during the normal use / ambient scenario, please contact Kingspan Technical Services.
  - 5 For guidance where an asterisk (\*) is present, or for cases falling outside the specifications above, please contact Kingspan Technical Services.

# DESIGN TABLES

## HORIZONTALLY-LAID INSULATED PANEL SUPPORT

Design in accordance with BS EN 1993-1-3: 2006 and BS EN 1993-1-2: 2005.  
**Cladding weight: 30 kg/m².**

Discontinuous Vertical Kingspan Multichannel  
Size: 205 mm. Gauge: 2.5 mm.  
Cladding Weight: 30 kg/m²

| Wall Height Hung<br>from Capable<br>Member (m) | Horizontal Panel Support Centres (m) |     |     |     |     |
|------------------------------------------------|--------------------------------------|-----|-----|-----|-----|
|                                                | 1.0                                  | 1.5 | 2.0 | 2.5 | 3.0 |
| 3                                              | PC                                   | PC  | 2PC | 2PC | 2PC |
| 4                                              | PC                                   | 2PC | 2PC | 2PC | 2PC |
| 5                                              | 2PC                                  | 2PC | 2PC | 2PC | 2PC |
| 6                                              | 2PC                                  | 2PC | 2PC | 2PC | *   |
| 7                                              | 2PC                                  | 2PC | 2PC | *   | *   |
| 8                                              | 2PC                                  | 2PC | *   | *   | *   |
| 9                                              | 2PC                                  | 2PC | *   | *   | *   |
| 10                                             | 2PC                                  | *   | *   | *   | *   |
| 11                                             | 2PC                                  | *   | *   | *   | *   |
| 12                                             | 2PC                                  | *   | *   | *   | *   |
| 13                                             | 2PC                                  | *   | *   | *   | –   |
| 14                                             | *                                    | *   | *   | *   | –   |
| 15                                             | *                                    | *   | *   | –   | –   |

Discontinuous Vertical Kingspan Multichannel  
Size: 235 mm. Gauge: 2.5 mm.  
Cladding Weight: 30 kg/m²

| Wall Height Hung<br>from Capable<br>Member (m) | Horizontal Panel Support Centres (m) |     |     |     |     |
|------------------------------------------------|--------------------------------------|-----|-----|-----|-----|
|                                                | 1.0                                  | 1.5 | 2.0 | 2.5 | 3.0 |
| 3                                              | PC                                   | PC  | 2PC | 2PC | 2PC |
| 4                                              | PC                                   | 2PC | 2PC | 2PC | 2PC |
| 5                                              | 2PC                                  | 2PC | 2PC | 2PC | 2PC |
| 6                                              | 2PC                                  | 2PC | 2PC | 2PC | *   |
| 7                                              | 2PC                                  | 2PC | 2PC | *   | *   |
| 8                                              | 2PC                                  | 2PC | *   | *   | *   |
| 9                                              | 2PC                                  | 2PC | *   | *   | *   |
| 10                                             | 2PC                                  | *   | *   | *   | *   |
| 11                                             | 2PC                                  | *   | *   | *   | *   |
| 12                                             | 2PC                                  | *   | *   | *   | *   |
| 13                                             | *                                    | *   | *   | *   | –   |
| 14                                             | *                                    | *   | *   | *   | –   |
| 15                                             | *                                    | *   | *   | –   | –   |

Discontinuous Vertical Kingspan Multichannel  
Size: 265 mm. Gauge: 2.5 mm.  
Cladding Weight: 30 kg/m²

| Wall Height Hung<br>from Capable<br>Member (m) | Horizontal Panel Support Centres (m) |     |     |     |     |
|------------------------------------------------|--------------------------------------|-----|-----|-----|-----|
|                                                | 1.0                                  | 1.5 | 2.0 | 2.5 | 3.0 |
| 3                                              | PC                                   | PC  | 2PC | 2PC | 2PC |
| 4                                              | PC                                   | 2PC | 2PC | 2PC | 2PC |
| 5                                              | 2PC                                  | 2PC | 2PC | 2PC | 2PC |
| 6                                              | 2PC                                  | 2PC | 2PC | 2PC | *   |
| 7                                              | 2PC                                  | 2PC | 2PC | *   | *   |
| 8                                              | 2PC                                  | 2PC | *   | *   | *   |
| 9                                              | 2PC                                  | 2PC | *   | *   | *   |
| 10                                             | 2PC                                  | *   | *   | *   | *   |
| 11                                             | 2PC                                  | *   | *   | *   | *   |
| 12                                             | 2PC                                  | *   | *   | *   | *   |
| 13                                             | *                                    | *   | *   | *   | –   |
| 14                                             | *                                    | *   | *   | *   | –   |
| 15                                             | *                                    | *   | *   | –   | –   |

- Notes:**
- 1 Assumed 60 minutes period of fire resistance.
  - 2 Assumed average horizontal rail centres = 2 metres.
  - 3 Connection of cleat to horizontal Capable Member to be designed by others.
  - 4 The design of the system should be based on the limiting requirement of:
    - a) the fire scenario (see table), and
    - b) the normal use / ambient scenario, i.e., due to wind, thermal (non-fire) and dead loads.For further guidance during the normal use / ambient scenario, please contact Kingspan Technical Services.
  - 5 For guidance where an asterisk (\*) is present, or for cases falling outside the specifications above, please contact Kingspan Technical Services.

# APPENDICES

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# APPENDIX 1: UNDERSTANDING THE BEHAVIOUR OF STEEL IN A FIRE

Steel section design follows either BS EN 1993-1-1: 2005 or BS EN 1993-1-3: 2006 at ambient temperatures, where section classification defines resistance limits due to local buckling. At elevated temperatures, steel behaviour changes significantly with guidance for structural fire design including non-linear reduction factors for steel properties and appropriate section classification provided in BS EN 1993-1-2: 2005.

Kingspan have worked with industry partners and experts in structural fire design to develop our technical service offering. For support and advice on specification of Capable Members and Passive Fire Protection requirements, please contact Kingspan Technical Services.

## Cross-section Classification

Cross-section classification identifies when the cross-section resistance and rotational capacity is limited by its local buckling resistance. Classifications are summarised below:

- **Class 1 & Class 2:** Local buckling effects do not limit resistance of the cross-section. Bending resistance is determined using the plastic modulus value  $W_{pl}$
- **Class 3:** Local buckling effects limit development of the full plastic moment resistance of the cross-section. Bending resistance is determined using the elastic section modulus value  $W_{el,min}$
- **Class 4:** Local buckling will occur on the section before the material yield stress is achieved. Bending resistance is calculated based on the effective section modulus value  $W_{eff,min}$

Plastic and elastic section moduli values are available from the [BCSA Bluebook](#) along with a limited number of effective moduli for sections which are Class 4 at ambient temperature.

## Elevated Temperatures

The loadbearing resistance of carbon steel changes significantly at elevated temperatures, with comprehensive design guidance on the necessary considerations provided in BS EN 1993-1-2: 2005 and the relevant national annexes.

Figure 1 shows the reduction in material strength for Class 1–3 sections ( $k_y, \theta$ ) and Class 4 sections, as well as the reduction in Modulus of Elasticity ( $k_E, \theta$ ).

Class 4 cross-sections are more sensitive to temperature rise, with equivalent strength reductions occurring at much lower temperatures compared to other classes. These effects are further compounded when the reductions in geometrical properties for Class 4 cross-sections are considered.

When designing for the fire limit state the use of Class 4 hot-rolled sections as load-bearing elements must be carefully evaluated as they can lead to impractical levels of passive fire protection, particularly intumescent coating thicknesses.

At the fire limit state, the Capable Member section classification must be reassessed with the reduction given in Equation 4.2 of BS EN 1993-1-2: 2005 below:

$$\epsilon = 0,85 [235 / f_y]^{0,5}$$

where:

$f_y$  is the yield strength at 20°C.

**Note 1:** See EN 1993-1-1.

**Note 2:** The reduction factor 0,85 considers influences due to increasing temperature.

It is not uncommon for the cross-section classification to increase at elevated temperatures.

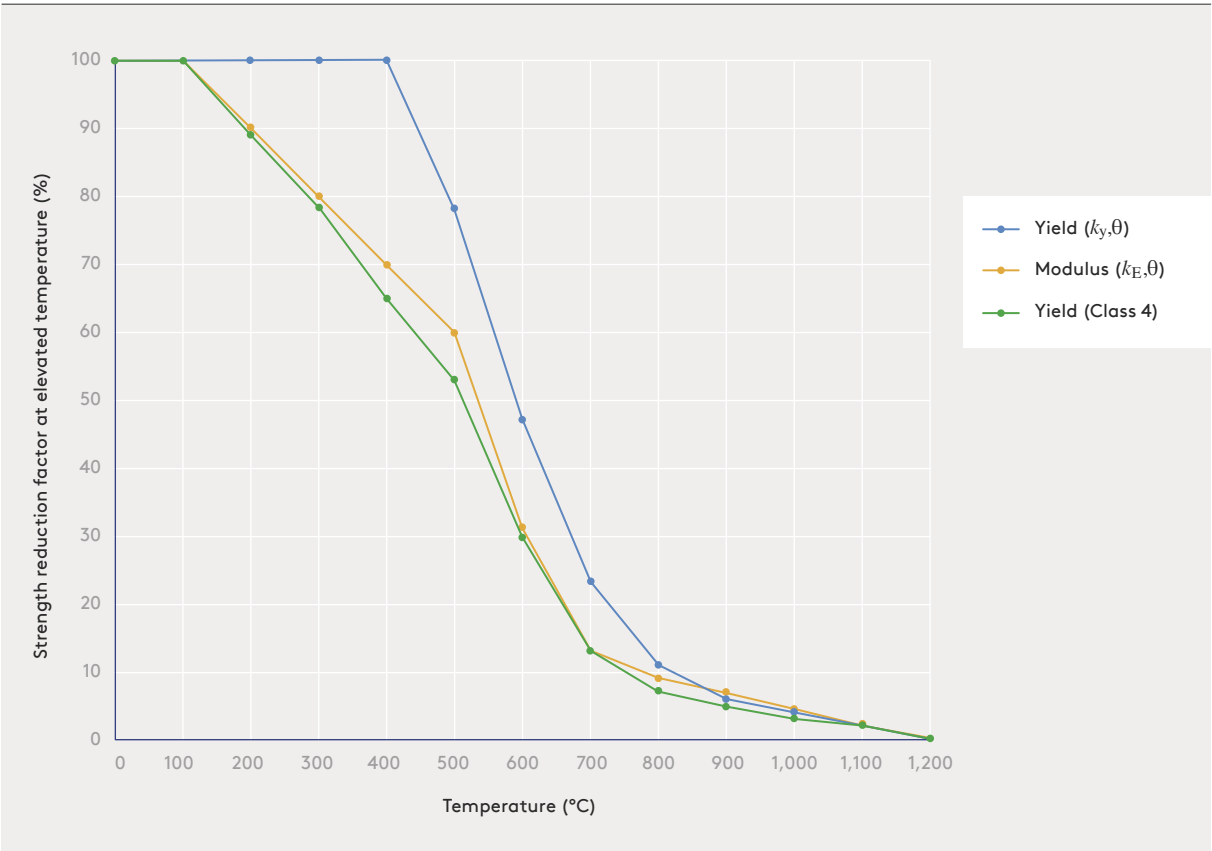


Figure 1: Material strength reduction factors of carbon steels at elevated temperatures.

# APPENDIX 2: DESIGN OF A CAPABLE MEMBER

## Design of a Capable Member

The Capable Member must be designed as an unrestrained beam with an effective length of  $1.0 \times \text{Length}$  unless restraint in the fire limit state is proven by other means.

The geometry of the Capable Member will have a direct impact on its performance in the fire limit state and subsequent specification of passive fire protection. It is expected, due to their inherent resistance to instability, particularly lateral torsional and flexural buckling that hollow sections will be the preferred solution.

It is anticipated that passive fire protection will be in the form of an intumescent coating applied either offsite or insitu. When dealing with hollow sections attention must be given to the section factor in order to optimise the passive fire specification.

## Section Factor

The section factor, often expressed as  $H_p/A$  or  $A/V$ , is the ratio of the surface area of the steelwork exposed to fire to the volume of steel in the member. It is a key parameter in determining how quickly the member will heat up during a fire. Assessing the section factor for a Capable Member is therefore essential to ensure a practical and efficient passive fire protection product can be specified and applied.

Higher section factor values require a greater amount of passive fire protection to be applied, which can result in additional coats and curing time being required depending on the cross-section shape and passive fire protection coating specified.

## Intumescent Coating Specification

The specification of intumescent coatings for passive fire protection must be conducted in consultation with a specialist manufacturer to ensure the product system satisfies the environmental corrosion conditions for the full construction phase and building lifecycle, in addition to complying with the project-specifications and fire safety strategy requirements.

Establishing these fundamentals allows the designer to determine the appropriate Dry Film Thickness (DFT) of coating to protect the steel member for their specific structural fire design requirements.

## Section Factor and Intumescent Coating Thickness using Kingspan QuadCore® Insulated Panels

Following tests combining Kingspan QuadCore® insulated panels with steel coated with intumescent coatings, it has been concluded that Kingspan QuadCore® insulated panels offer better shielding to the connected face than intumescent alone. On this basis the following rules can be applied when assessing the Capable Member for Passive Fire Protection.

- Section Factor; calculate for a 4-sided exposed beam including the clad face in the heated perimeter calculation.
- DFT Tables; must use 4 sided column tables in determining intumescent coating thicknesses.

Where intumescent coatings are applied offsite the coating should be applied to all 4 sides to avoid the section becoming handed. Where intumescent coatings are applied onsite the coating must be taken up to the cladding junction with the Capable Member.

| Design Level | Description                                                                                                         | Pros                                                                                                                                                                                                                                                       | Cons                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------|---------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Level 1      | Use default critical temperatures from industry resources (e.g., ASFP Yellow Book)                                  | Quick and easy to apply; no detailed calculations required                                                                                                                                                                                                 | Conservative; could lead to thicker coatings and higher costs<br>Assumes utilisation factor $\mu_0 = 0.6$                                                                                                                                                                                                                                                                                              |
| Level 2      | Simple Method (cl. 4.2.4)<br>Section utilisation approach                                                           | Employs basic calculations based on spare capacity at ambient temperature                                                                                                                                                                                  | <ul style="list-style-type: none"><li>■ Not applicable to Class 4 sections.</li><li>■ Does not account for any change of section classification.</li><li>■ Limited to members that have uniform temperature gradient, i.e. members fully engulfed in fire (4-sided exposure)</li><li>■ not applicable to members where instability is a factor, i.e. LTB effects or flexural buckling modes.</li></ul> |
|              | Advanced Method (cl. 4.2.3)<br>Strength reduction factors and full section recalculation                            | <ul style="list-style-type: none"><li>■ Optimised steelwork and fire protection</li><li>■ Includes section classification effects</li><li>■ Includes applicable strength reductions and changes to material behaviour due to temperature effects</li></ul> | Requires a structural engineer with experience in structural fire design to perform more complex calculations                                                                                                                                                                                                                                                                                          |
| Level 3      | Numerical modelling using finite element analysis to determine heat transfer effects and/or mechanical load effects | Most refined, optimises fire protection across the structure, potential material and cost savings                                                                                                                                                          | Requires specialist structural fire engineering knowledge and software; high level of expertise needed                                                                                                                                                                                                                                                                                                 |

## Critical Temperature

The elevated temperature at which the member can no longer support the loading in the fire condition is called the Critical Temperature.

Capable Member designers are provided three design approaches to determine the critical temperature, each of which can lead to significant differences in the specified intumescent coating thickness.

Critical temperatures can be determined using tabulated data, simple calculation models or advanced numerical modelling techniques.

**Structural engineers shall be aware of the limitations of using Clause 4.2.4 outlined above to avoid over-estimation of fire limit state capacity of Capable Members.**

# APPENDIX 2: DESIGN OF A CAPABLE MEMBER

The following examples are based on a common design scenario to highlight the varying critical temperature results for Level 1 and Level 2 design methods.

Application: Simply supported beam in bending.  
Section: SHS 150 x 150 x 5 mm (S355) - Hot Finished.  
A/V = 209 m<sup>-1</sup>, Load @ fire limit state = 2.475 kN/m,  
Span = 8.0 m.  
Section Classification at ambient = Class 2.  
Section Classification at elevated temperature = Class 3.

### Level 1 Design

Use default value of critical temperature from industry resources such as ASFP Yellow Book 6th Edition.

**Example:**

From Table 7 of ASFP Yellow Book 6th Edition for beams not supporting concrete slabs.

**Critical Design Temperature: 550°C**

### Level 2 Design

#### Simple calculation method – Clause 4.2.4

Where the selected capable member satisfies the requirements given in the table above the utilisation ratio ( $\mu_0$ ) between fire limit state and ambient temperature can be used to determine the critical temperature.

For values of  $\mu_0$  between 0.7 – 0.2 it is possible to linearly interpolate from Table NA.1 of the NA to BS EN 1993-1-2: 2005 or to use expression 4.22 of the standard.

Using equation 4.22 to evaluate the example above:

$$\mu_0 = E_{fi,d} / R_{fi,d,0}$$

where:  
 $E_{fi,d}$  = design actions at the fire limit state.  
 $R_{fi,d,0}$  = design resistance of the Capable Member at ambient temperature.

$E_{fi,d} = 19.8 \text{ kN}\cdot\text{m}$   
 $R_{fi,d,0} = 55.38 \text{ kN}\cdot\text{m}.$

$$\mu_0 = \frac{E_{fi,d}}{R_{fi,d,0}} = 0.358$$
$$\theta_{a,cr} = 39.19 \cdot \ln \left[ \frac{l}{0.967 \mu_0^{3.833}} - 1 \right] + 482 = 637^\circ\text{C}$$

**Critical Design Temperature: 637°C**

### Advanced Calculation Method: Clause 4.2.3

In order to cover any potential change in section class in the fire limit state the classification should be reviewed. This method is only applicable to members not susceptible to stability affects and allows the critical temperature to be found by directly interpolating from Table 3.1 using appropriate section modulus for the section at the fire state classification, for example:

Check section classification with a reduced value for  $\epsilon$  as follows:

$$\epsilon = 0.85 \cdot \sqrt{\frac{235}{355}} = 0.692$$

Note: the following design examples do not include ambient temperature design considerations, the section must be proven for all limit state checks as appropriate.  
**For detailed and / or project-specific guidance, please contact Kingspan Structural Products Technical or our intumescent coating partners (see page 61).**

Reclassification of the section shows that the flange changes to Class 3 therefore resistance is based on the elastic section modulus  $W_{el} = 134 \text{ cm}^3$  which is used to determine the utilisation ratio as follows:

$$\mu_0 = \frac{E_{fi,d}}{W_{el} \cdot f_y} = 0.416$$
$$\theta_{a,cr} = 39.19 \cdot \ln \left[ \frac{l}{0.967 \mu_0^{3.833}} - 1 \right] + 482 = 614^\circ\text{C}$$

**Critical Design Temperature: 614°C**

Where the capable member is sensitive to stability affects such as Lateral Torsional Buckling modified resistances must be calculated based on the actual restraint conditions in a fire following extended methods given in clause 4.2.3 of the standard.

If the section is, or changes to Class 4 in a fire the method given in Annex E of the standard must be followed using the steel reduction factors presented in Table E.1.

### Level 3 Design - Numerical modelling

Uses advanced techniques such as finite element analysis that consider non-linear material properties and loads with respect to heat transfer and structural mechanics for multiple materials in more complex constructed arrangements. This method requires expert knowledge of structural fire engineering and is outside of the scope of the solutions covered by this document.

### Summary

Given the potential for overestimation of the critical temperature by disregarding the change in section classification, the use of the Level 2 Simple Calculation Method for design of capable members must be fully justified for the specific application to ensure the scope of Clause 4.2.4 is not misapplied.

**Level 1:** Often overly conservative.

**Level 2 – Simple Method:** Applicability to the design of Capable Members must be verified by the structural engineer in keeping with the limitations of the design code. Misapplication can lead to overestimation of critical temperatures.

**Level 2 – Advanced Method:** Calculation of critical temperature accounting for specific loading conditions and section resistance at elevated temperature.

**Level 3:** Out of scope of this document.

Comparing results for the design scenario outlined above for Level 1 and Level 2 Advanced critical temperatures with respect to the required intumescent coating thickness shows that considerable optimisation of the coating thickness is achievable by using the advanced method.

Further consideration of deflection at the fire limit state is advised, Kingspan suggest an deflection limit of span/90 to maintain cladding joint integrity which can affect selection of Capable Member and intumescent coating thickness.

The intumescent coating manufacturer must be consulted to ensure correct specification of the product and coating thickness for the calculated critical temperature and section factor.

# APPENDIX 3: REFERENCES & RESOURCES

## Statutory Guidance

- England**  
HM Government: The Building Regulations 2010: Approved Document B Volume 2: Buildings other than dwellings. Fire Safety - 2019 edition incorporating 2020, 2022 and 2025 amendments and forthcoming 2026 and 2029 changes.
- Scotland**  
Scottish Government: Building Standards Division - Building standards technical handbook January 2025: non-domestic - Section 2 (Fire).
- Wales**  
Welsh Government: The Building Regulations 2010: Approved Document B Volume 2: Buildings other than dwellinghouses. Fire Safety - 2006 Edition incorporating 2010, 2013, 2016, 2017 and 2020 amendments.
- Northern Ireland**  
Building Regulations (Northern Ireland) Technical Booklet E - Fire Safety.
- Ireland**  
Government of Ireland: Technical Guidance Document B - Fire Safety - Volume 1 Buildings other than Dwelling Houses.

## Industry Organisation Guidance

- BCSA**  
Technical Specification - Boundary elevations.
- ASFP**  
Yellow Book: Fire protection for structural steel in buildings Volume 1 - 6th Edition.
- MCRMA**  
GD 42 BCSA Capable Member Technical Specification November.

## Structural Design Guidance

- SCI P313**  
Single Storey Steel Framed Buildings in Fire Boundary Conditions.
- SCI P375**  
Fire resistance design of steel framed buildings.
- SCI P399**  
Design of steel portal frame buildings to Eurocode 3.
- SCI P400**  
Design of steel portal frame buildings to Eurocode 3: An overview for UK designers.

## Fire Testing Standards

- BS EN 1363-1: 2020**  
Fire resistance tests - General requirements.
- BS EN 1364-1: 2015**  
Fire resistance tests for non-loadbearing elements - Walls.
- BS EN 13501-1: 2018**  
Fire classification of construction products and building elements - Classification using data from reaction to fire tests.
- BS EN 13501-2: 2023**  
Fire classification of construction products and building elements - Classification using data from fire resistance and / or smoke control tests, excluding ventilation services.
- BS EN 13381-2: 2014**  
Test methods for determining the contribution to the fire resistance of structural members - Vertical protective membranes.

- BS EN 13381-4: 2013**  
Test methods for determining the contribution to the fire resistance of structural members - Applied passive protection products to steel members.
- BS EN 13381-8: 2013**  
Applied reactive protection to steel members.
- BS EN 15254-5: 2018**  
Extended application of results from fire resistance tests. Non-loadbearing walls - Metal sandwich panel construction.
- BS 476-20: 1987**  
Fire tests on building materials and structures - Method for determination of the fire resistance of elements of construction (general principles).
- BS 476-21: 1987**  
Fire tests on building materials and structures - Methods for determination of the fire resistance of loadbearing elements of construction.
- BS 476-22: 1987**  
Fire tests on building materials and structures - Methods for determination of the fire resistance of non-loadbearing elements of construction.

## Structural Design Standards

- BS EN 1990: 2002 + A1: 2005**  
Eurocode. Basis of structural design.
- BS EN 1991-1-1: 2002**  
Eurocode 1. Actions on structures - General actions - Densities, self-weight, imposed loads for buildings

- BS EN 1991-1-2: 2002**  
Eurocode 1. Actions on structures - General actions. Actions on structures exposed to fire.
- BS EN 1993-1-1: 2005 + A1: 2014**  
Eurocode 3. Design of steel structures - General rules and rules for buildings.
- BS EN 1993-1-2: 2005**  
Eurocode 3. Design of steel structures - General rules - Structural fire design.
- BS EN 1993-1-3: 2006**  
Eurocode 3. Design of steel structures - General rules - Supplementary rules for cold-formed members and sheeting.
- BS EN 1993-1-5: 2006 + A2: 2019**  
Eurocode 3. Design of steel structures - Plated structural elements.
- The structural design standards listed above are due to be withdrawn by BSI on 30 March 2028, whereby the second-generation Eurocodes will become the applicable standards for buildings and civil engineering works constructed in the UK.

- The following standards are classified as ‘withdrawn’ by BSI but can also be read in the context of this document where project-specific requirements apply.
- BS 5950-1: 2000**  
Structural use of steelwork in building - Part 1: Code of practice for design. Rolled and welded sections
- BS 5950-8: 2003**  
Structural use of steelwork in building - Part 8: Code of practice for fire resistant design

# APPENDIX 4: INDUSTRY COLLABORATION PARTNERS

## Industry Organisations

**BCSA**  
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[www.bcsa.org.uk](http://www.bcsa.org.uk)

**SCI**  
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**MCRMA**  
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[www.mcrma.co.uk](http://www.mcrma.co.uk)

## Structural Fire Engineering Consultants

**Strufire**  
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[www.strufire.com](http://www.strufire.com)

## Fire Engineering Consultants

**Tenos**  
E: [info@tenos.com](mailto:info@tenos.com)  
[www.tenos.com](http://www.tenos.com)

## Passive Fire Protection Specialists

**PFP Specialists**  
[www.pfpspecialists.com](http://www.pfpspecialists.com)

**Siderise**  
[www.siderise.com](http://www.siderise.com)

## Intumescent Coatings

**Jotun**  
T: +44 (0) 1724 400 000  
E: [protectiveenquiries@jotun.co.uk](mailto:protectiveenquiries@jotun.co.uk)  
[www.jotun.co.uk](http://www.jotun.co.uk)

**Hempel UK Ltd**  
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[www.hempel.co.uk](http://www.hempel.co.uk)

**Sherwin Williams**  
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[www.sherwin-williams.com](http://www.sherwin-williams.com)

## Fasteners

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[www.uk.sfs.com](http://www.uk.sfs.com)



## IN DEVELOPMENT: COLD-ROLLED CAPABLE EAVES BEAM

We are collaborating with Siderise to jointly develop a cold-formed Multibeam Capable Eaves Beam protected to achieve 60 minutes fire performance when installed in accordance with tested approved details.

- Provides a lightweight fire protection solution utilising Siderise EB-FB eaves beam fire board.
- The tested solution will be verified with third-party independent fire experts.

Contact Kingspan Structural Products Technical Services for further information.

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