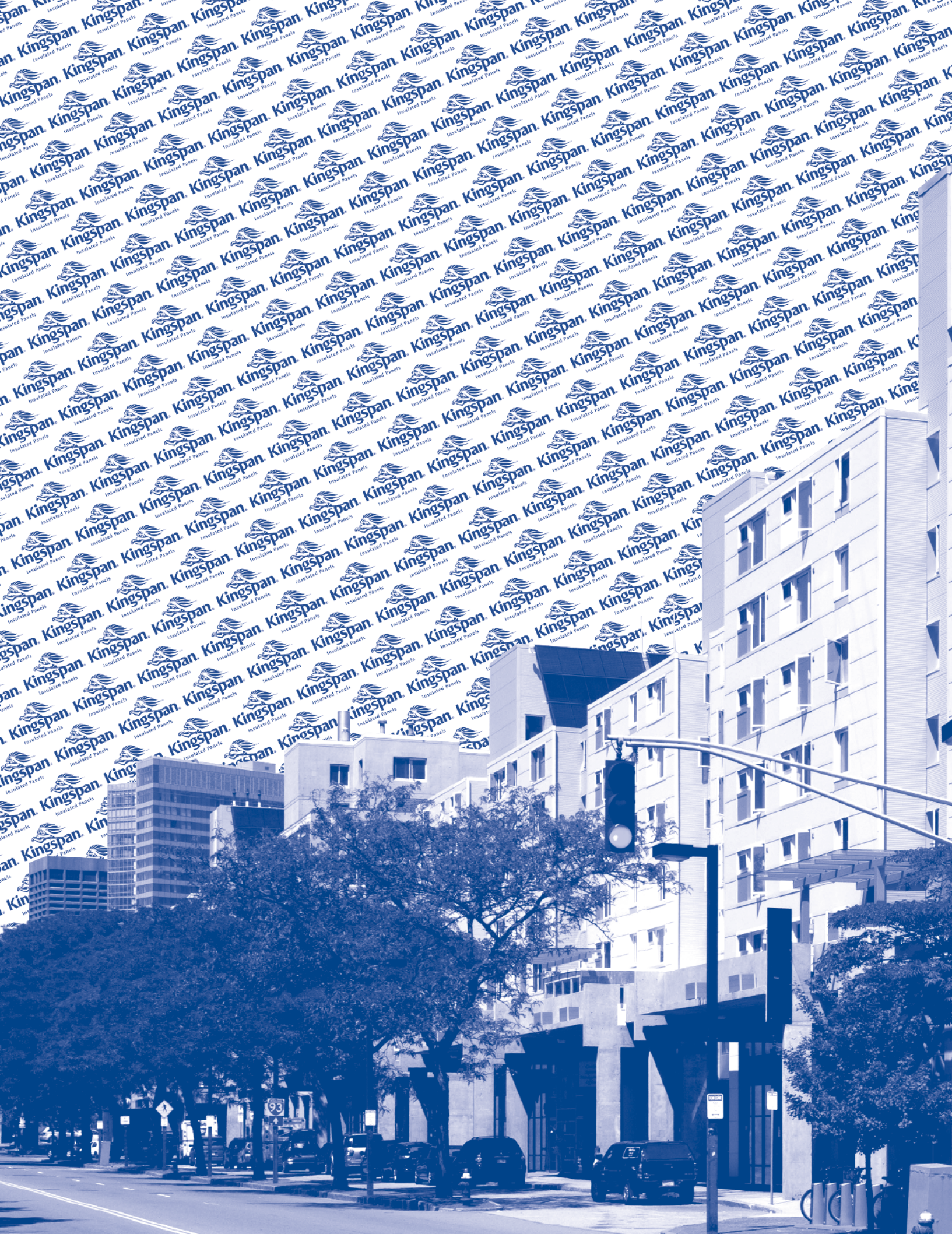
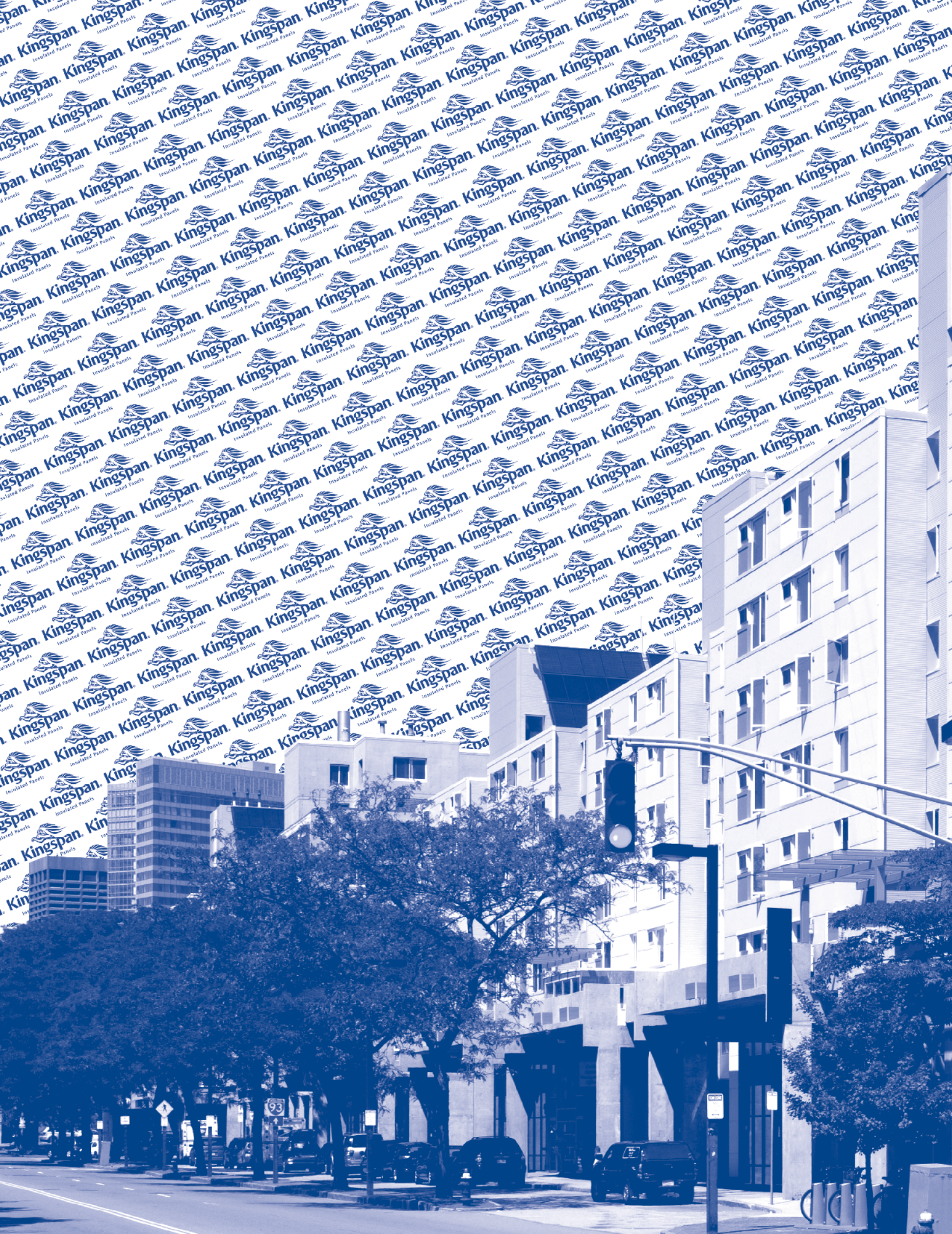
Kingspan®
Insulated Panels

High Performance Building Envelope Solutions

Insulated Metal Wall and
Roof Panels and Accessories




CASTLE SQUARE
E.BERKELEY ST
LT JEREMIAH W SULLIVAN
SQUARE



Kingspan
Insulated Panels

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Your Global Partner

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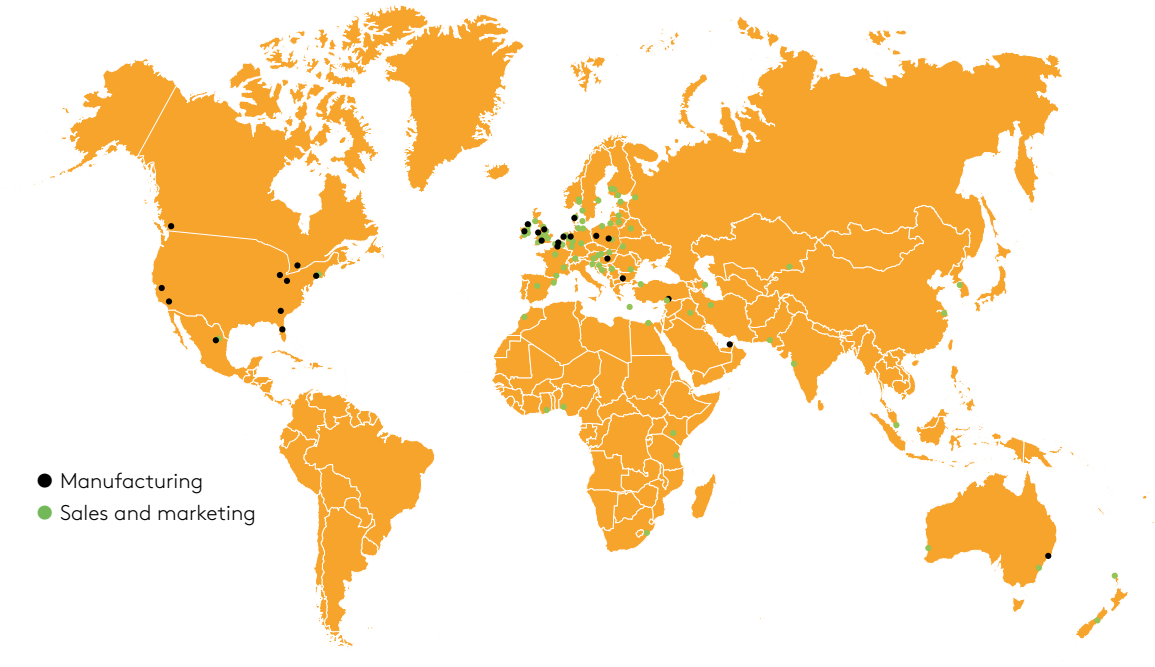
Business Locations

Kingspan Insulated Panels is a global leader in the design, development and delivery of advanced building envelope products and solutions



13
regional R&D centres

101
manufacturing sites worldwide

3.2
$ billion revenue in 2016

10,000+
employees worldwide

At Kingspan Insulated Panels, we are pioneering better technologies and methods of building for a low carbon world. Improving building performance, construction methods and ultimately people's lives – that's what drives our people across the world. Energy efficiency is at the heart of our innovation, from making the industry's most thermally efficient core for our insulated panels, to producing the most airtight interfaces, to providing technical and field-service support on how to build optimally.

As the world demands more from buildings in terms of energy efficiency, fire safety, weather resilience, health and aesthetics, we have expanded beyond insulated panels in recent years to encompass high-end facades, smart LED lighting, integrated PV and structural steel solutions.

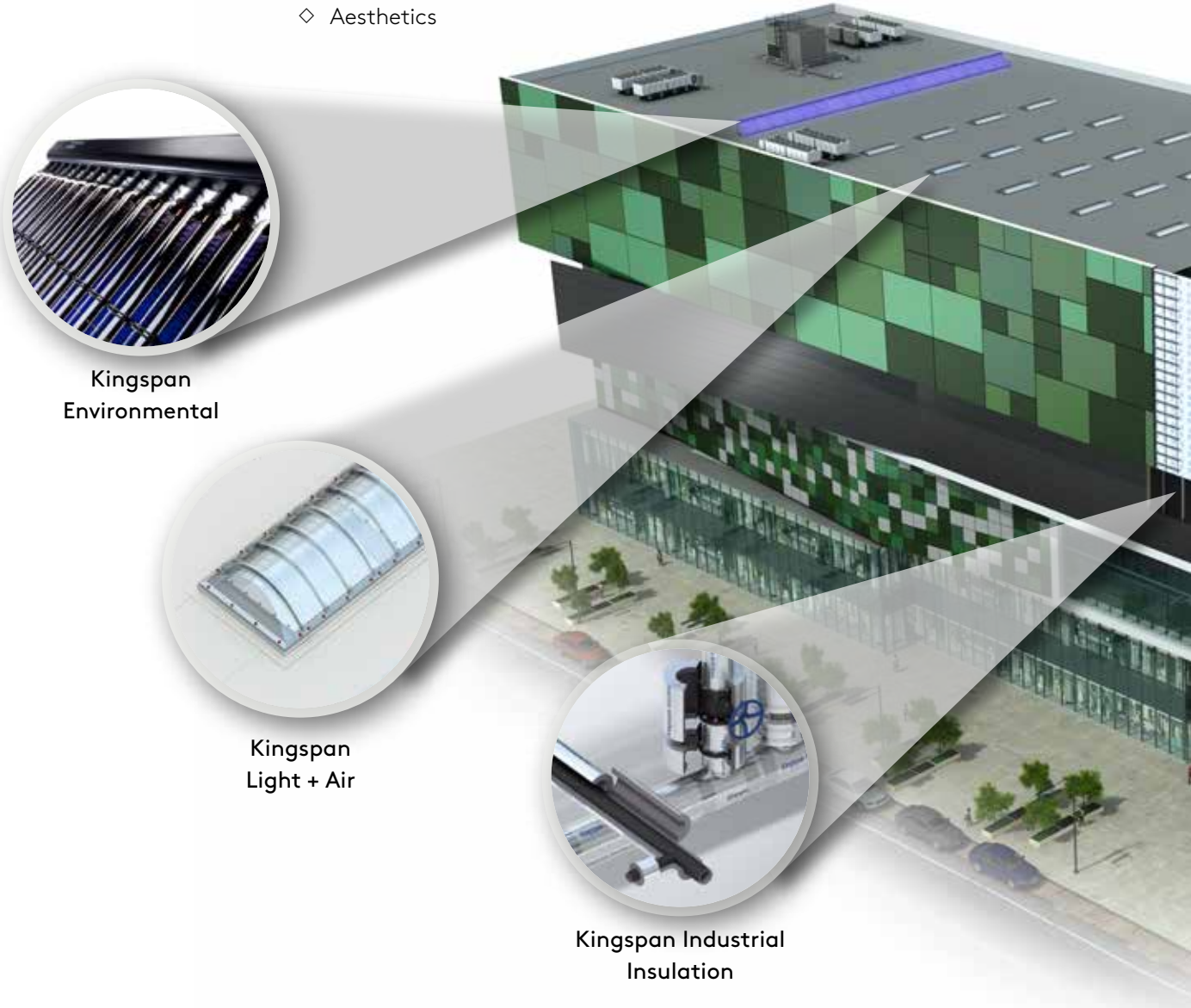
Together with the learnings from our ongoing research into better building design, these enhanced Kingspan envelopes will take our built environment to the next era of efficiency and wellbeing.

Integrated Systems for Building Envelopes

We offer an unrivalled range of compatible systems that when designed and installed optimally, deliver superior building lifetime performance.

Kingspan building envelopes are designed to be faster to build and deliver exceptional results in terms of:

- ◇ Fire safety
- ◇ Operating costs (due to better thermal efficiency and air tightness, as well as the elimination of lighting energy costs with our Zero Energy Lighting solution)
- ◇ Low maintenance (due to robust construction and superior weather resilience)
- ◇ Comfort (due to more natural daylight, improved temperature regulation and excellent acoustics)
- ◇ Aesthetics



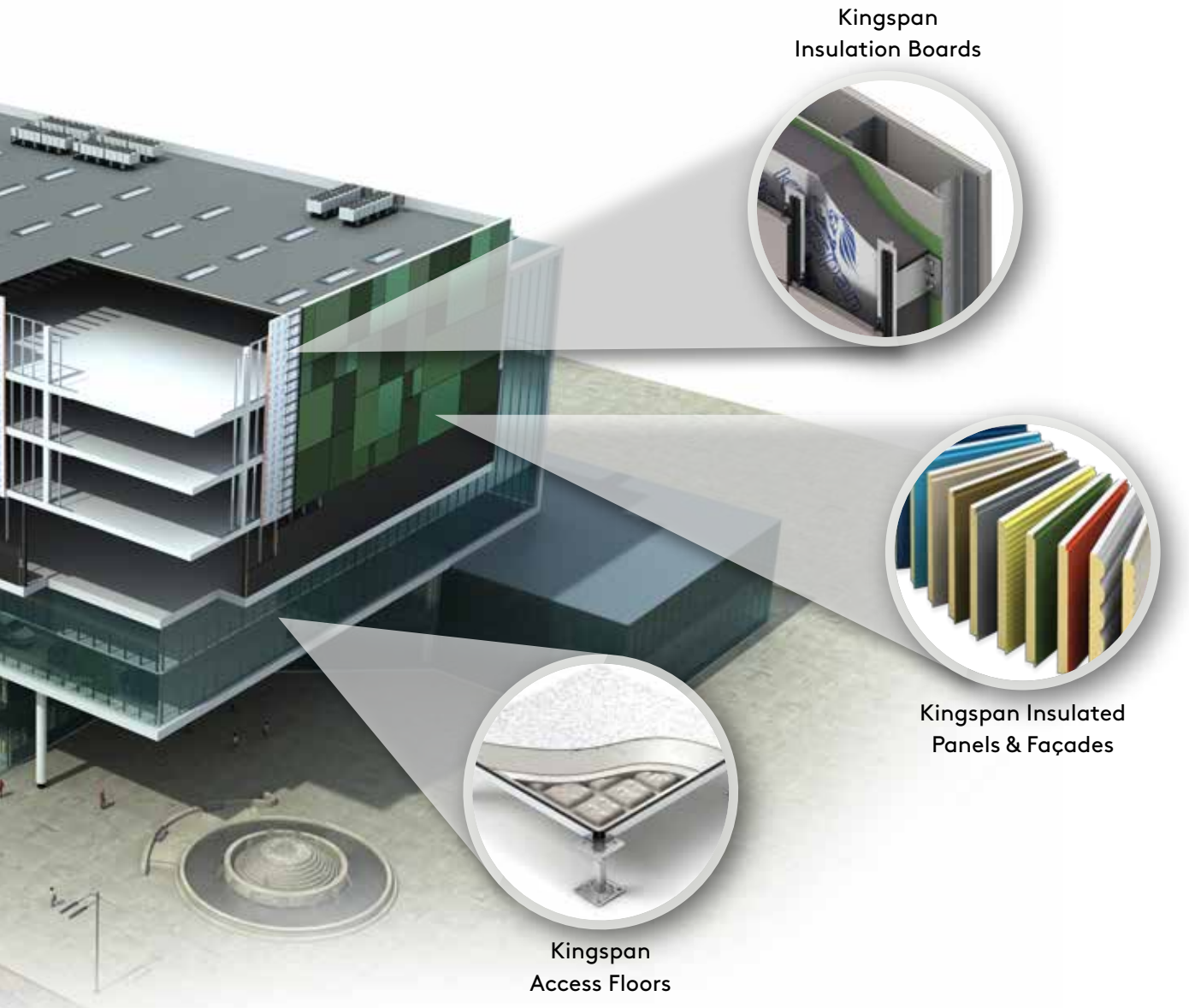
Kingspan Environmental

Kingspan Light + Air

Kingspan Industrial Insulation

Our technical design team advises on how to achieve this high performance with a wide range of supports including:

- ◇ Continuous training and installation certification
- ◇ Structural calculations
- ◇ Building Information Modelling (BIM)
- ◇ Whole building energy efficiency advice
- ◇ Fire engineering and design proposals
- ◇ Whole project pricing services
- ◇ Complete envelope design support services



Where We Are


Kingspan Insulated Panels is located in Modesto, California; Deland, Florida; Columbus, Ohio; Caledon, Ontario; Langley, British Columbia and Pesquería, México
Regional Sales Managers are located across the U.S., Canada and Mexico. Call Kingspan direct or visit **www.kingspanpanels.com** and select your location to identify your nearest Regional Sales Manager.
1
2
3
4
5
6

1. **Kingspan Insulated Panels**
   726 Summerhill Drive, Deland, FL USA 32724
2. **Kingspan Insulated Panels**
   5202-272nd Street, Langley, BC Canada V4W 1S3
3. **Kingspan Insulated Panels**
   Lot E, Airport Technology Park, Pesquería, N.L., México
4. **Kingspan Insulated Panels &**
   BENCHMARK By Kingspan
   2000 Morgan Road, Modesto, CA USA 95358
5. **Kingspan Insulated Panels &**
   BENCHMARK By Kingspan
   12557 Coleraine Drive, Caledon, ON Canada L7E 3B5
6. **BENCHMARK By Kingspan**
   720 Marion Road, Columbus, OH USA 43207

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Installation Seminars:
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Marketing:
marketingdept@kingspanpanels.com

Product Samples:
sample@kingspanpanels.com

Follow Kingspan Insulated Panels on:

Office / Manufacturing

Maui Brewing Company, Kihei, HI.

Retail

Colruyt Cessy, France

Transportation

Ketchikan Shipyard,
Ketchikan, AK

Storage / Warehouse

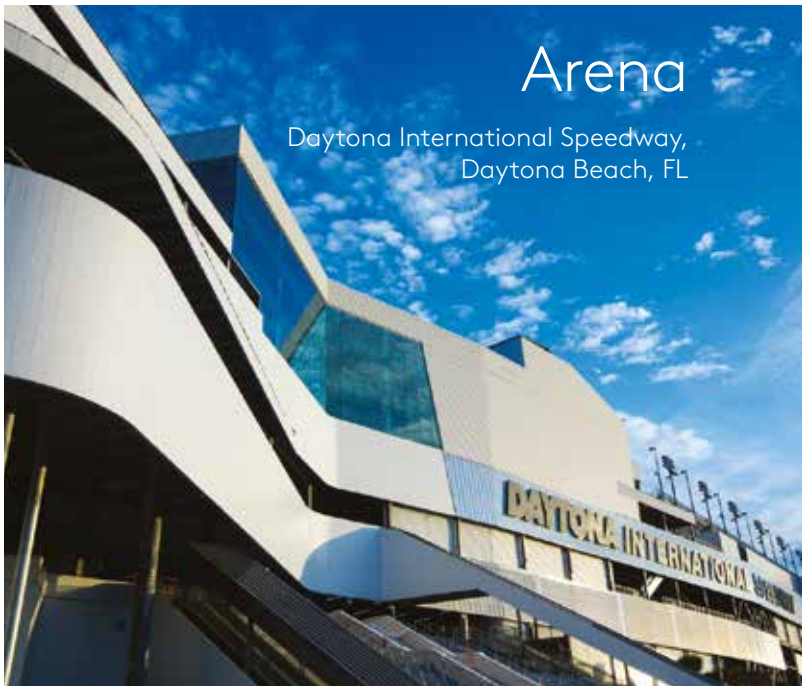
Premium Wine Storage, Healdsburg, CA

Leisure

Marine Gateway Cineplex, Vancouver, BC, Canada

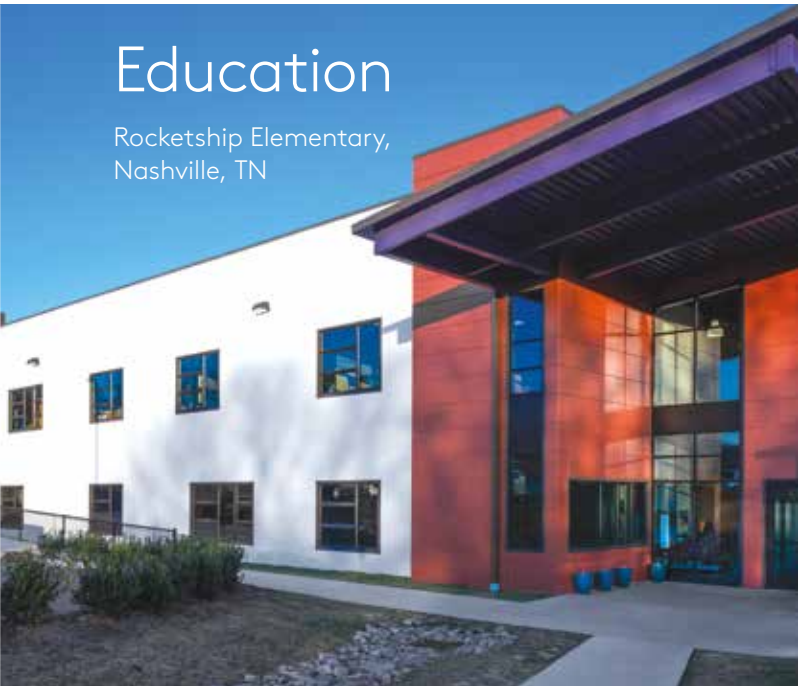
Healthcare

Wollongong Hospital,
NSW, Australia



Arena

Daytona International Speedway,
Daytona Beach, FL



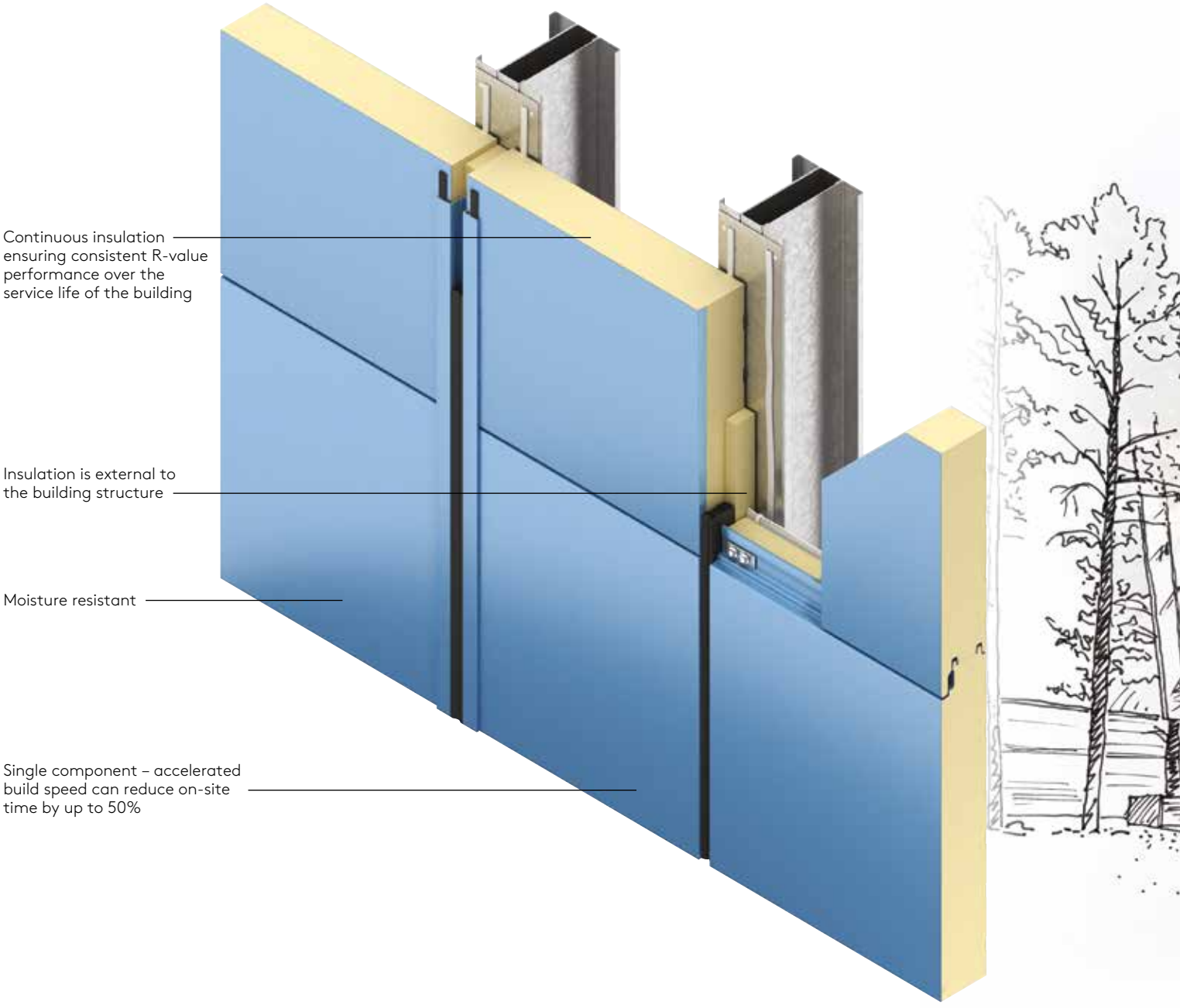
Education

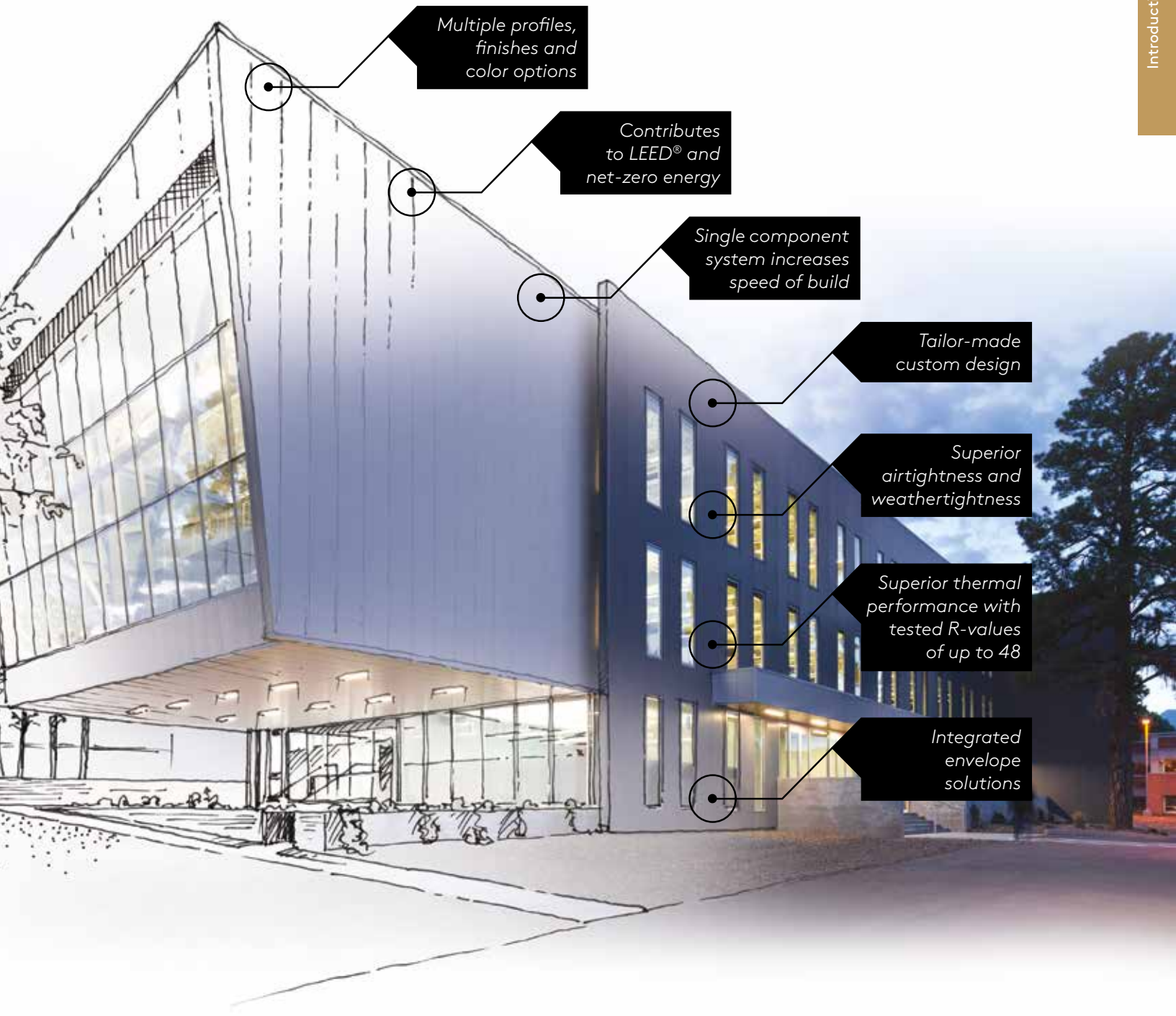
Rocketship Elementary,
Nashville, TN

Office

Ecosciences Precinct,
Australia

What is an Insulated Metal Panel?




Multiple profiles, finishes and color options
Contributes to LEED® and net-zero energy
Single component system increases speed of build
Tailor-made custom design
Superior airtightness and weathertightness
Superior thermal performance with tested R-values of up to 48
Integrated envelope solutions

Higher Building Performance with Kingspan

It's all in the gray cells

Kingspan's invention of QuadCore™ Technology is a transformational step on the journey to creating net-zero energy buildings that are not only safer, but better for the environment and for business too.

If you're looking for the highest thermal performance the industry has to offer with superior fire protection and leading environmental credentials then our brand new, QuadCore™ Technology insulated panels are what you need for your next project. Let's take a look at what makes QuadCore™ Technology such a fantastic addition for future buildings ...

1

Best thermal efficiency

QuadCore™ Technology delivers superior U-value performance with an unbeaten thermal conductivity of 0.018 W/mK* – the best in the industry and an R-value of 8. Together with optimized building design this pushes the potential for heat loss reduction to reach new levels. Better thermal efficiency in the building envelope reduces the load on heating and cooling, which unlocks significant additional energy savings.

2

Longest performance guarantee

Today's buildings must be safe, efficient, reliable, practical and sustainable. Above all, they must provide a comfortable environment for users while satisfying regulations and having minimal impact on our environment. QuadCore™ Technology helps deliver all of this and more. In fact, we guarantee that whatever direction the building takes, the thermal and structural performance will last.

3

Superior fire protection

Kingspan's QuadCore™ Technology is the only closed-cell insulated panel material tested and approved by third party industry experts to FM 4882 for smoke sensitivity. It's reassuring to know that our QuadCore™ Technology will deliver industry-leading protection against the dangers of fire.

Just another way we're offering a peace of mind built into a material solution.

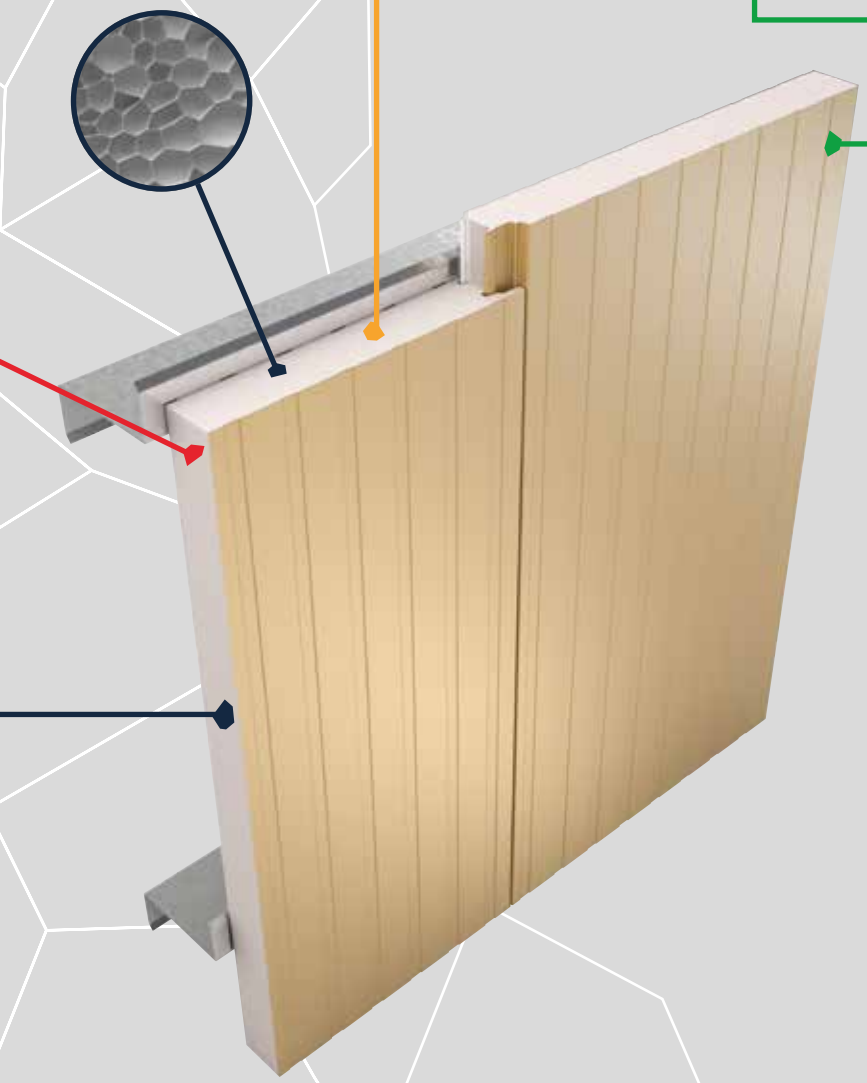
4

Enhanced environmental credentials

QuadCore™ Technology delivers higher environmental credentials leading to the only HFR Free (Halogenated Flame Retardants) closed cell insulated available. Our commitment for continues improvement combined with a Cradle to Cradle Material Health Certification raising the bar yet again on Material Health and Transparency.

All of which means QuadCore™ Technology can make a significant and lasting difference to your environmental performance figures while enhancing the sustainability of your building.

In addition, carbon emissions can be reduced with QuadCore's better thermal performance, particularly when implemented with an optimized building design approach.



POWERED BY QuadCore™ TECHNOLOGY

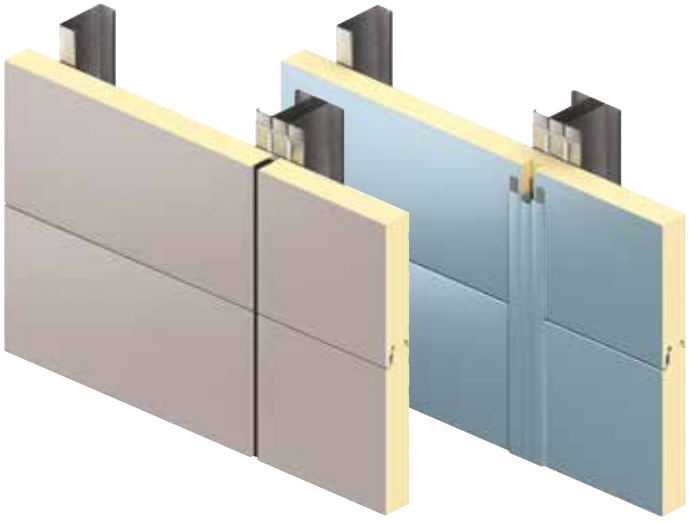
A bespoke hybrid technology with a unique formulation that creates microcells with industry-leading thermal performance, superior fire protection and enhanced environmental credentials

* A 20% thermal performance improvement of 0.018 W/m.K when compared to typical value of 0.023 W/m.K.

Design Flexibility

Vertical Joint Options

- ◇ Trimless ends and gaskets
- ◇ Range of top hat trims



Aluminum top hat with Santoprene® rubber gasket

Aluminum top hat with recessed insert

Aluminum top hat with flush insert

Santoprene® rubber gasket (VJ-5)

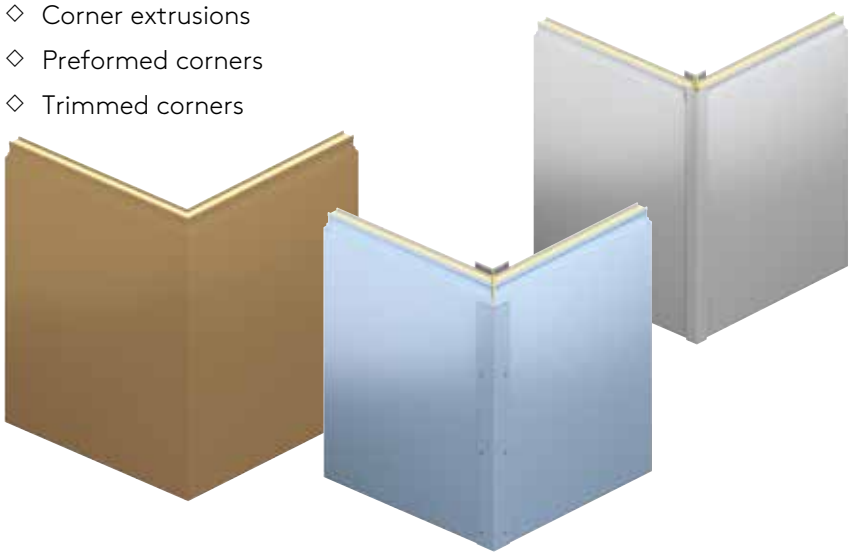
NCR Call Centre, Motherwell, UK.

Design Flexibility

Corners Options

A range of corner options are available that are essential finishes to the aesthetics of a building. The following options are available*:

- ◇ Corner extrusions
- ◇ Preformed corners
- ◇ Trimmed corners



*Not all options are available for every product type. Please consult your Regional Sales Manager for details.

WNED, Buffalo, NY.

Speed of Construction

Insulated metal panels as a single component system increases speed of build while minimizing delays and the need for multiple trades.

Construction Schedule: Brown Hall – University of Tennessee

Step 1

The Fred D. Brown, Jr. Residence Hall on the University of Tennessee Knoxville campus was the first new residence hall constructed at UT since 1967.

Scan the code to watch the full University of Tennessee timelapse video

Step 2

The 250,000sf residence hall was clad with Kingspan's KarrierPanel™ barrier wall system with brick rain screen to increase the speed of construction, minimize delays, and reduce the number of trades required for installation.

Step 3

"The KarrierPanel™ system allows us to create a state-of-the-art, sustainable building while complementing the architectural style and look of the existing buildings on campus" Rich Schoenberg, Unified Building Systems, an AES Clean Technology, Inc. company.

Construction Schedule: Daytona International Speedway

Step 1

The brand new DAYTONA stadium is a fitting tribute to the ground breaking meeting place envisioned by car enthusiast, Bill "Big Bill" France Sr. back in the 1950's.

Scan the code to watch the full Daytona Speedway timelapse video

Step 2

"We realized that if we were going to transform DAYTONA into a stadium that would be future proof for generations to come, we needed best-in-class partners. That ultimately led to our partnership with Kingspan who provided a range of sustainable, advanced panel technologies for our world-class facility." Joie Chitwood, COO of International Speedway Corporation.

Step 3

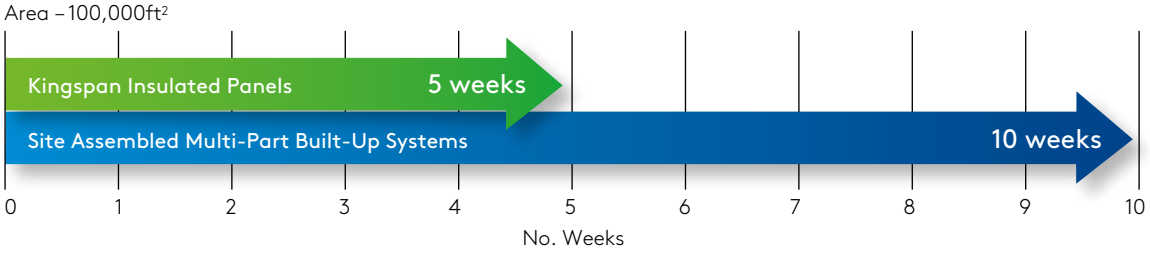
A striking exterior element of the building features shimmering colors with dynamic curves, created using Optimo and Designwall 2000 while another 400,000sf of Morin, single element metal panels, were also used to clad the first ever motorsport stadium.

Case Study

Consultants for a large retail chain estimate construction schedule time savings of up to five weeks were achieved in a multiple unit construction program with insulated metal panels.

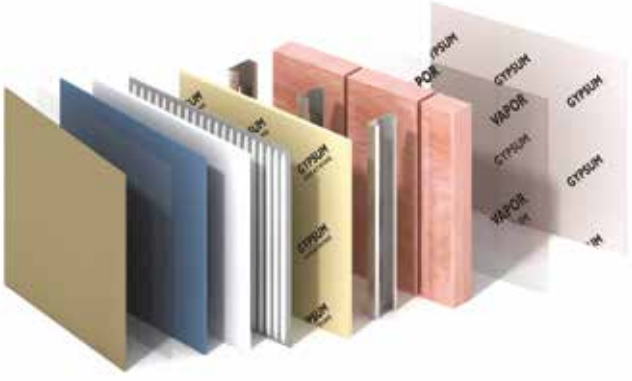
An average retail store with profits of $35,000 a week can potentially earn $175,000 profit in this time as the building is open for business and revenue is generated.



Wall Assembly Installation – One, Two, Three!

Insulated metal panels increase speed of build, minimize delays and the need for multiple trades



Wall Assembly with Intertior Finish	Number of Compoments
Insulated Metal Panels	**3**
Single Skin Metal (Rainscreen)	7-8
Aluminum Composite Metal (Rainscreen)	6
Exterior Insulated Finish System (EIFS)	11
Masonry Veneer	7
Tilt-Up Concrete / Pre-Cast	3-6

Thermal Performance

The easiest, fastest and most cost effective strategy to reduce energy demand and construction costs is to utilize the high thermal performance, superior airtightness and "cool" wall benefits of Kingspan wall systems.

High R-value

Kingspan Insulated Panels' insulating cores provide superior thermal performance with tested R-values of up to 48*. Most importantly, the insulation is on the exterior of the building structure to provide the best possible thermal envelope by reducing thermal bridging typical of cavity wall systems. In addition, the panels feature excellent insulation core-to-core contact, which provides an unbroken thermal shield against heat transfer.

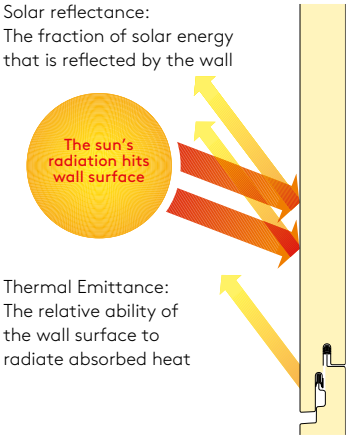
Superior Airtightness and Weathertightness

One of the biggest sources of building heat loss (or heat gain) is air leakage i.e. – "leaky buildings". Kingspan panels are rigorously tested to ensure that they remain both airtight and weathertight over the life of a building.

* Standard foam has an R-value of 7 per inch and QuadCore has an R-value 8 per inch.

Cool Walls

Walls that are highly reflective and highly emissive, such as insulated prepainted metal panels, significantly reduces heat gain into the building. Please see our color chart on page 116 and 117 for SRI indexes.



Boston Seaport Self Storage, Boston, MA.

Testing and Accreditation

Performance Requirements and Product Listings:

Kingspan Insulated Panels meet specific building envelope performance criteria and requirements stipulated by US and Canadian building codes. Panels are tested in accordance with UL, ULC, FM and ASTM approval standards, testing methods and procedures. Kingspan Insulated Panels are listed by FM Global and Warnock Hersey.

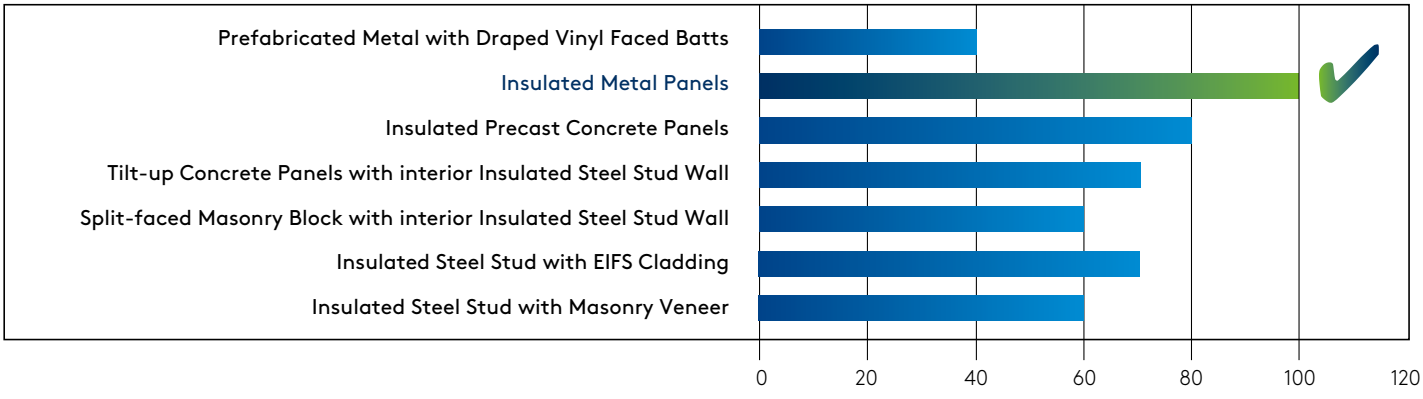
Scan here or visit www.kingspanpanels.com for product specifications

Energy Efficiency

Energy efficiency is one of the most important overall metrics of a building's sustainability performance. The energy consumed during the construction and operation of buildings form a major share of total human energy consumption.

Hence, energy consumption must be given serious consideration. Numerous studies have repeatedly demonstrated that the lowest cost approach to reduce expenditure on energy is improved insulation and airtightness in order to respond to climate change, rising energy costs, and concerns about energy supply security.

Overall Energy Performance Summary*



Source

Test methods used	Importance Factor (1-5; 1=lowest, 5=highest)	Insulated Steel Stud with Masonry Veneer	Insulated Steel Stud with EIFS Cladding	Split-faced Masonry Block with interior Insulated Steel Stud Wall	Tilt-up Concrete Panels with interior Insulated Steel Stud Wall	Insulated Precast Concrete Panels	Insulated Metal Panels	Prefabricated Metal with Draped Vinyl Faced Batts
Conductance**	5	30	30	40	20	30	50	30
Infiltration***	5	30	40	20	50	50	50	10
Total		**60**	**70**	**60**	**70**	**80**	**100**	**40**

✓ **Insulated metal panels** score 100 in total energy performance.

*This information is derived from a whitepaper based on an independent study conducted by Building Science Corporation (BSC). The seven building systems chosen were tested and reviewed against a set of eleven criteria chosen for their relevance to building construction and sustainability. All information from white paper published by Building Science Corporation. To see full document please visit our website www.kingspanpanels.us/sustainability

**Conductance: Effective R-Values for entire assembly. ***Infiltration: Propensity to allow airflow across the assembly.

Kingspan
Insulated Panels

Sustainability

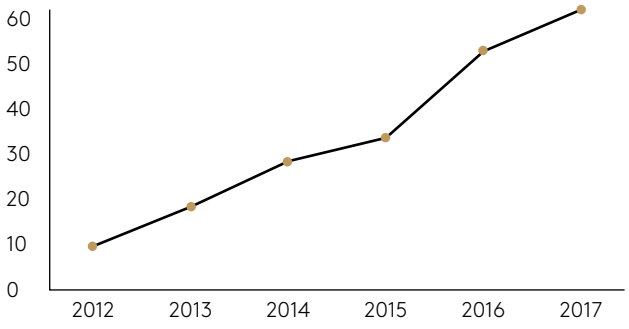
Building the Future

Kingspan Net-Zero Energy

Kingspan recognizes the significance of climate change to global society and the importance of addressing the built environment as part of efforts to lower greenhouse gas emissions. We are committed to providing solutions for our customers and addressing our own facilities.

In 2012, the Group CEO, Gene Murtagh, set the ambitious target of becoming a Net-Zero Energy (NZE) business which, in essence aims to have all facilities running on renewable power, by 2020 and expect to reach 62% by the end of 2017.

Net-Zero Energy Progression (%)



Becoming a NZE business is important to Kingspan for a number of reasons, not least as an example to our customers of what can be achieved using the Kingspan suite of technologies.

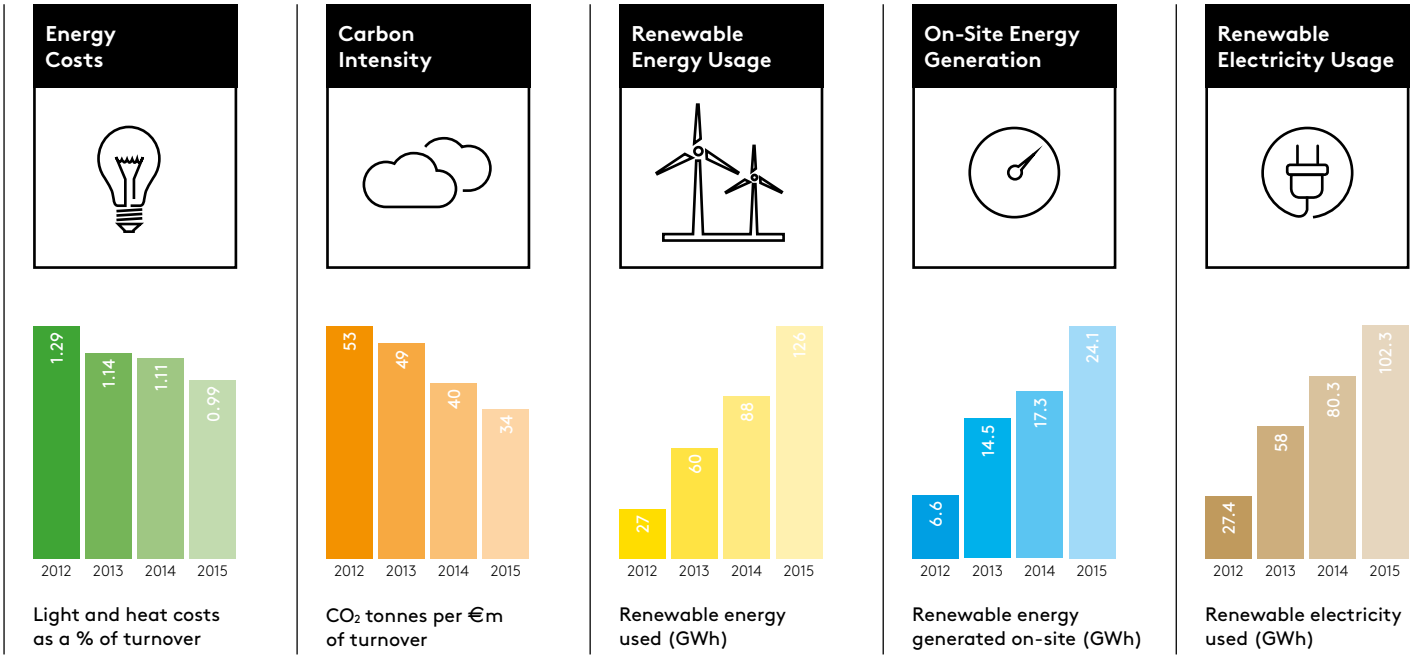
Kingspan has been identified as a global leader for its actions and strategies in response to climate change and has been awarded a position on The Climate "A" List by CDP, the international not-for-profit that measures environmental impact of thousands of companies around the world.

CDP Ireland climate change report 2014, according to the recent Globescan 'Rate the Raters' survey, is ranked as the most credible sustainability index ahead of the Dow Jones Sustainability index and the Access to Medicines index.

Kingspan is committed to measuring and reporting its Sustainability Reporting activities across all its business divisions through the following organizations:

Demonstrating an ongoing commitment to climate action.

Participant and pledged to reduce Kingspan operational Energy Intensity by 25% in 10 years. Kingspan managed to deliver a 32.4% improvement in only 4 years.



"Striving for sustainability in all our business products and operations is our corporate and personal responsibility. Kingspan aims to adopt and apply best practice sustainability principles by ensuring environmental, social and economic parameters are considered in an integrated way in product and service delivery"

Kingspan CEO Gene M.Murtagh

Material Health and Transparency

Environmental Product Declaration since 2010

Kingspan introduced their ISO 14025 Product Specific compliant EPD (Environmental Product Declaration) in 2010 as the first on its kind UL Certified Cradle to Grave EPD.

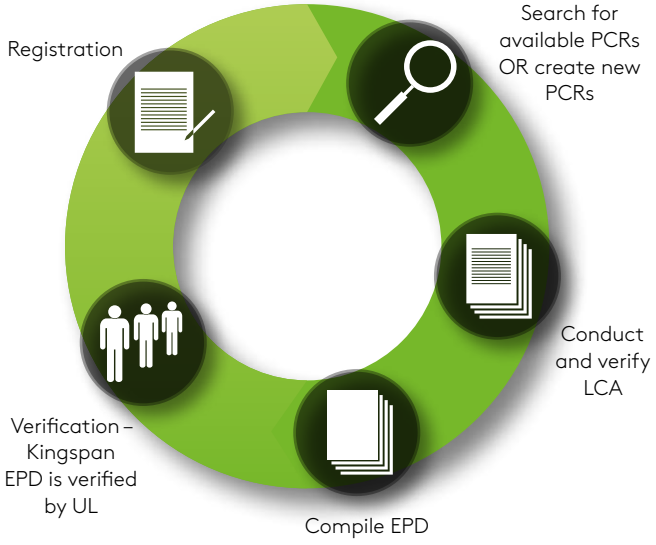
Since then Kingspan's EPD has been updated with two additional updates to include harmonization with existing EPD standards ISO 14025, ISO 21930, EN 15804 with regional specificity to North America and LEED® v4 compliant.

Goals of an EPD

EPDs provide important validated reports that allow manufacturers to objectively assess the environmental sustainability of their products, while providing buyers with clear, credible and defendable information to help make direct product category comparisons.

Development of an EPD begins with a manufacturer completing Life Cycle Assessments of their products according to ISO 14044.

In order to ensure comparable data, the LCA and EPD must be done according to industry standard* Product Category Rules (PCRs). There are five separate steps involved in the creation of an ISO 14025-compliant EPD, as illustrated in the right diagram.



* Industry standards are set by the IMP council of the Metal Construction Association (MCA).

C2C Material Health Certificate

The Material Health Certificate uses the acclaimed material health assessment methodology of the Cradle to Cradle Certified™ Product Standard to provide manufacturers with a trusted way to communicate their work towards chemically optimized products. It supports growing industry and consumer interest in:

- ◇ Knowing more about chemicals in products and supply chains;
- ◇ Avoiding chemicals of concern and shifting to inherently safer chemicals; and
- ◇ Making a commitment to continual improvement towards greener chemistry.

Living Building Challenge

In working with clients who are building to the Living Building Challenge "Petals" requirements, Kingspan was able to respond by being the first insulated panel manufacturer with polyiso insulation to eliminate HFRs (Halogenated Flame Retardants). This was the first step in moving toward a Red List Free Declare Label.

Declare and the Living Building Challenge
Declare offers a transparency platform to help project teams select materials that comply with the Health & Happiness and Materials Petals, ensuring not only the projects are free of worst-in-class toxins, but that they support a materials industry that safeguards the health of the environment and workers throughout the supply chain.

To learn more about the Living Building Challenge, visit living-future.org/lbc

LIVING BUILDING CHALLENGE™

Green Rating Systems

Contributions

Kingspan is committed to supporting green rating systems such as LEED®, the Living Building Challenge, Green Globes, BREEAM and the IGCC (International Green Construction Code – ASHRAE 189.1).

Specification of effective systems and materials are key to achieving these certifications. With this in mind, Kingspan is providing a LEED® v4 credits guide to assist the building team on how Kingspan Insulated Metal Panels may contribute to overall building performance and ratings requirements.

Visit http://www.kingspanpanels.us/sustainability/leed to download Kingspan's LEED® contribution letters for versions 3.0 (2009) and LEED® v4.

The Green Benefits of Kingspan Insulated Metal Panels

Testing and field results show that insulated metal panels (IMPs) – including Kingspan insulated metal panels – contribute to sustainability and energy efficiency in a variety of ways. Among the most noteworthy:

Interior environmental quality: delivered with "Control Wall" performance of air and moisture infiltration / exfiltration with high quality "Off-Site" constructed assemblies.

Energy efficiency: the thermal performance is delivered with Kingspan's exclusive QuadCore.

Recycled and recyclable: the exterior skins contain recycled steel, and the panels are recyclable at end of life.

Low-weight materials: IMPs weigh only 3 pounds per square foot, reducing transport and installation energy needs.

Reduced construct defects: IMPs require less trades where latent defects occur in traditional site built systems.

Life cycle benefits: Kingspan insulated metal panels last as long as the service life of a typical commercial building. The durable panels also reduce operational costs for energy and maintenance.

Green building certifications: Kingspan insulated metal panels systems contribute to various green certification programs and the path to net-zero.

Castle Square – Deep Energy Retrofit

Castle Square was certified as LEED® Platinum and won the Vanguard Award from the National Affordable Housing Management Association (NAHMA). The Vanguard Award is given each year in order "to recognize newly developed or significantly rehabbed affordable multifamily housing communities that showcase quality design and financing." Boston Mayor Thomas M. Menino presented the Castle Square Tenants Organization and Winn Development with the 2012 Green Residential Award for Sustainability/Climate Action Leadership.

Scan here to see the full case study:

LIVING BUILDING CHALLENGE · IgCC · GREEN GLOBES · LEED · bre · BREEAM®

LEED® v4 Credits

Prerequisite Integrative Process	When using an integrative process, the project team has the greatest chance of performance success. Kingspan's "energiservices", when brought in early in the preliminary design stage, can provide the project team predictive energy modeling of envelope thermal and Hygrothermal Analysis performance to assist in making more informed solutions for an optimized high performance envelope first strategy.
Sustainable Sites (SS)	
Heat Island Reduction Option 1. Non roof and Roof (2 points except Healthcare, 1 point Healthcare)	Kingspan sunscreens, grills and louvers provide shade including structures covered by solar panels that have a three-year aged solar reflectance (SR) value of at least 0.28.
Heat Island Reduction Option 2. 75% of parking spaces under cover	Kingspan has color options available with three-year aged SRI of at least 32.
Energy and Atmosphere (EA)	
Prerequisite Minimum Energy Performance Option 1. Whole-Building Energy Simulation	Kingspan's insulated metal panels potentially contribute to all envelope required energy efficiency prerequisites and minimum energy requirements as well as optimized energy efficiency. Performance energy modeling services by Kingspan's in-house Certified Energy Manager (CEM) are available on select projects to help design teams understand scenarios contributing to optimizing the energy efficiency of insulated metal panel envelop assemblies based on meeting or exceeding ASHRAE 90.1 requirements that contribute to Whole Building Energy Simulation.
Enhanced Commissioning Option 2. Envelope Commissioning (2 points)	Kingspan insulated metal panels are ideal for Enclosure Commissioning including functional mockups, field assembly testing to ensure an optimized high performance envelope following ASHRAE Guideline 0–2005 and the National Institute of Building Sciences (NIBS) Guideline 3–2012, Exterior Enclosure Technical Requirements for the Commissioning Process, as they relate to energy, water, indoor environmental quality, and durability. Note: Since the LEED® v4 publication ASTM E2813 Standard Practice for Building Enclosure Commissioning replaces ASHRAE Guideline 0–2005 and the National Institute of Building Sciences (NIBS) Guideline 3–2012.
Optimize Energy Performance Option 1. Whole-Building Energy Simulation	(1–18 points except Schools and Healthcare, 1–16 points Schools, 1–20 points Healthcare) Kingspan insulated panels, with a high performance envelope as part of a whole building design, depending on climate zone, may contribute significant points to this credit.
Renewable Energy Production	Although another division; Kingspan Energy has comprehensive engineering, installation, maintenance funding services / sources to assist in a Net-Zero Energy solutions.
Materials and Resources (MR)	
Construction and Demolition Waste	This Credit is intended to reduce construction and demolition waste disposed of in landfills and incineration facilities by recovering, reusing, and recycling materials and requires development and implementation of a construction and demolition waste management plan. While not a direct contribution to the credit, Kingspan's "Off-Site" manufactured insulated metal panels avoid much of the construction waste associated with Traditional Site built multicomponent systems.
Management Planning Building Life-Cycle – Impact Reduction Option 1. Historic Building Reuse	Kingspan's Insulated metal panels have been designed into historical preservation projects as the interior insulation and weather tight wall system while maintaining the original exterior.
Option 2. Renovation of Abandoned or Blighted Building (5 points BD+C)	BENCHMARK By Kingspan insulated metal panels are ideal for recladding projects when the existing building exterior is beyond cost effective repair and performance but the structure still has good "bones".
Option 4. Whole-Building Life-Cycle Assessment (3 points)	Kingspan contributes to this credit by posting their Environmental Product Declaration – LCA product information to databases such as the NREL LCI, Athena EcoCalculator and Talley that are used in conjunction for Whole-Building Life Cycle Assessment.
Building Product Disclosure and Optimization	
Option 1. Environmental Product Declaration (EPD)	Kingspan' Product Specific EPD (Environmental Product Declaration) conforms to ISO 14025, 14040, 14044, and EN 15804 and ISO 21930 with a Cradle to Grave scope.

Sourcing of Raw Materials	
Option 1. Raw Material Source and Extraction Reporting	Kingspan at this time can report where the steel coils are manufactured.
Recycled content	Below is an example of how Kingspan reports recycled content based on the Steel Recycling Institute's guidelines. Data needed to run calculation include: • Thickness of panel • Gauge of exterior skin • Gauge of interior skin • Total panel cost • Where the steel was produced* Specific recycled content of the steel can be verified with a letter from the steel supplier upon request Note: for most accurate reporting specific coil information is required and typically not available until job is "run". Any information prior to the "run" is a best estimate.

Assembly Components:	Weight (lbs/sq.ft.)	% PC	% PI
Steel Facings	2.475	17%	14%
Polyisocyanurate Core	0.525	0%	0%
Totals:	3.00	17%	14%

Kingspan also uses the Steel Recycling Institutes defaults for recycling when specific coil data is not available

Building Product Disclosure and Optimization	
Health Product Declaration (HPD)	Kingspan has conducted HPD 1.0 & 2.0 – Health Product Declaration with a third party consultant. These reports are available on a per project basis.
Materials and Resources credit Construction and Demolition Waste Management Option 1. Diversion	Kingspan IMPs are "Off-Site" prefabricated panels that eliminate related construction site waste with the exception of packaging materials that can be source separated on the job site. The prefabricated materials greatly reduce waste compared to construction site built systems. Kingspan also has a Global zero landfill goal and is very close to that objective at the manufacturing operations.
Sourcing of Raw Materials Material Ingredients Option 3	Kingspan is part of the LEED® Field Test Phase One (Desktop Evaluation) of Building Disclosure and Optimization: Material Ingredients Option 3 Guidance Document. This guidance proposes building on programs that many companies already have in place, specifically environmental management systems (EMS) such as ISO 14001 and health and safety management systems such as OHSAS 18000 to meet and document compliance with Option 3. This is intended to create commitment toward continual improvement within their supply chain. Kingspan along with upstream suppliers are engaged in discussions regarding disclosure of ingredients or components that are significant health hazards.
Indoor Environmental Quality (EQ)	Low-Emitting Materials Kingspan will provide adhesives and gaskets LEED® compliance sheets from suppliers upon request. Contact your sales or customer service representative.
Innovation (IN)	If reducing construction waste, less environmental impacts on the construction site and the surrounding community, faster time to market, optimized quality control of high performance systems and assemblies, resource efficiency, less construction errors, improved scheduling, and building and material life cycle performance are critical to your project concepts; then the Environmental and Sustainability benefits of "Off-Site" Prefabrication of materials and systems should be a consideration. Environmental Benefits of "Off-Site" Prefabricated Materials, should be a consideration for your "Integrative" Design Process a LEED® prerequisite. LEED® v4 more than previous versions provides an opportunity to expand material evaluation and specification of systems and assemblies earlier in the project as part of the integrative design process. "Off-Site" prefabrication potentially contributes to Site, Energy & Atmosphere, Water, Materials & Resources, Indoor Environmental Quality and Innovation LEED® credits.
Ideal approach for an Innovation credit – Regional Priority	IMPs are ideal for locations where the region presents a challenge in getting site built systems into a geographic location. The "Off-Site" factory prefabricated assemblies work for both remote sites far from resources as well as inner site projects where material storage is a premium. IMPs install in about half the time of site built systems.

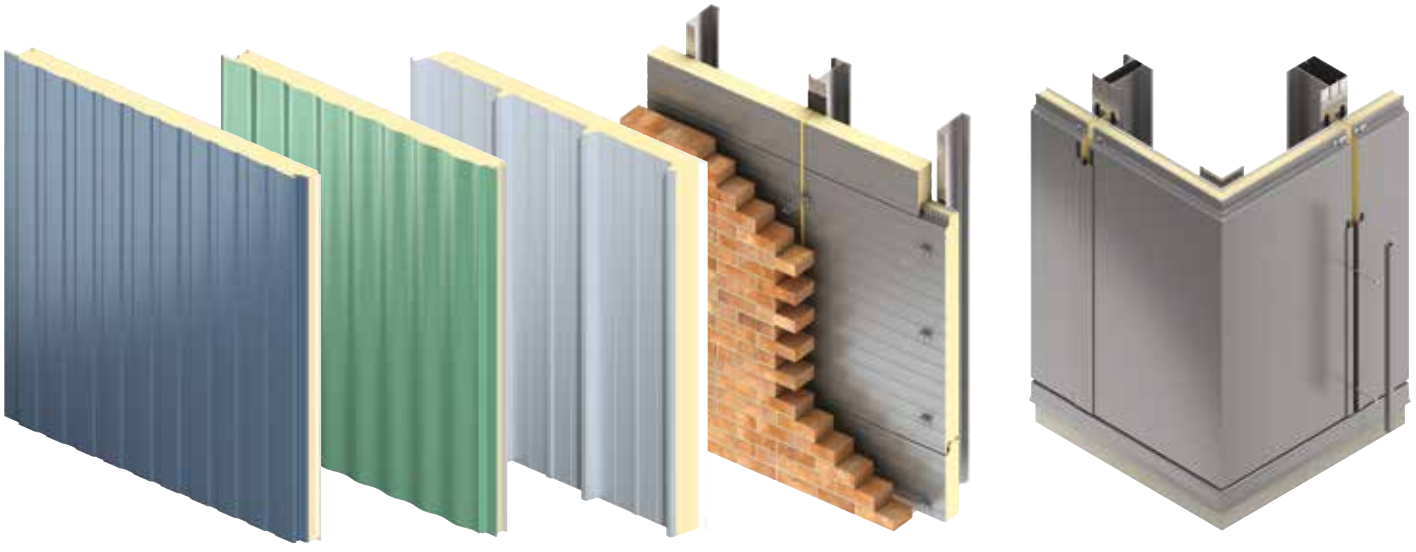
Designing for Aesthetics and Performance

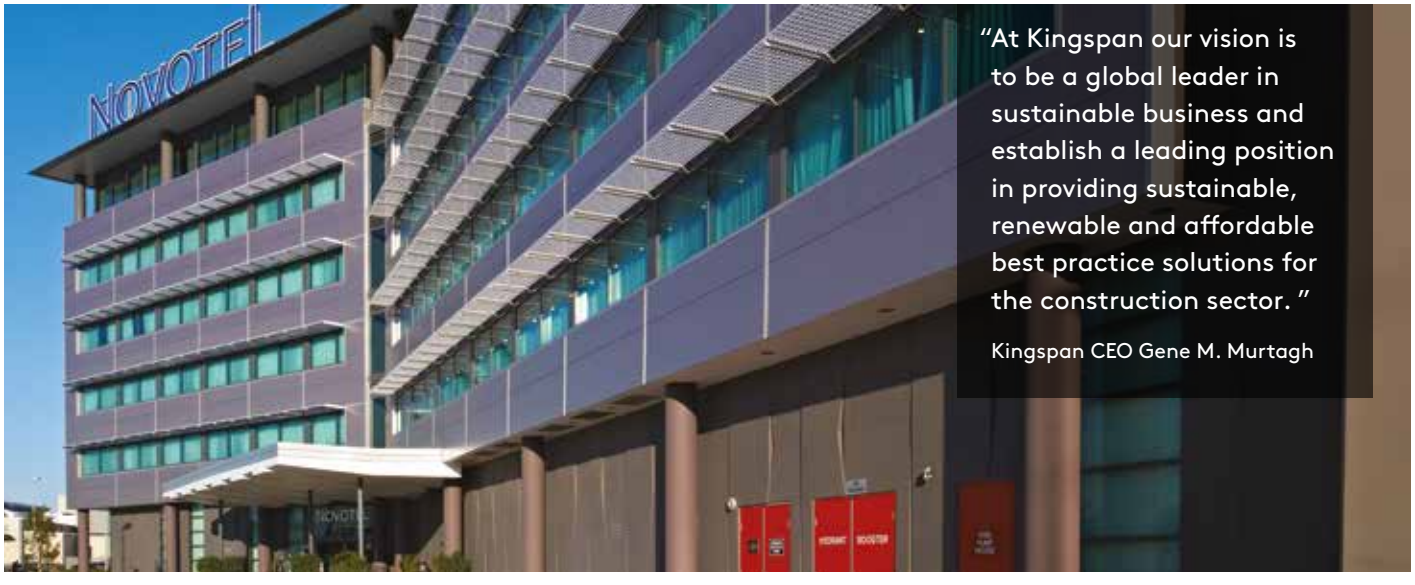
Kingspan Insulated Metal Panels bring together all the design elements to help you create stunning wall façades to suit your building design specifications.

From concept through to completion we're here to support your projects with design, technical and installation services. By choosing Kingspan you have the quality assurance of one of the most trusted names in the construction market – Kingspan.

Climate change, focus on human health and environmental quality issues are becoming a bigger factor than energy costs in driving net-zero achievement for low carbon high performance buildings and their related carbon footprint.

Kingspan's EnvelopeFirst™ Energy Efficiency approach to design focuses on enclosure performance, including durability, airtightness, and better moisture and thermal continuity. Building professionals are choosing insulated metal panels (IMPs).





"At Kingspan our vision is to be a global leader in sustainable business and establish a leading position in providing sustainable, renewable and affordable best practice solutions for the construction sector. "

Kingspan CEO Gene M. Murtagh

Tools and Techniques for Green Design

After site choice and massing, the building envelope is the main challenge for sustainability, according to the Pew Center on Global Climate Change. Heating and cooling account for significant end-use energy consumption, and the walls, roof, foundation and windows determine how much energy is needed to keep indoor spaces comfortable.

It's no surprise that today's energy codes and standards place ever-greater emphasis on the envelope. Among the top concerns:

- ◇ Airtightness
- ◇ Weathertightness
- ◇ Insulation continuity: building scientists and sustainability experts consider the continuity of the thermal envelope to be the best design practice.

ASHRAE 90.1 has been continuously working to improve the envelope energy performance of commercial buildings and has been part of the generation of IEEC codes.

Improving Building Envelope with Optimized Thermal Performance

The Most Improvement for the Least Cost

What's the most valuable technology solution for reducing global greenhouse gases? Not photovoltaics or green roofs, according to one McKinsey Global Energy and Materials report, but rather improving the building skin with an energy efficient envelope is a cost effective consideration with substantiated ROI.

Energy efficiency and thermal continuity is at the core of Kingspan panels: They provide aesthetically appealing envelope solutions with high performance U-Values. The factory installed rigid insulation core is encapsulated by metal skins (interior/exterior) for durable service life.

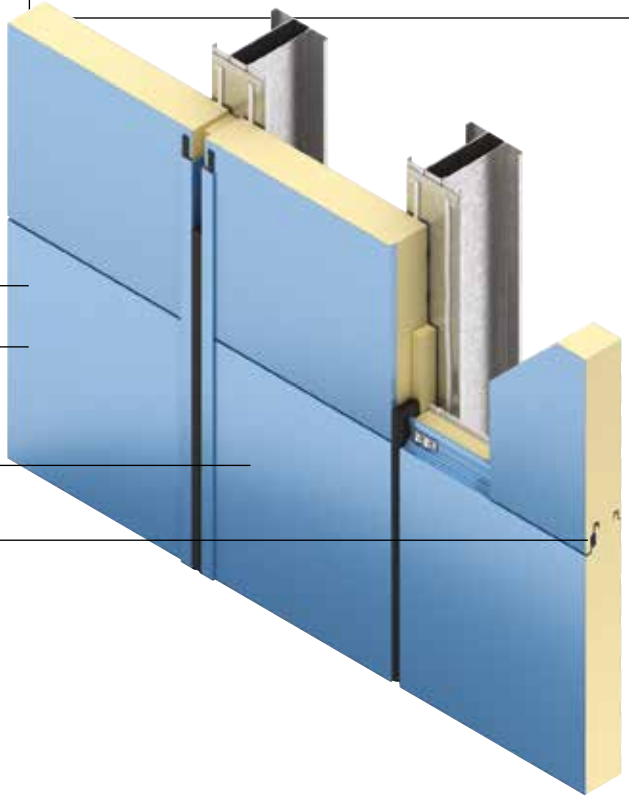
Benchmark IMPs are thermally efficient because:

1 Excellent thermal continuity.

2 The rigid insulation maintains thermal efficiency loss caused by compression of some traditional site installed insulation materials.

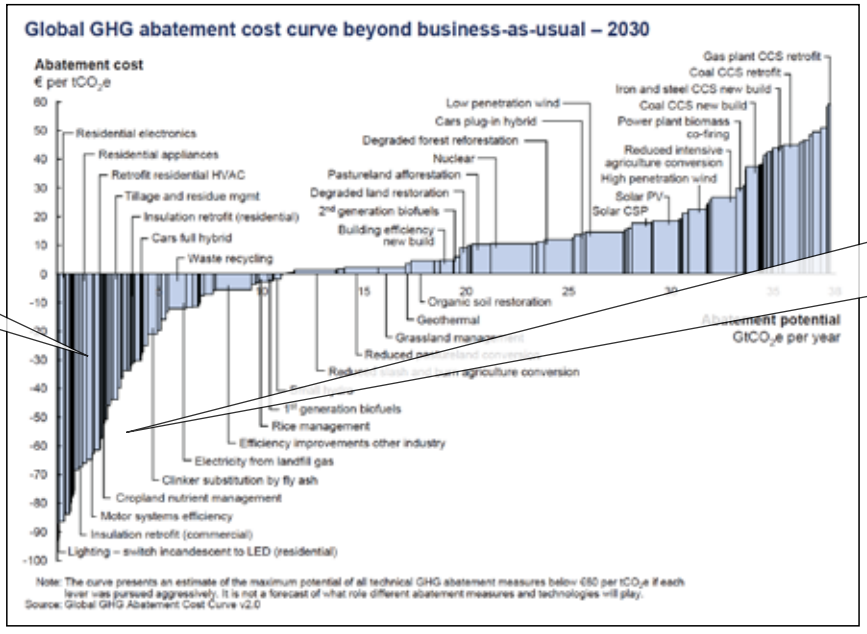
3 Insulation is on the outside of the building structure, preventing transfer of heat and cold through framing.

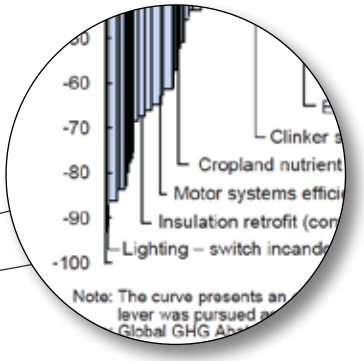
4 Kingspan Panels are rigorously tested to ensure that they remain both airtight and weathertight over the life of a building.



"What's the most valuable technology solution for reducing global greenhouse gases?"

EnvelopeFirst™





"… EnvelopeFirst™ strategy is a significantly cost effective solution to reduce energy and greenhouse gases."

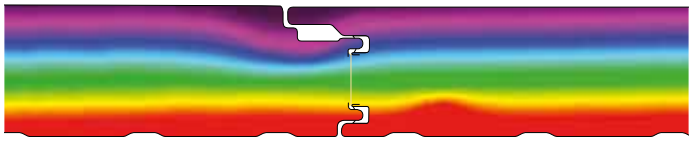
Seattle Commercial Hangar, Seattle, WA.

Design Assist Services

The support of upfront thermal analysis through Kingspan's Design Assist Services will provide design teams important performance scenarios to assist in making more informed upfront project decisions.

There is proven performance of envelope first energy efficiency of the opaque walls. Examples include insulated panels, window integration / penetrations / airtightness / thermal bridges and interfaces. The building fabrics are part of the whole building envelope that can provide up to 30% of energy cost savings and related GHG reductions depending on climate zones. Extreme temperatures can also be modeled to predict performance requirements for "Resilience".

Kingspan's thermal analysis' are conducted under the supervision of a Certified Energy Manager according to ASHRAE standards. Energy efficiency can also be reasonably translated into emissions avoidance, including using EPA-developed tools. Further, actual power sector emissions data will allow states, markets, utilities and private sector actors to improve their quantification as well as their programs.



EnvelopeFirst™ Energy Efficiency

Pathway to net-zero to reduce demand side energy and greenhouse gases

ENVELOPEFIRST™ ENERGY EFFICIENCY

OPTIMIZE ENERGY CONSERVATION MEASURES

RENEWABLES TO ACHIEVE NET-ZERO ENERGY

DEMAND SIDE ENERGY AND GHG REDUCTION

Opaque walls are responsible for about 14% of the energy consumed in existing commercial buildings in the US. Air leakage through the building enclosure is responsible for about 10% of the energy consumed in existing buildings in the US (4 quads / year). The building envelope also accounts for a large portion of all materials and related resource depletion inherent in traditional site built systems.

Kingspan's EnvelopeFirst™ energy efficiency is a first step strategy for designing a low carbon high performance building's thermal performance and contribution to a Net-Zero Energy target.

Kingspan insulated metal systems feature a unique core of QuadCore insulation for industry leading R/U-values with superior airtightness performance and fire performance compliance.

Quadcore R/U values

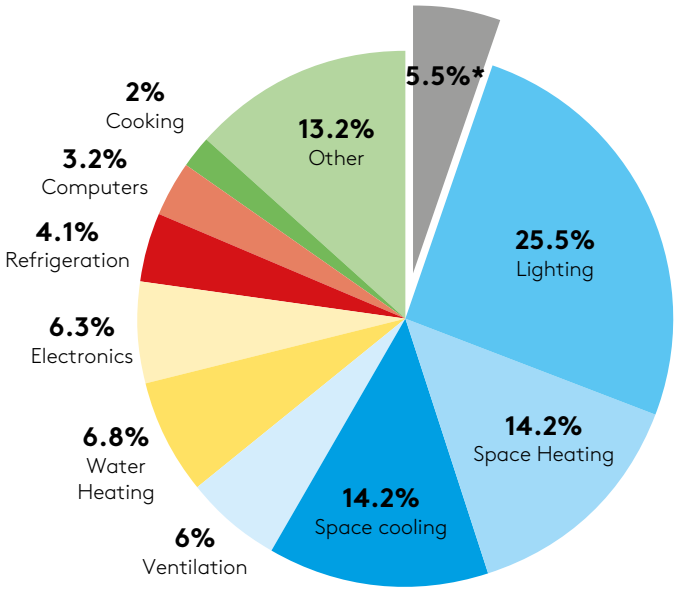
Based on C518 insulation R-value of R-8 per inch achieved in UK and assuming similar C1363 assembly results.

	2″	3″	4″	5″	6″
C518 R-value	R-16	R-24	R-32	R-40	R-48
C1363 U-factor	0.079	0.048	0.031	0.025	0.021

Air sealing

Tested ASTM E283 air infiltration (KS panel):
0.003 CFM/sqft @ 10 psf
0.006 CFM/sqft @ 20 psf

Commercial Primary Energy End-Use Splits, 2005



* The pie chart includes 1 quad of energy (5.5%) that is a statistical adjustment by the Energy Information Administration to reconcile two divergent data sources.

Kingspan insulated panel systems provides interior environmental quality and "Control Wall" performance of air and moisture infiltration / exfiltration with "Off-Site" manufactured assemblies.

The Building Envelope impacts interior loads by over 50%

EnvelopeFirst™

Faster build speed

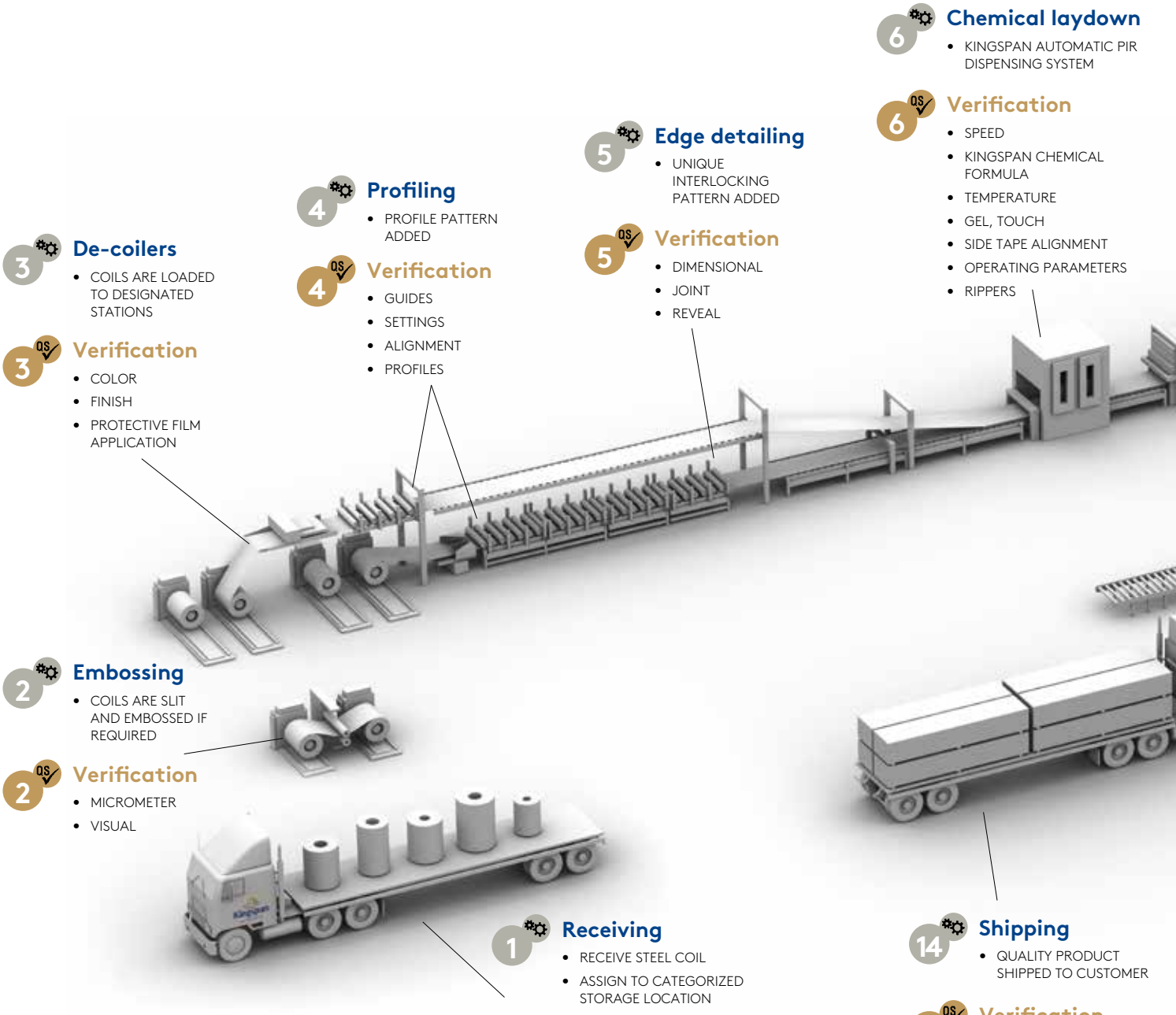
The rapid build times associated with our systems meant that the 936,460 sqft roof of a recent project was completed in just nine weeks.

50% faster build speed

"Off-Site" construction of the assemblies offers the following advantages when compared to traditional multi component "Site-Built" construction:

- ◇ Higher quality control
- ◇ Virtually no construction waste
- ◇ Kingspan's zero waste mandate
- ◇ Faster build speeds
- ◇ Trained specialized installers
- ◇ Less trades that impact latent defects due to poor constructions
- ◇ High thermal performance with exclusive QuadCore technology with R-8 per inch
- ◇ Non-ozone depleting as installed end product
- ◇ Recycled content and recyclable at end of life to avoid the landfill
- ◇ Halogenated flame retardant FREE

Continuous Production Line



1 Receiving
- RECEIVE STEEL COIL
- ASSIGN TO CATEGORIZED STORAGE LOCATION

1 Verification
- COIL WIDTH, THICKNESS
- BEND, PENCIL, CROSS HATCH, IMPACT, MEK, GLOSS LEVEL

2 Embossing
- COILS ARE SLIT AND EMBOSSED IF REQUIRED

2 Verification
- MICROMETER
- VISUAL

3 De-coilers
- COILS ARE LOADED TO DESIGNATED STATIONS

3 Verification
- COLOR
- FINISH
- PROTECTIVE FILM APPLICATION

4 Profiling
- PROFILE PATTERN ADDED

4 Verification
- GUIDES
- SETTINGS
- ALIGNMENT
- PROFILES

5 Edge detailing
- UNIQUE INTERLOCKING PATTERN ADDED

5 Verification
- DIMENSIONAL
- JOINT
- REVEAL

6 Chemical laydown
- KINGSPAN AUTOMATIC PIR DISPENSING SYSTEM

6 Verification
- SPEED
- KINGSPAN CHEMICAL FORMULA
- TEMPERATURE
- GEL, TOUCH
- SIDE TAPE ALIGNMENT
- OPERATING PARAMETERS
- RIPPERS

14 Shipping
- QUALITY PRODUCT SHIPPED TO CUSTOMER

14 Verification
- LOAD CHECK
- PHOTOS

7 Lamination

- CONTINUAL PRESSING OF PIR PANEL WHILE REACTION TAKES PLACE

7 Verification

- SIDE BLOCKS
- WIDTH
- SHIMS

8 Saw operation

- PANELS ARE CUT TO LENGTH ACCORDING TO CUSTOMER REQUIREMENTS

Verification

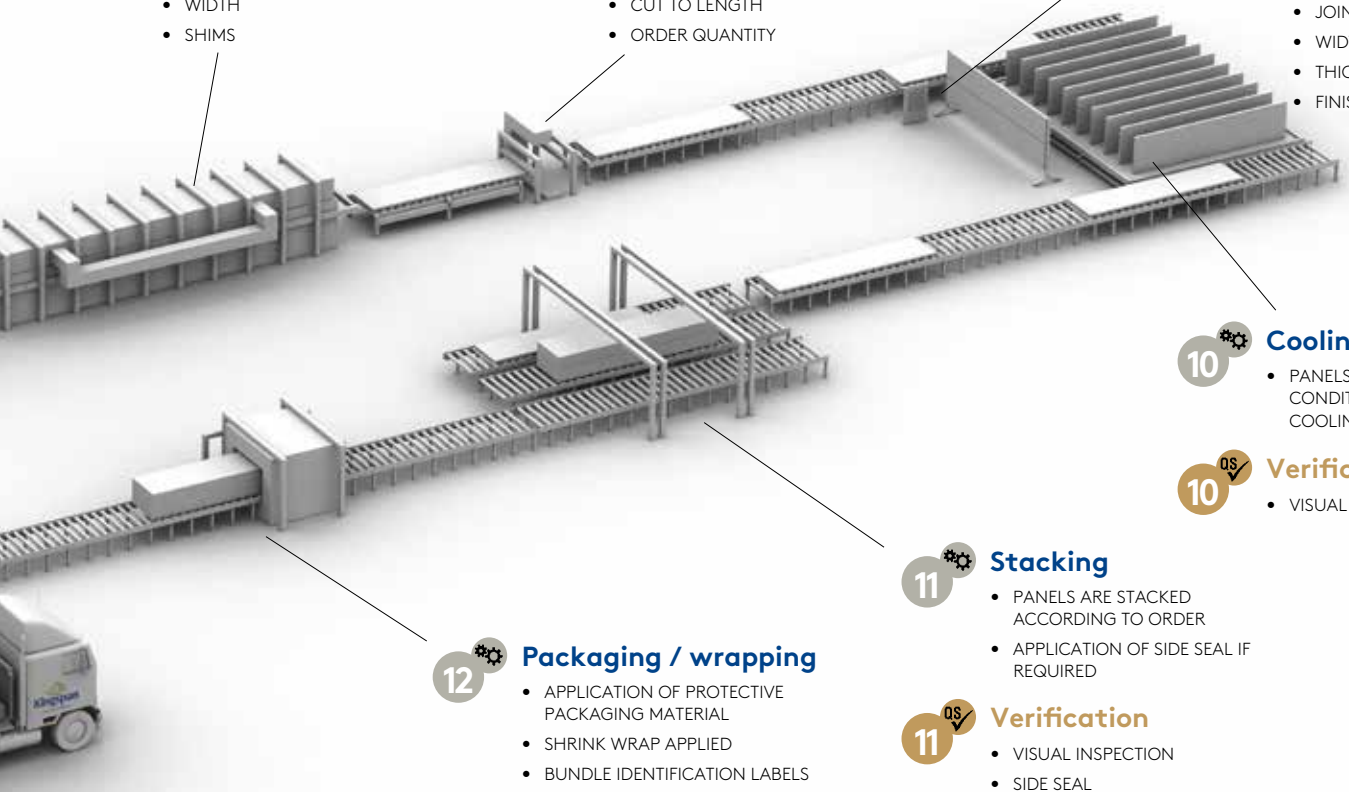
- ID TAG APPLICATION
- CUT TO LENGTH
- ORDER QUANTITY

9 Inspection station

- PANELS ARE INSPECTED TO QS PROCEDURES

9 Verification

- HOT CHECKS
- DIMENSIONAL ACCURACY
- JOINT / REVEAL
- WIDTH
- THICKNESS
- FINISH



10 Cooling

- PANELS ARE ALLOWED TO CONDITION IN CONTROLLED COOLING SYSTEM

10 Verification

- VISUAL INSPECTION

11 Stacking

- PANELS ARE STACKED ACCORDING TO ORDER
- APPLICATION OF SIDE SEAL IF REQUIRED

11 Verification

- VISUAL INSPECTION
- SIDE SEAL
- SIDE TAPES

12 Packaging / wrapping

- APPLICATION OF PROTECTIVE PACKAGING MATERIAL
- SHRINK WRAP APPLIED
- BUNDLE IDENTIFICATION LABELS

12 Verification

- CORRECT BUNDLE ASSIGNMENT
- VISUAL
- CUSTOMER CHECK

13 Post production

- PANELS ARE STORED AND RANDOMLY CHECKED AT SET INTERVALS

13 Verification

- DIMENSIONAL
- CONDITION
- VISUAL

Active industry participation

National Institute of Building Sciences

The American Institute of Architects

ASTM International

U.S. Green Building Council Member

ASHRAE Shaping Tomorrow's Built Environment Today

Green Building Initiative

CSI

CSC

Product Range

Products at a Glance

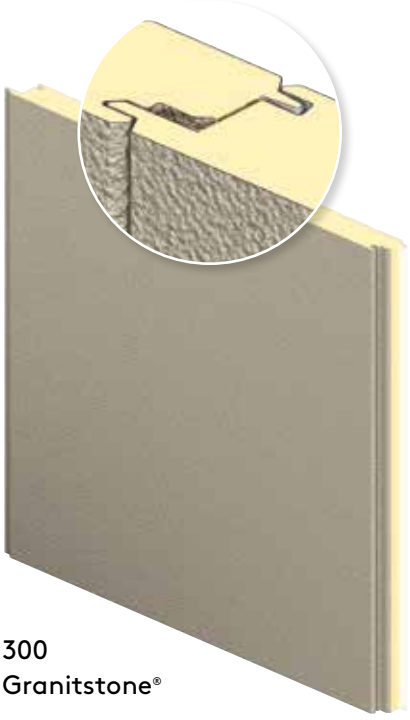
Wall – Vertical Application

200
Inverted Rib

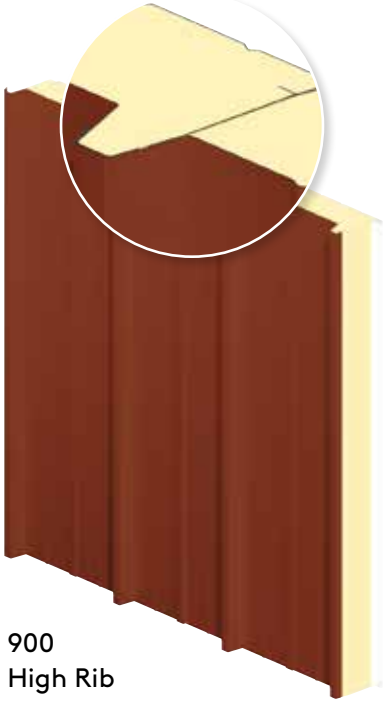
300
Minor Rib

300 Azteco®
Embossed

300
Striated



300
Granitstone®

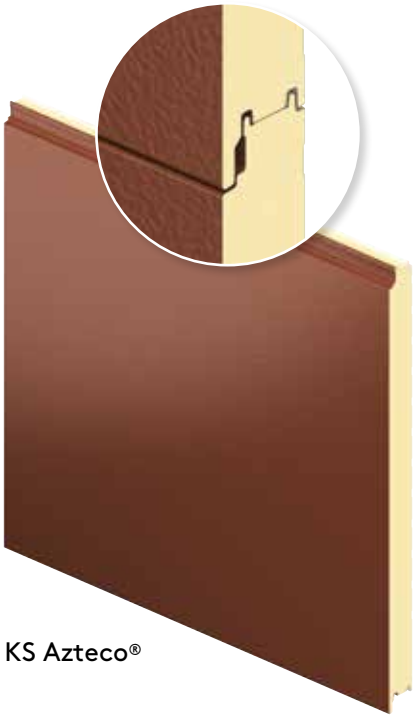


900
High Rib

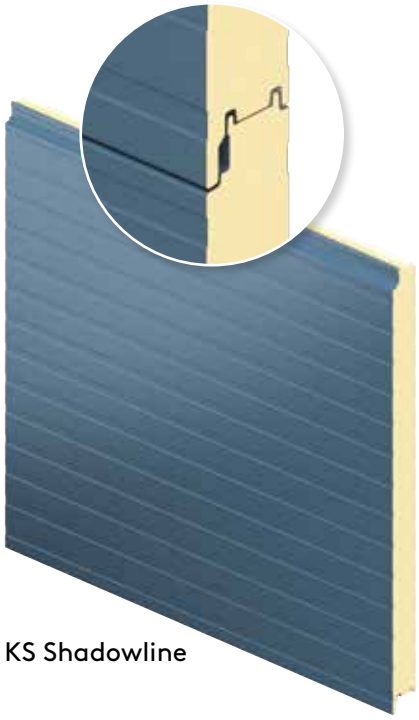

Cumberland
FARMS

Products at a Glance

Wall – Vertical and Horizontal Application



KS Azteco®

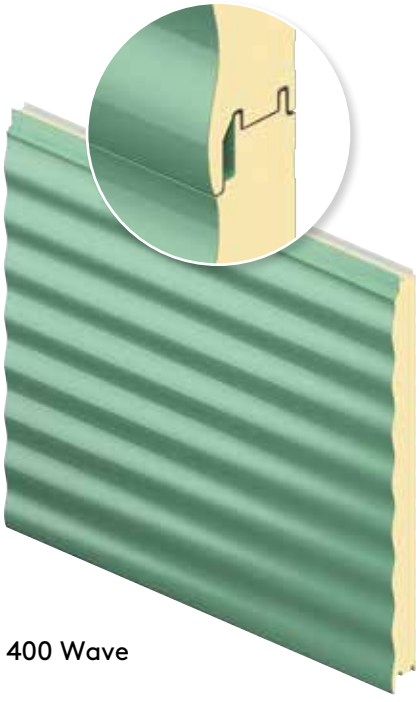


KS Shadowline

KS Mini
Micro-Rib

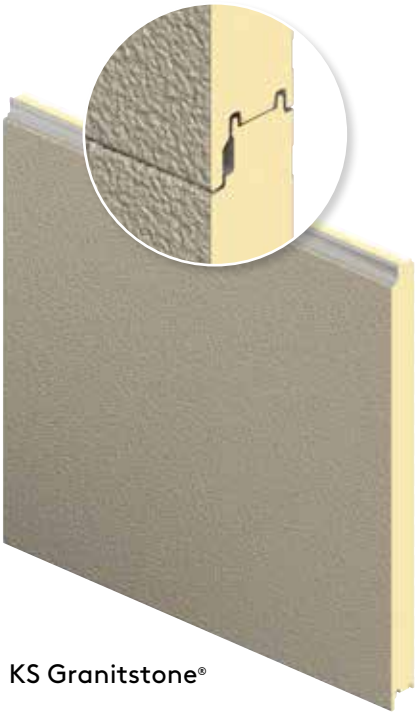
KS Micro-Rib

KS Mini-Wave

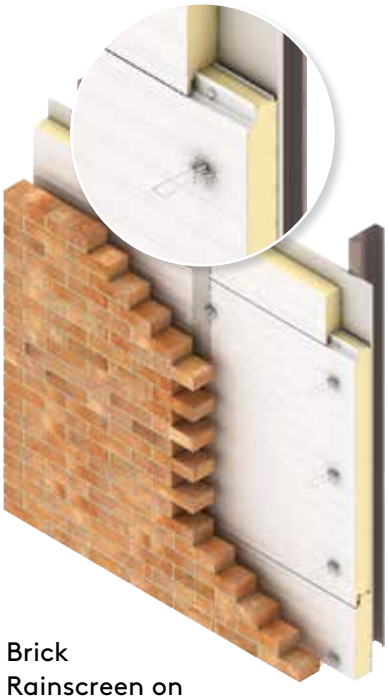


400 Wave

Wall with Façade

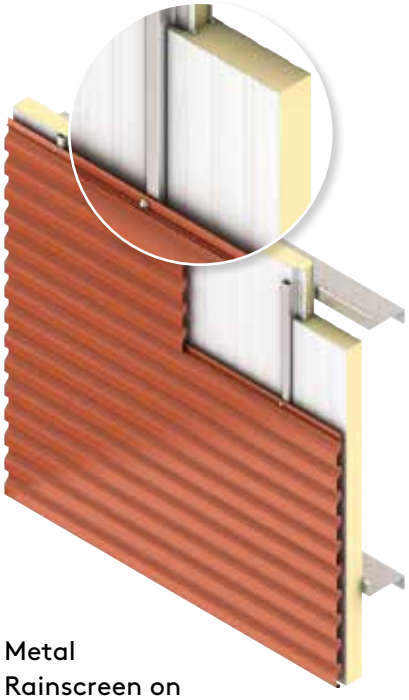


KS Granitstone®



Brick
Rainscreen on
KarrierPanel™

Optimo™



Metal
Rainscreen on
KarrierPanel™

Products at a Glance

Wall Systems – Horizontal and Vertical Application

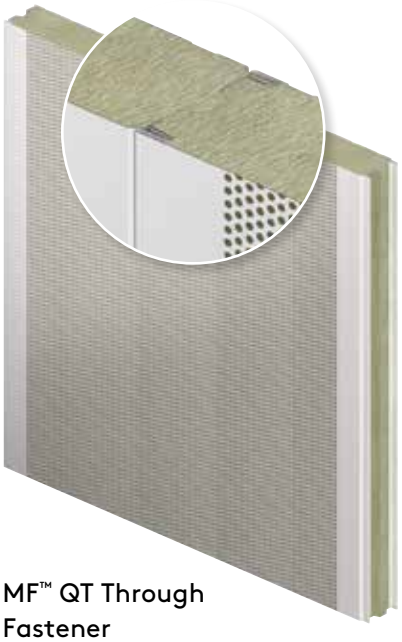
Mineral Fiber Core

MF™ Through Fastener
(Interior & Exterior)

MF™ Hidden Fastener
(Interior & Exterior)

FireRated

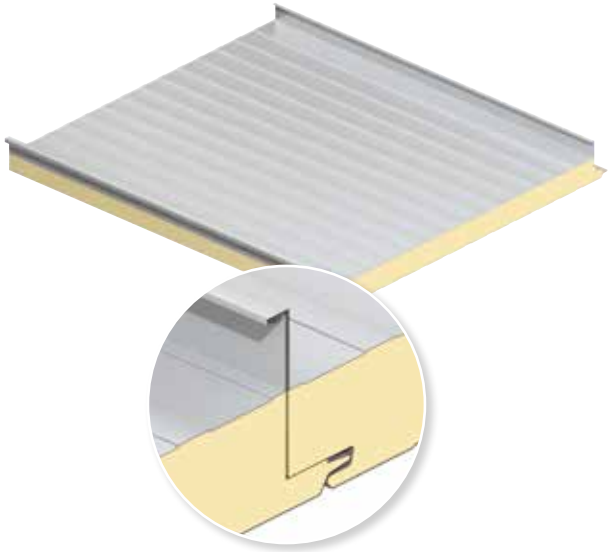
1 HOUR
2 HOURS
3 HOURS



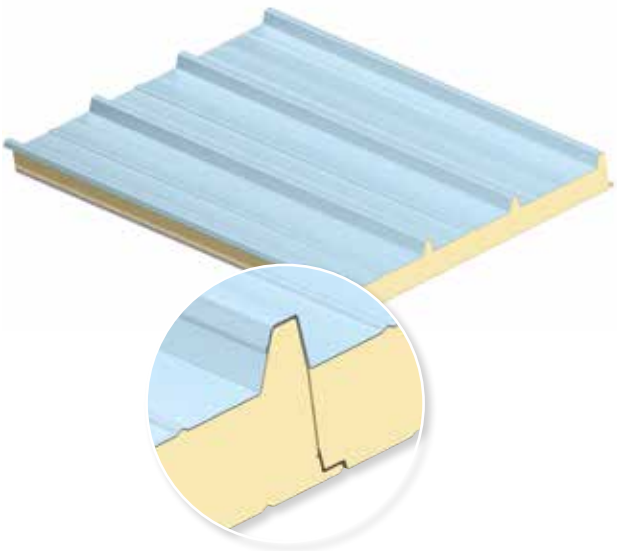
MF™ QT Through Fastener
(Interior & Exterior)

MF™ QT Hidden Fastener
(Interior & Exterior)

Roof



KingZip™



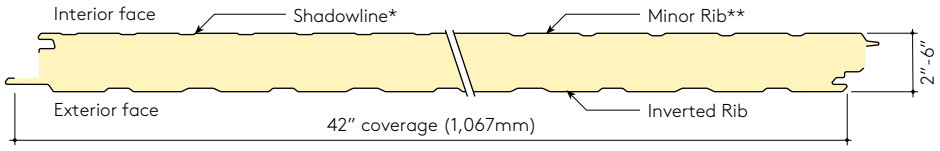
900 High Rib

Gulfstream Building 6003,
Savannah, GA.

200 Inverted Rib

The 200 Inverted Rib profile of the series is a highly attractive complement to any building system and is the panel of choice for high R-value exterior applications. The interior face features a minor rib profile providing a clean, flat appearance that is easily washable.

200 Inverted Rib



Product Specifications

Exterior Profile:	Inverted Rib with stucco embossing[1]
Interior Profile:	Shadowline or Minor rib with stucco embossing[1]
Exterior Gauge:	26, optional 24 or 22
Interior Gauge:	26, optional 24 or 22
Widths:	42"
Reveal Options:	N/A
Lengths:	8' to 53'
Thicknesses:	2", 2.5", 3", 4", 5" and 6"
Exterior Finish:	1.0 mil. Kynar (70% PVDF)
Interior Finish:	1.0 mil. Polyester (Imperial White)
Post Fabrication:	N/A
R-value:	≈ 7.2 per inch per ASTM C518 @ 75ºF

200 Inverted Rib is ideal for new and retrofit applications across commercial, industrial and cold storage market sectors.

200 Inverted Rib Applications

Vertical

Standard Joint

Corner with trim

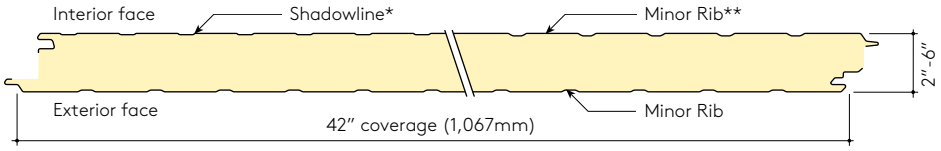
*Manufactured in Deland. ** Manufactured in Modesto. [1]Optional non-embossed. 200 Inverted Rib is only available in the US.

Reser's Fine Foods,
Hillsboro, OR.

300 Minor Rib

300 Minor Rib panels are a highly versatile and attractive exterior wall cladding system. Both interior and exterior facings feature the same minor rib profile that provides a clean, flat appearance and is easily washable.

300 Minor Rib



Product Specifications

Applications:	Interior liner panels, partitions, ceilings
Exterior Profile:	Minor Rib with stucco embossing[1]
Interior Profile:	Shadowline or Minor Rib with stucco embossing[1]
Exterior Gauge:	26, optional 24 or 22
Interior Gauge:	26, optional 24 or 22
Widths:	42"
Lengths:	8' to 53'
Thicknesses:	2", 2.5", 3", 4", 5" and 6"
Reveal Options:	N/A
Exterior Finish:	1.0 mil. Kynar (70% PVDF)
Interior Finish:	1.0 mil. Polyester (Imperial White)
Post Fabrication:	N/A
R-value:	≈ 7.2 per inch per ASTM C518 @ 75ºF

300 Minor Rib panels are suitable for new and retrofit applications across the cold storage, commercial and industrial market sectors.

300 Minor Rib Applications

Vertical

Standard Joint

Corner with trim

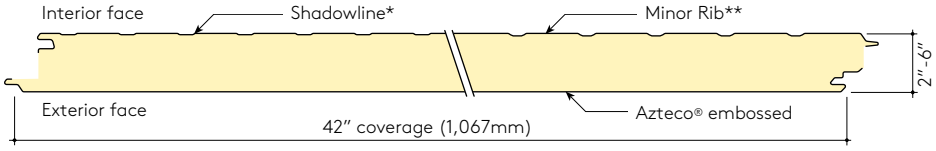
*Manufactured in Deland. ** Manufactured in Modesto. [1]Optional non-embossed. 300 Minor Rib is only available in the US.

Lock Up Self Storage,
Pearl City, HI.

300 Azteco® Embossed

300 Azteco® Embossed panels provide the look of masonry stucco for the cost of a metal panel. The flush profile is flat with no striations or ribbing, and is the most economical flat wall panel available. The interior face features a minor rib profile providing a clean, flat appearance that is easily washable. Standard reveals are 1/8" for vertical applications, and 3/8" for horizontal applications.

300 Azteco® Embossed



Product Specifications

Exterior Profile:	Flat with Azteco embossing
Interior Profile:	Shadowline or Minor Rib with stucco embossing[1]
Exterior Gauge:	24 or optional 22
Interior Gauge:	26, optional 24 or 22 gauge
Widths:	42"
Reveals:	N/A
Lengths:	8' to 53'
Thickness:	2", 2.5", 3", 4", 5", 6"
Exterior Finish:	1.0 mil. Kynar (70% PVDF)
Interior Finish:	1.0 mil. Polyester (Imperial White)
Post Fabrication:	N/A
R-value:	≈ 7.2 per inch per ASTM C518 @ 75ºF

300 Azteco® Embossed is ideal for new and retrofit applications across commercial and industrial market sectors.

Azteco is also available in our KS Series. Product availability varies by region. Please speak to a Kingspan team member for more details.

300 Azteco® Embossed Applications

Vertical

Standard Joint

Corner with trim

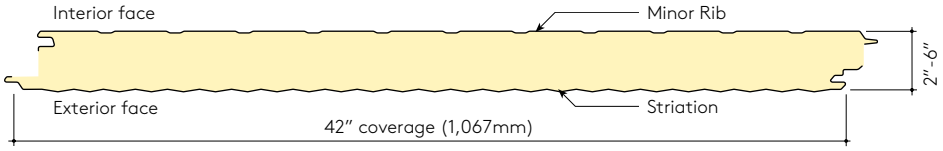
*Manufactured in Deland. ** Manufactured in Modesto. 'Optional non-embossed. 300 Azteco Embossed is only available in the US.

Ketchikan Shipyard, Ketchikan, AK.

300 Striated

The 300 Striated profile create an architectural look with subtle shadows. The nearly flat profile creates a highly attractive linear appearance with striking aesthetic appeal and excellent thermal performance. It is expressly designed for the upscale architectural and commercial / industrial market sectors.

300 Striated



Available in stucco embossed or smooth finish (minimum 24 gauge required for smooth).

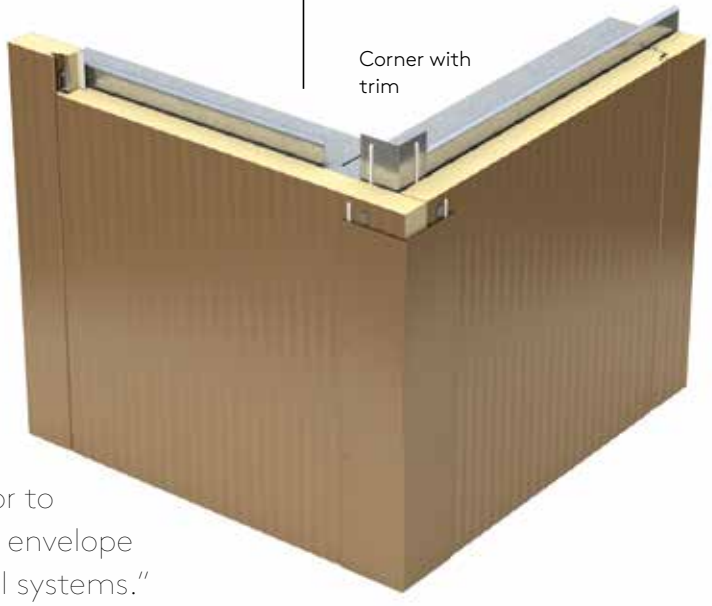
Product Specifications

Exterior Profile:	Striated with stucco embossing[1]
Interior Profile:	Minor Rib with stucco embossing[1]
Exterior Gauge:	26, optional 24 or 22
Interior Gauge:	26, optional 24 or 22
Widths:	42"
Lengths:	8' to 53'
Thickness:	2", 2.5", 3", 4", 5" and 6"
Reveals:	N/A
Exterior Finish:	1.0 mil. Kynar (70% PVDF)
Interior Finish:	1.0 mil. Polyester (Imperial White)
Post Fabrication:	N/A
R-value:	≈ 7.2 per inch per ASTM C518 @ 75ºF

300 Striated Applications

Vertical

Standard Joint



Corner with trim

"300 Striated provides superior levels of thermal (R-value) and airtightness performance over the service life of the building. The insulation is exterior to the building structure to provide the best thermal envelope by reducing thermal bridging typical of cavity wall systems."

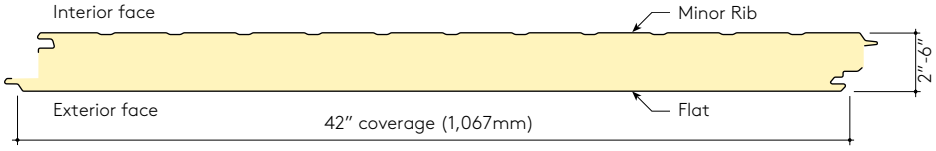
[1]Optional non-embossed. 300 Striated is only available in the US.

Beckwith Veterinary Hospital,
Modesto, CA.

300 Granitstone®

300 Granitstone® combines the many advantages of lightweight insulated panels with the aesthetics of stucco or natural stone. Panels resemble stucco, and use an acrylic aggregate finish factory-applied over primed steel facings. Granitstone® Quartz panels provide the ultimate in natural stone appearance. Panels are also available in striated profile.

300 Granitstone®



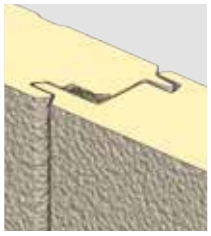
Product Specifications

Exterior Profile:	Flat with Azteco embossing (optional exterior profile: 300 Striated with stucco embossing)
Interior Profile:	Minor Rib with stucco embossing[1]
Exterior Gauge:	24 or optional 22
Interior Gauge:	26, optional 24 or 22
Widths:	42"
Reveal Options:	N/A
Lengths:	8' to 40'
Thicknesses:	2", 2.5", 3", 4", 5", 6"
Exterior Finish:	Silica aggregate with acrylic binder (optional quartz aggregate)
Interior Finish:	1.0 mil. Polyester (Imperial White)
Post Fabrication:	N/A
R-value:	≈ 7.2 per inch per ASTM C518 @ 75ºF

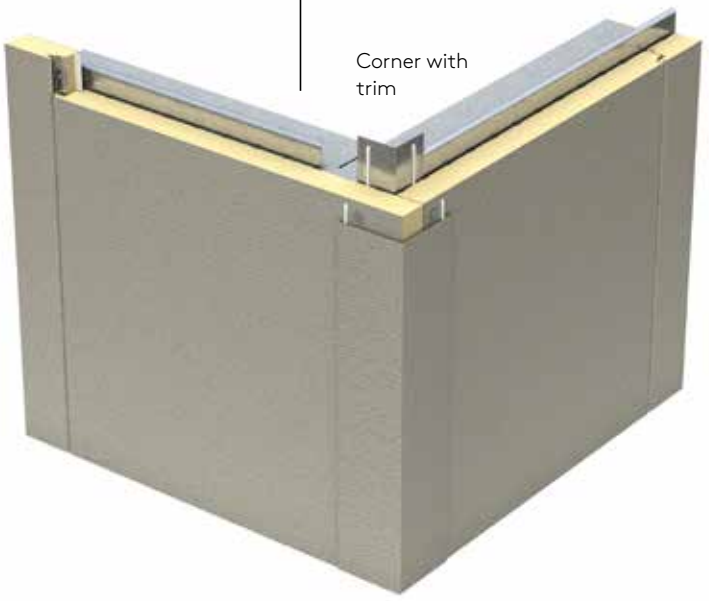
The interior face features a Minor Rib profile providing a clean, flat appearance that is easily washable.

300 Granitstone® Applications

Vertical



Standard Joint



Corner with trim

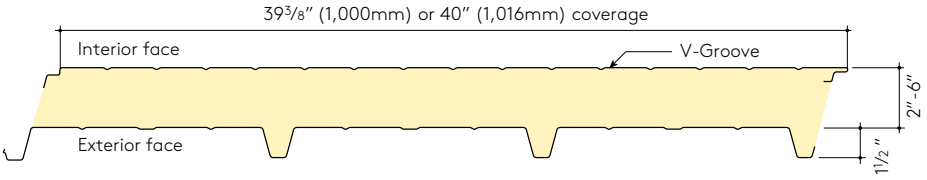
[1]Optional non-embossed. 300 Granitstone® is only available in the US.

Bale Breaker Brewery, Yakima, WA.

900 High Rib

High Rib panels' design provides maximum strength characteristics and with superior spanning capability, allows for reduced secondary steel supports.

900 High Rib



Product Specifications

Exterior Profile:	High Rib profile with stucco embossing[1]
Interior Profile:	V-groove with stucco embossing[1]
Exterior Gauge:	26, optional 24 or 22 gauge
Interior Gauge:	26, optional 24 or 22 gauge
Widths:	39-³/₈" (Modesto), 40" (Deland)
Reveal Options:	N/A
Lengths:	8' to 54' (Modesto), 46' (Deland)
Thickness:	2", 2,5", 3", 4", 5" and 6"
Exterior Finish:	1.0 mil. Kynar (70% PVDF)
Interior Finish:	1.0 mil. Polyester (Imperial White)
Post Fabrication:	N/A
R-value:	≈ 7.2 per inch per ASTM C518 @ 75ºF

900 High Rib panels are suitable for new and retrofit applications across commercial and industrial market sectors.

900 High Rib Applications

Vertical

Standard Joint

Corner with trim

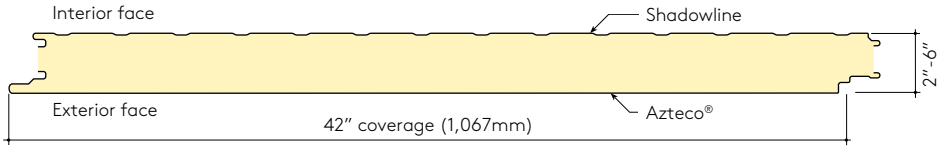
[1]Optional non-embossed. 900 High Rib is only available in the US.

MacDill Air Force Base,
Tampa, FL.

KS Azteco®

KS Azteco® insulated metal panels are a pre-engineered wall system that delivers an attractive and affordable panel choice. KS Azteco® panels, horizontally or vertically applied, use a patented double seal integrated joint. Standard reveals are 1/8" for vertical applications, and 3/8" for horizontal applications.

KS Azteco®



Product Specifications

Exterior Profile:	Flat with Azteco (heavy) embossing
Interior Profile:	Shadowline (Minor Rib) with stucco embossing[1]
Exterior Gauge:	24, optional 22
Interior Gauge:	26, optional 24 or 22
Widths:	42" standard (24", 30" and 36" optional)
Standard Reveals:	Vertical = 1/8", horizontal 3/8"
Lengths:	8' to 53'
Thickness:	2", 2.5", 3", 4", 5" and 6"
Exterior Finish:	1.0 mil. Kynar (70% PVDF)
Interior Finish:	1.0 mil. Polyester (Imperial White)
Post Fabrication:	Trimless ends, folded corners
R-value:	≈ 7.2 per inch per ASTM C518 @ 75ºF

KS Azteco® panels are suitable for new and retrofit applications across the commercial and industrial market sectors.

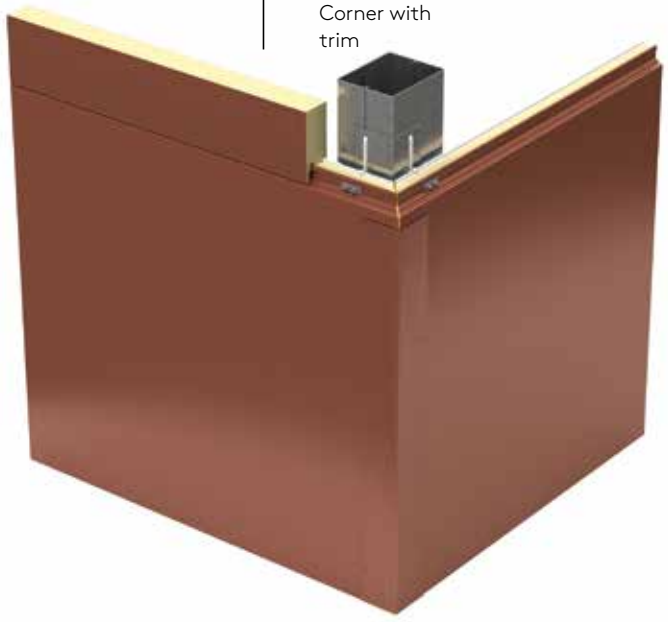
KS Azteco® Applications

Vertical

Standard Joint

Horizontal

Standard Joint



Corner with trim

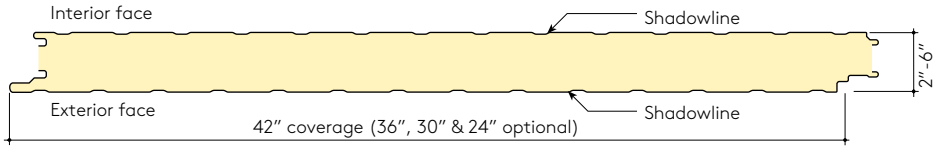
[1]Optional non-embossed.

Kingerlee Ltd, Oxford, UK.

KS Shadowline

KS Shadowline wall systems provide an aesthetically pleasing and economic panel choice. KS Shadowline panels, applied vertically, provide a clean, flat appearance that gives your building the modern finish desired.

KS Shadowline



KS Shadowline panels are ideal for new and retrofit applications across commercial and industrial market sectors.

Product Specifications

Exterior Profile:	Shadowline with stucco embossing[1]
Interior Profile:	Shadowline with stucco embossing[1]
Exterior Gauge:	26, optional 24 or 22
Interior Gauge:	26, optional 24 or 22
Widths:	42″ standard (24″, 30″ and 36″ optional)
Standard Reveals:	Vertical = 1/8″, horizontal 3/8″
Lengths:	8′ to 53′
Thicknesses:	2″, 2.5″, 3″, 4″, 5″ and 6″
Exterior Finish:	1.0 mil. Kynar (70% PVDF)
Interior Finish:	1.0 mil. Polyester (Imperial White)
Post Fabrication:	Trimless ends, folded corners
R-value:	≈ 7.2 per inch per ASTM C518 @ 75ºF

KS Shadowline Applications

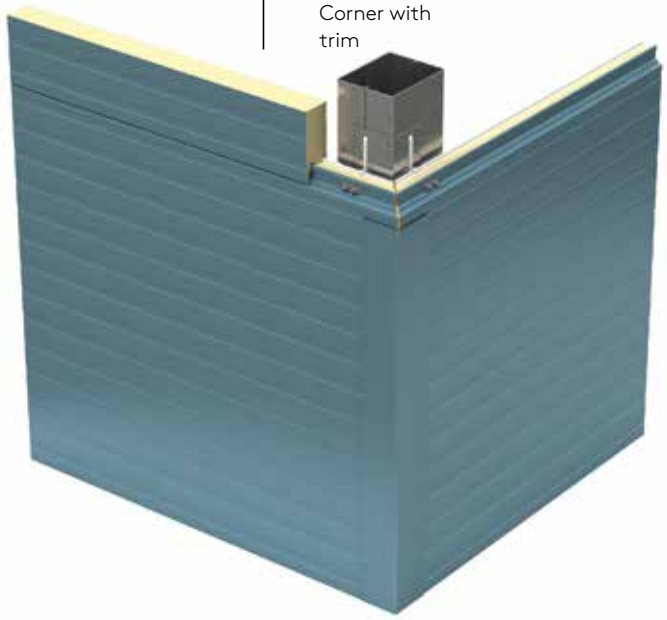
Vertical

Standard Joint

Horizontal

Standard Joint

Corner with trim



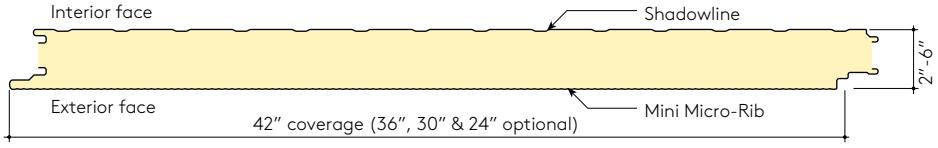
[1]optional non-embossed.

KS Mini Micro-Rib

Northern Arizona University, Flagstaff, AZ.

Mini Micro-Rib allow for an attractive building exterior providing the appearance of fine lines. Mini Micro-Rib panels, applied vertically, are ideal for new and retrofit applications across a wide range of sectors.

KS Mini Micro-Rib



Product Specifications

Exterior Profile:	Mini Micro-Rib (very small striations) with stucco embossing[1]
Interior Profile:	Shadowline with stucco embossing[1]
Exterior Gauge:	24 only
Interior Gauge:	26, optional 24 or 22
Widths:	42" standard (24", 30" and 36" optional)
Standard Reveals:	Vertical = 1/8", horizontal 3/8"
Lengths:	8' to 53'
Thicknesses:	2", 2.5", 3", 4", 5" and 6"
Exterior Finish:	1.0 mil. Kynar (70% PVDF)
Interior Finish:	1.0 mil. Polyester (Imperial White)
Post Fabrication:	Trimless ends, folded corners
R-value:	≈ 7.2 per inch per ASTM C518 @ 75ºF

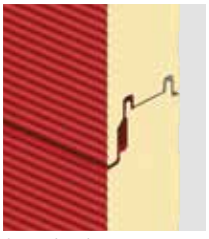
KS Mini Micro-Rib panels provide an outstanding combination of performance benefits with design flexibility.

KS Mini Micro-Rib Applications

Vertical

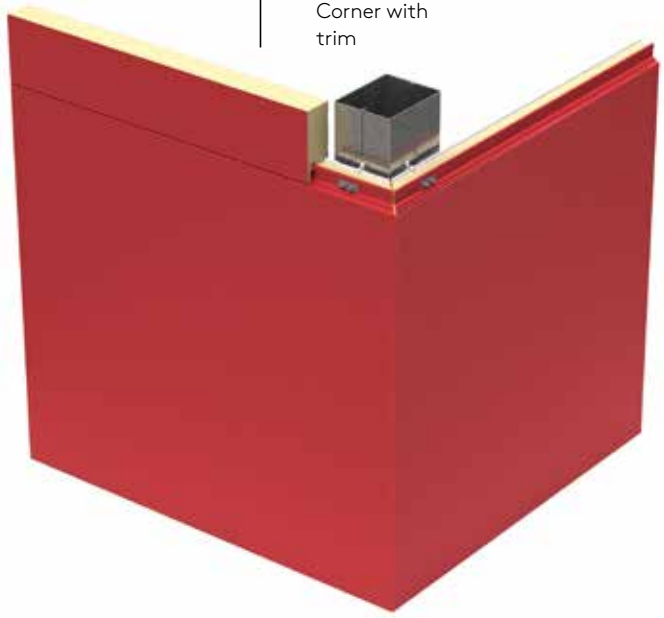
Standard Joint

Horizontal



Standard Joint

Corner with trim



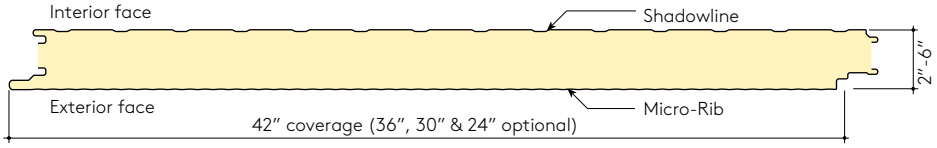
[1]optional non-embossed.

Mercy Place, Parkville, Australia.

KS Micro-Rib

The KS Micro-Rib profile creates an aesthetically superior look while also creating shadows due to its linear appearance. Micro-Rib panels, applied vertically or horizontally, can be used across a wide range of sectors and are equally suited to new construction or retrofits.

KS Micro-Rib



KS Micro-Rib panels provide an unrivaled combination of aesthetics and performance benefits while remaining an economical option.

Product Specifications

Exterior Profile:	Micro-Rib (i.e. small striations) with stucco embossing[1]
Interior Profile:	Shadowline with stucco embossing[1]
Exterior Gauge:	24, optional 22
Interior Gauge:	26, optional 24 or 22
Widths:	42" standard (24", 30" and 36" optional)
Standard Reveals:	Vertical = 1/8", horizontal 3/8"
Lengths:	8' to 53'
Thicknesses:	2", 2.5", 3", 4", 5" and 6"
Exterior Finish:	1.0 mil. Kynar (70% PVDF)
Interior Finish:	1.0 mil. Polyester (Imperial White)
Post Fabrication:	Trimless ends, folded corners
R-value:	≈ 7.2 per inch per ASTM C518 @ 75ºF

KS Micro-Rib Applications

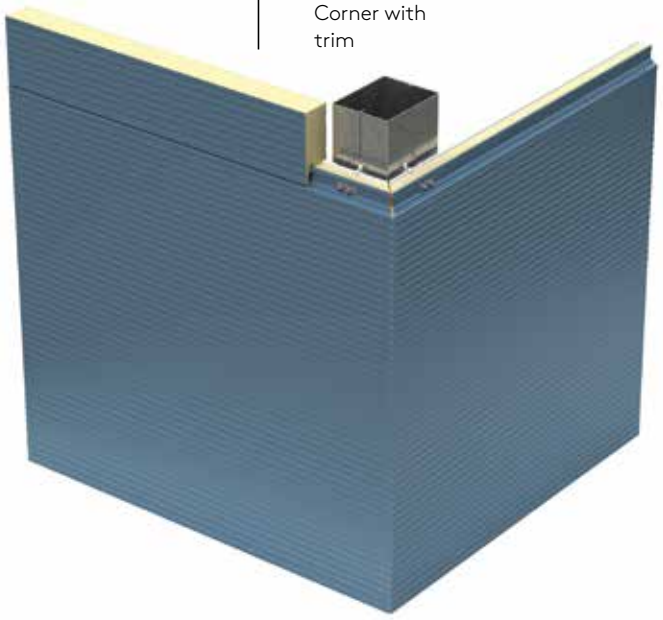
Vertical

Standard Joint

Horizontal

Standard Joint

Corner with trim



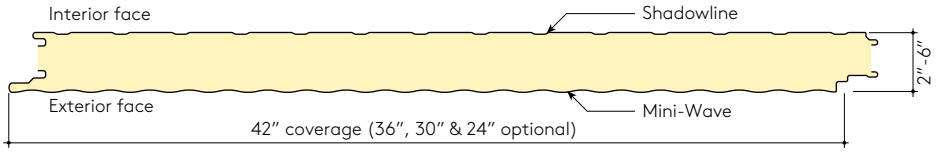
[1]optional non-embossed.

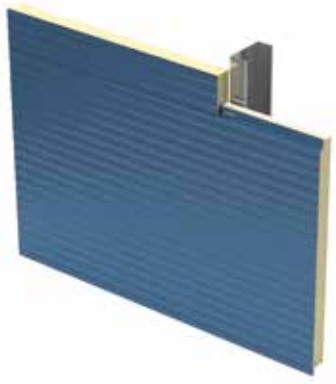
Industrial Offices, Drachten, Holland

KS Mini-Wave

Mini-Wave wall system provides a continuous sweeping profile creating a unique wave appearance. Mini-Wave panels, horizontally or vertically applied, use a patented double seal integrated joint.

KS Mini-Wave





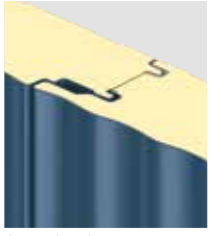
Product Specifications

Exterior Profile:	Mini-Wave (i.e. small sinewave) with stucco embossing[1]
Interior Profile:	Shadowline with stucco embossing[1]
Exterior Gauge:	24, optional 22
Interior Gauge:	26, optional 24 or 22
Widths:	42" standard (24", 30" and 36" optional)
Standard Reveals:	Vertical = 1/8", horizontal 3/8"
Lengths:	8' to 53'
Thickness:	2", 2.5", 3", 4", 5" and 6"
Exterior Finish:	1.0 mil. Kynar (70% PVDF)
Interior Finish:	1.0 mil. Polyester (Imperial White)
Post Fabrication:	Trimless ends, folded corners
R-value:	≈ 7.2 per inch per ASTM C518 @ 75ºF

KS Mini-Wave is ideal for new and retrofit applications across commercial and industrial sectors.

KS Mini-Wave Applications

Vertical

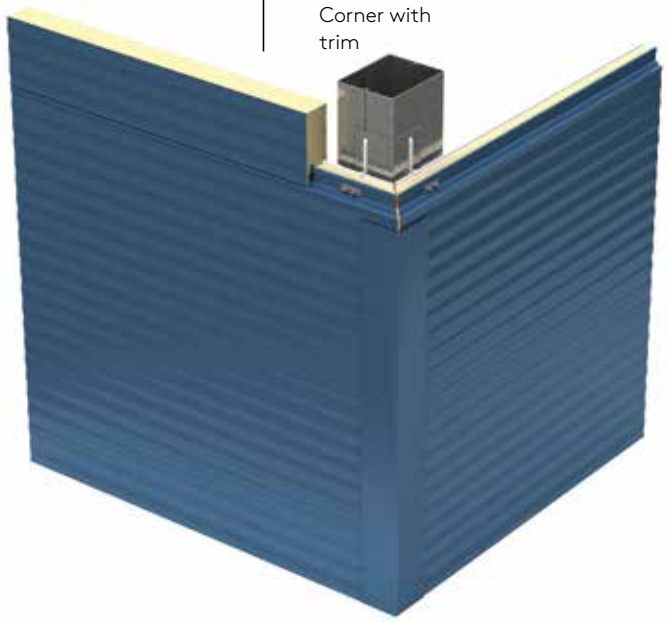


Standard Joint

Horizontal

Standard Joint

Corner with trim



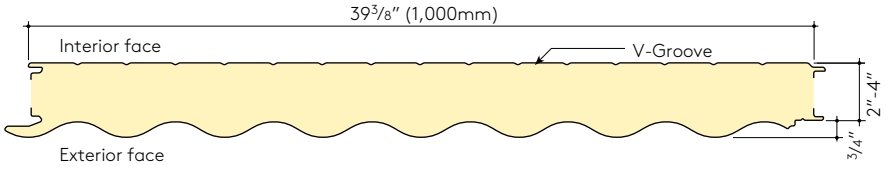
[1]optional non-embossed.

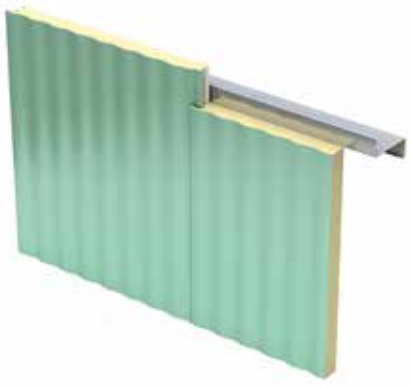
Craigieburn Town Centre, Australia

400 Wave

Wave panels with a bold, vertical, undulating profile create a unique architectural experience. Possessing modern European lines with a hint of classic "retro" styling, this panel is designed for the more sophisticated commercial / industrial project.

400 Wave





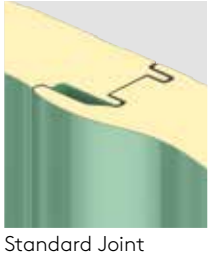
Product Specifications

Exterior Profile:	Vertical non-embossed undulating profile[1]
Interior Profile:	V-groove with stucco embossing[1]
Exterior Gauge:	22
Interior Gauge:	26, optional 24 or 22
Widths:	39-3/8" (1 meter)
Reveal Options:	N/A
Lengths:	8' to 53'
Thicknesses:	2", 3" and 4"
Exterior Finish:	1.0 mil. Kynar (70% PVDF)
Interior Finish:	1.0 mil. Polyester (Imperial White)
Post Fabrication:	N/A
R-value:	≈ 7.2 per inch (at low cell) per ASTM C518 @ 75ºF

400 Wave is suitable for new and retrofit applications across commercial, industrial and institutional market sectors.

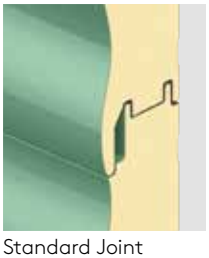
400 Wave Applications

Vertical



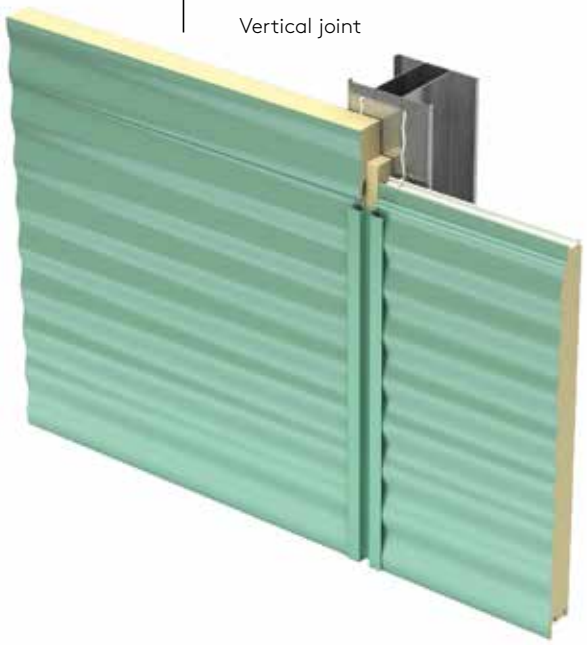
Standard Joint

Horizontal



Standard Joint

Vertical joint



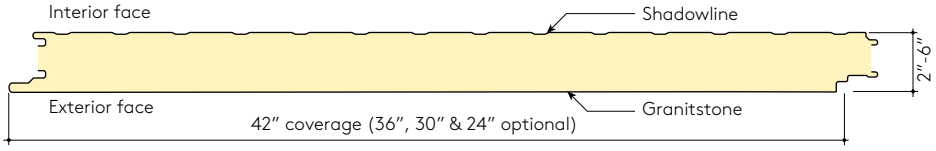
[1]optional non-embossed. 400 Wave is only available in the US.

Deardorff Farms, Oxnard, CA.

KS Granitstone®

The KS Granitstone® finish provides the appearance of stucco or natural stone, with an acrylic aggregate finish factory applied over primed steel, this product is also available in Granitstone Quartz.

KS Granitstone®



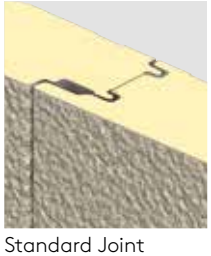
Product Specifications

Exterior Profile:	Flat and stucco embossed (optional Micro Rib with stucco embossing)
Interior Profile:	Shadowline with stucco embossing[1]
Exterior Gauge:	24, optional 22
Interior Gauge:	26, optional 24 or 22
Widths:	42" standard (24", 30" and 36" optional)
Standard Reveals:	Vertical = 1/8", horizontal 3/8"
Lengths:	8' to 30'
Thicknesses:	2", 2.5", 3", 4", 5" and 6"
Exterior Finish:	Silica aggregate with acrylic binder (optional quartz aggregate)
Interior Finish:	1.0 mil. Polyester
Post Fabrication:	Trimless ends, folded corners
R-value:	≈ 7.2 per inch per ASTM C518 @ 75ºF

KS Granitstone panels provide design flexibility and can be used in multiple applications.

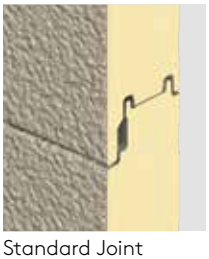
KS Granitstone® Applications

Vertical



Standard Joint

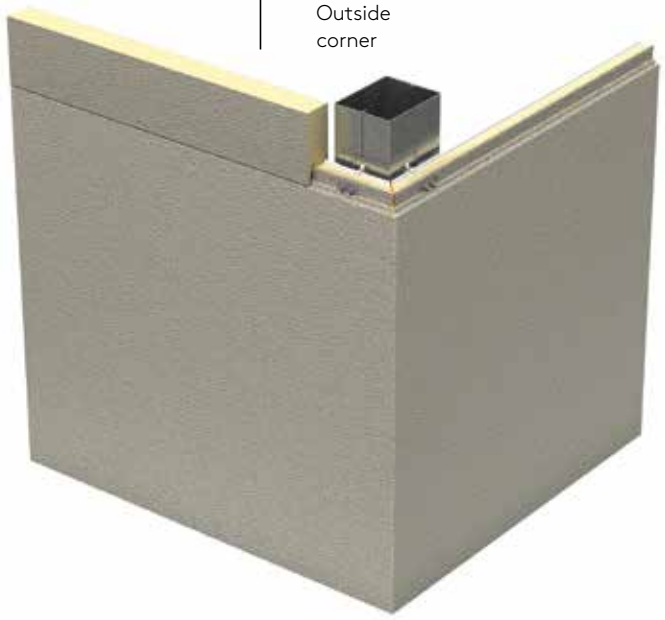
Horizontal



Standard Joint

Optional Quartz

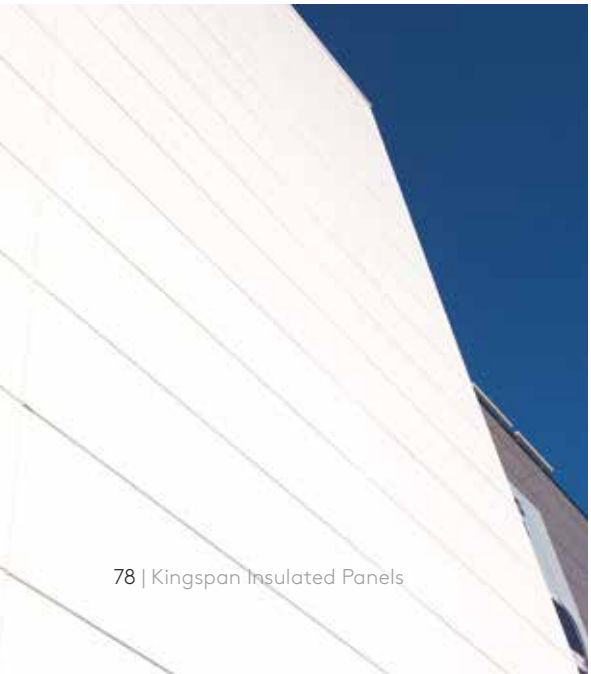
Outside corner



[1]optional non-embossed.

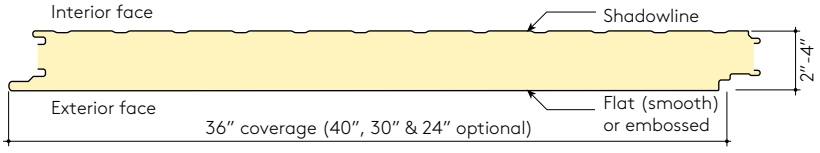
High Street Shopping Mall,
Abbotsford, BC.

Optimo™



The Optimo™ panel system delivers a clean, smooth and aesthetically appealing modern solution. Available with smooth or embossed with a soft non-directional embossed stucco texture Optimo™ panels, horizontally or vertically applied, use a patented double seal integrated joint.

Optimo™



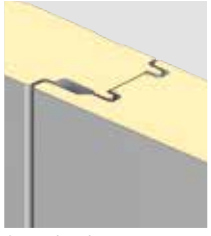
Product Specifications

Exterior Profile:	Flat with stucco embossing or non-embossed
Interior Profile:	Shadowline with stucco embossing[1]
Exterior Gauge:	22
Interior Gauge:	26, optional 24 or 22
Widths:	40", 36", 30", 24"
Standard Reveals:	1/8", 3/8"
Lengths:	8' to 24' (non-embossed), 8' to 32' (embossed)
Thickness:	2", 2.5", 3", 4"
Exterior Finish:	1.0 mil. Kynar (70% PVDF)
Interior Finish:	1.0 mil. Polyester (Imperial White)
Post Fabrication:	Trimless ends, folded corners
R-value:	≈ 7.2 per inch per ASTM C518 @ 75ºF

Optimo™ is ideal for new and retrofit applications across commercial, industrial and architectural market sectors.

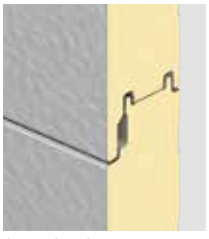
Optimo™ Applications

Vertical



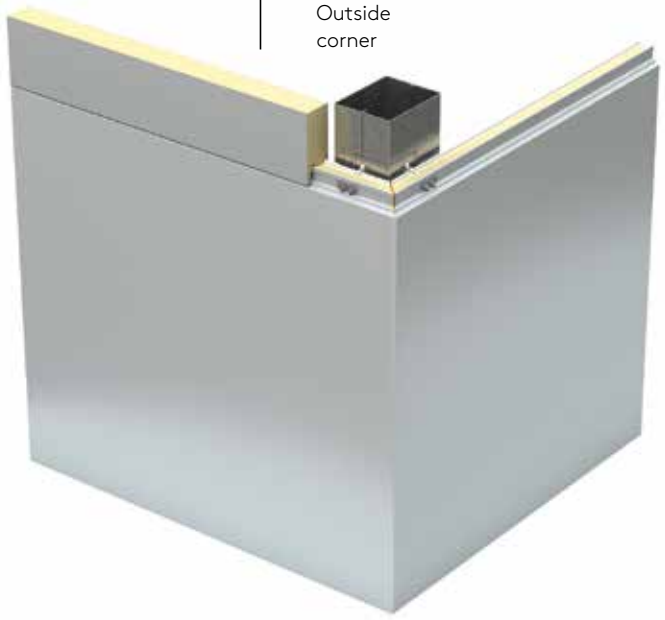
Standard Joint

Horizontal



Standard Joint

Outside corner



[1]optional non-embossed.

Optimo™

Optimo™ insulated metal panel wall systems deliver a clean, smooth and aesthetically appealing modern solution.

Incorporating superior airtightness as well as high R-value is a critical step to achieving an energy efficient LEED® certified and net-zero energy building.

Kingspan's Optimo™ Series gives you that, and more. The Optimo™ Series is available in both a non-profiled non-embossed or embossed texture, creating a modern and sleek building envelope. Optimo's single component system can reduce on-site installation time by up to 50% compared to traditional site assembled systems.

The Optimo™ Series is suitable for high volume, large scale, new and retrofit applications across the commercial and industrial sectors.

- ◇ **High R-value** – provides superior thermal and airtightness performance over the service life of the building
- ◇ **Single component** – minimizes construction delays and the need for multiple trades
- ◇ **Faster build** – faster on-site installation time compared to traditional multi-part systems
- ◇ **Return on investment** – performance benefits result in energy cost savings of as much as 30% over traditional multi part built-up systems
- ◇ **Design flexibility** – available in multiple profiles, trimless ends, finishes and color options
- ◇ **Tested and approved** – panels have been extensively tested for compliance with various industry standards and building safety codes

Alaska Airlines Center, Anchorage, AK.

KarrierPanel™

KarrierPanel™ is a cost effective universal barrier wall alternative solution to traditional multi-component wall systems.

Comprising of a KS Series panel and integrated rail, KarrierPanel™ is the ideal barrier wall to support secondary rainscreen systems such as brick or metal facades.

KarrierPanel™

Product Specifications

Exterior Profile:	Shadowline with stucco embossing
Interior Profile:	Shadowline with stucco embossing
Exterior Gauge:	26, optional 24 or 22 gauge
Interior Gauge:	26, optional 24 or 22 gauge
Width:	42" standard (24", 30" and 36" optional)
Reveal:	$^{3}/_{8}$" to accommodate rail
Lengths:	8' to 53'
Thicknesses:	2", 2.5", 3", 4", 5" and 6"
Exterior Finish:	1.0 mil. Polyester (Imperial White or Gray)
Interior Finish:	1.0 mil. Polyester (Imperial White or Gray)
Post Fabrication:	N/A
R-value:	≈ 7.2 per inch per ASTM C518 @ 75ºF

KarrierPanel™ Applications

Vertical

Standard Joint

Using Flat Rail

Horizontal

Standard Joint

Using Flat Rail

"KarrierPanel™ as a single component system takes the critical path out of the project; increases speed of build, minimizes delays and the need for multiple trades."

KarrierPanel™

Unique KarrierRail™

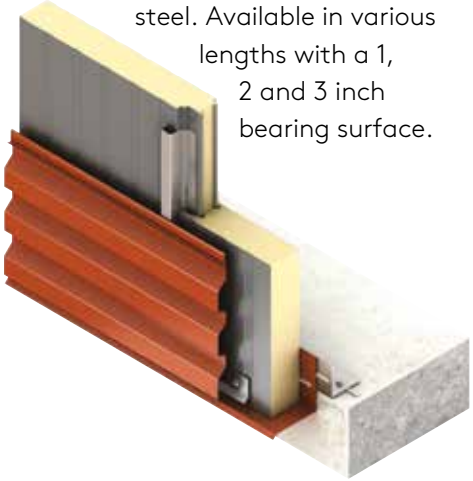
KarrierPanel™ utilizes a Kingspan designed unique rail. This stable and secure structural rail safely transmits positive loads from the multiple façades to the structural supports behind the insulated panels.

Similarly, expansion fasteners (fab-loks) secure the exposed rail edge, ensuring that the system safely handles negative loads as well.

The rail has been developed to fully integrate with Kingspan's KS series panel joint. This rail system does not penetrate the air vapor barrier and enables multiple types of rain screens to be attached to the KarrierPanel™ rail such as brick, single skin metal, aluminum composite and various tile systems.

Installation is quick, simple and easy, as the rail is installed during normal panel installation, and is secured using standard panel fasteners in a one step procedure.

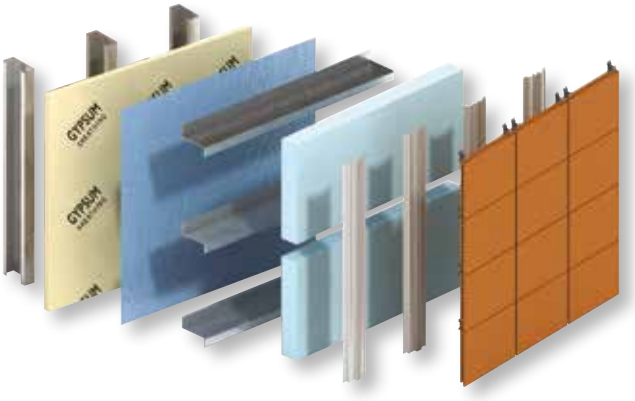
The standard rail configuration is 16 gauge Galvalume®, 50 KSI steel. Available in various lengths with a 1, 2 and 3 inch bearing surface.



KarrierPanel™

Build Speed

KarrierPanel™ provides a simplified barrier wall assembly, minimizing components, trades and delays.



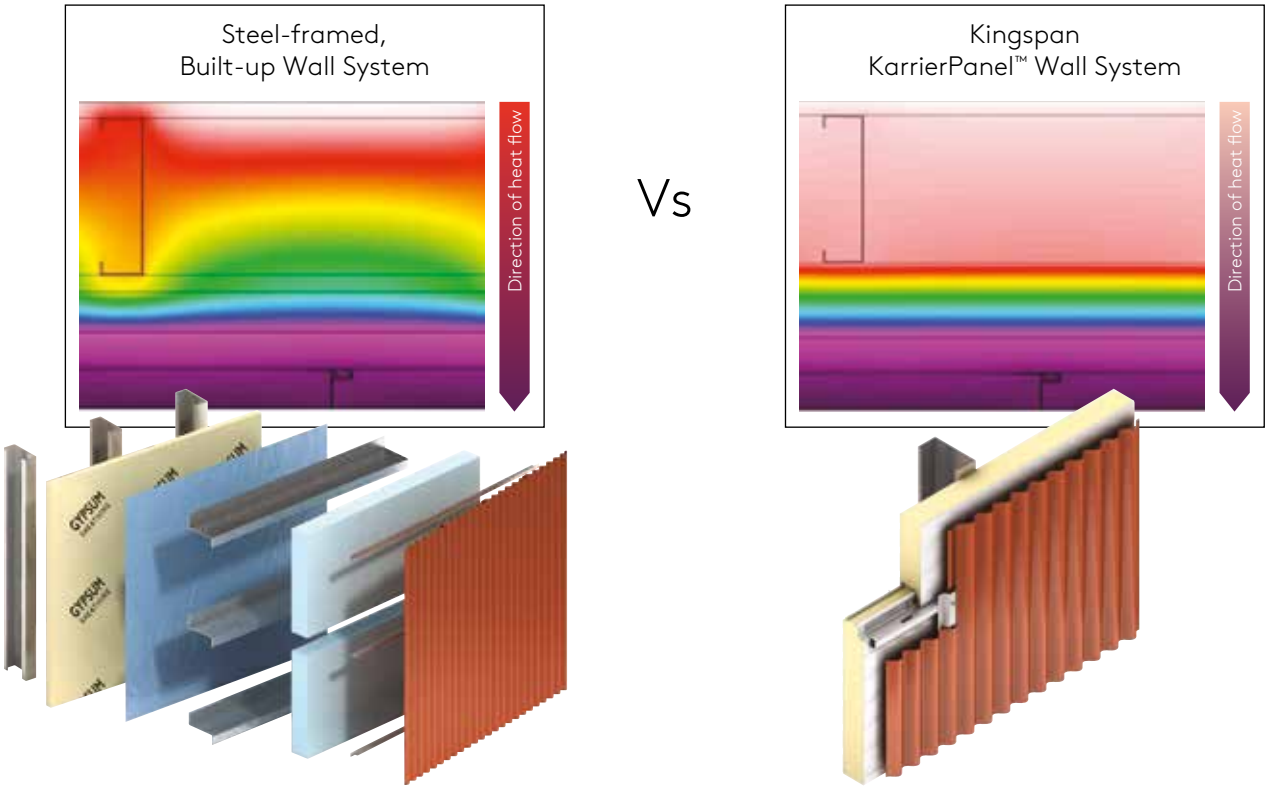
Typical multi-part façade system

Vs

KarrierPanel™ System with
Metal Single Skin Rainscreen

- Faster close-in and dry-in for reduced building costs.
- The single sourced system results in less labor time on-site and construction waste.
- Reduces delays in construction experienced with scheduling multiple trades.
- Increase in build speed allows faster project completion and reduces business disruption.

The insulated panel provides excellent thermal performance with high R-value and airtightness with an air, water and vapor barrier.



Benefits of the KarrierPanel™ Wall System Vs Traditional Built-up Construction:

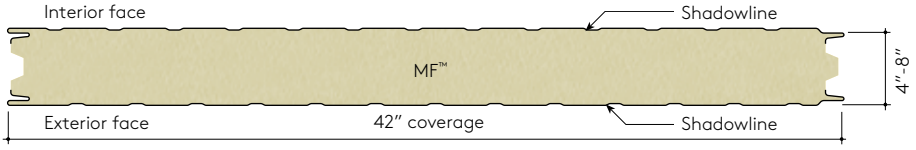
- ◇ The single sourced KarrierPanel™ barrier wall combines the superior thermal performance of IMPs with an air, water and vapor barrier.
- ◇ More uniform temperature distribution throughout the wall ensures moisture control.
- ◇ Eliminates energy losses associated with thermal-bridging cavity insulation.
- ◇ Eliminates concerns over UV exposure as compared to conventional rainscreen components.
- ◇ Eliminates the potential for compromising the air, water and vapor barrier and allows for visual inspection and testing.
- ◇ Results in quicker ROI.

Sunwapta Centre,
Edmonton, AB.

MF™

Kingspan MF™ insulated panels are made from a mineral wool core bonded with metal facings, suitable for fire rated wall applications. Available with a unique hidden fastener for increased aesthetic appeal.

MF™



Product Specifications

Exterior Profile:	Shadowline with stucco embossing (optional: Azteco, Micro-Rib, Granitstone)
Interior Profile:	Shadowline with stucco embossing
Exterior Gauge:	26*, 24, optional 22 gauge (non-embossed requires 22)
Interior Gauge:	26, optional 24 or 22 gauge
Width:	42"
Reveal:	1/8"
Lengths:	6' to 40' (30' recommended for ease of handling)
Thicknesses:	4", 6", 8"
Wall Fire Resistive Ratings:	1 hour, 2 hours, 3 hours respectively
Ceiling Fire Resistive Rating:	1 hour (6" panel only)
Exterior Finish:	1.0 mil. Kynar (70% PVDF)
Interior Finish:	1.0 mil. Polyester
Post Fabrication:	N/A
R-value:	≈ 3.6 per inch per ASTM C518 @ 75ºF

FireRated

MF™ Applications

Vertical


Through Fastener


Hidden Fastener

Horizontal


Through Fastener


Hidden Fastener

*Through fastener only.

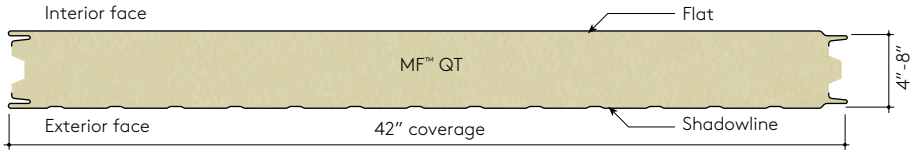
"Not only do Kingspan's MF™ panels provide a versatile method of construction for acoustical and fire rated projects, they also incorporate superior energy efficiency through high levels of airtightness and R-values forming a high performance building envelope."

EJT Holland, Bristol, UK

MF™ QT

Kingspan MF™ QT acoustical panel is used in applications requiring sound reduction. Exterior profile depends on application of the panel (contact Kingspan for available options), interior sound absorbing side is flat and perforated.

MF™ QT



*Through fastener only.

Product Specifications

Exterior Profile:	Shadowline with stucco embossing (optional: Azteco®, Micro-Rib, Granitstone®)
Interior Profile:	Flat and non-embossed with perforations
Exterior Gauge:	24, optional 22 gauge (non-embossed requires 22)
Interior Gauge:	24 (perforated)
Width:	42″
Lengths:	6′ to 30′
Thicknesses:	4″, 6″, 8″
Fire Resistive Ratings:	N/A (not tested for fire)
STC Rating:	30
Sound Absorption:	.92 minimum
Reveal:	1/8″
Exterior Finish:	1.0 mil. Kynar (70% PVDF)
Interior Finish:	1.0 mil. Polyester
Post Fabrication:	N/A
R-value:	≈ 3.6 per inch per ASTM C518 @ 75ºF

MF™ QT Applications

Vertical (interior face shown)


Through Fastener


Hidden Fastener

Horizontal (interior face shown)


Through Fastener

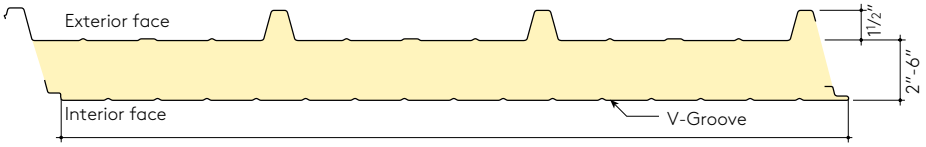

Hidden Fastener

High Rib

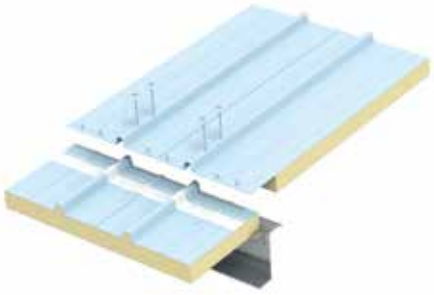
Paraparaumu College, Wellington, NZ.

900 Series panels are the ultimate in high R-value systems, making them the panel of choice where energy efficient, lightweight, low maintenance roofs are required.

High Rib



39⅜" (1,000mm) or 40" (1,016mm) coverage

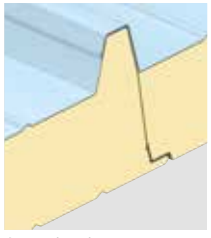


High Rib panels are suitable for new and retrofit applications across commercial and industrial market sectors.

Product Specifications

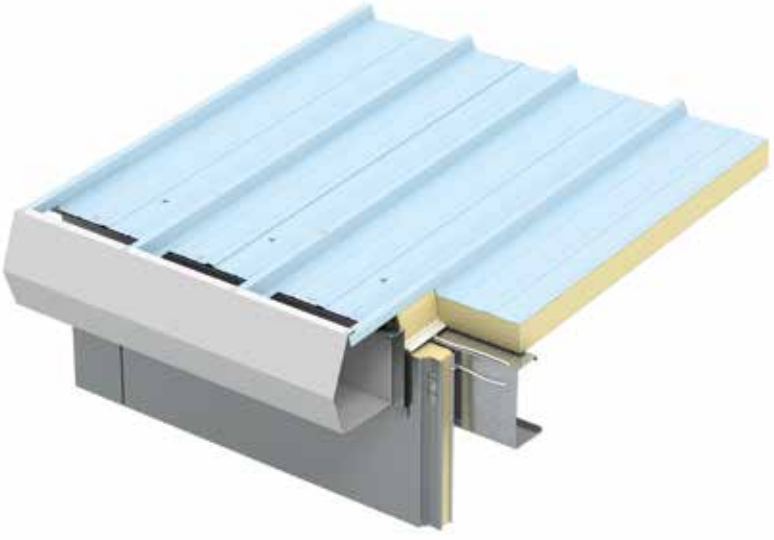
Exterior Profile:	High rib profile with stucco embossing[1]
Interior Profile:	V-groove with stucco embossing[1]
Exterior Gauge:	26, optional 24 or 22 gauge
Interior Gauge:	26, optional 24 or 22 gauge
Widths:	39-⅜" (Modesto), 40" (Deland)
Reveal Options:	N/A
Lengths:	8' to 54' (Modesto), 46' (Deland)
Thicknesses:	2", 2,5", 3", 4", 5" and 6"
Exterior Finish:	1.0 mil. Kynar (70% PVDF)
Interior Finish:	1.0 mil. Polyester (Imperial White)
Post Fabrication:	Cutbacks at eaves and end laps
R-value:	≈ 7.2 per inch per ASTM C518 @ 75ºF

High Rib Applications



Standard Joint

Eave with gutter



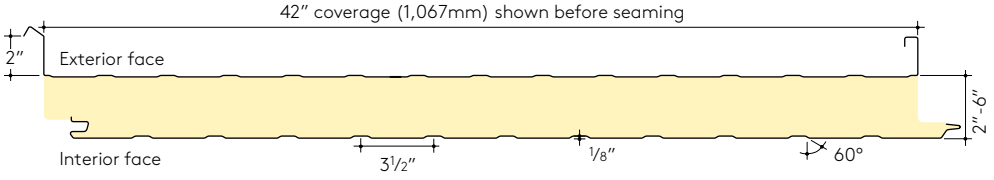
[1]optional non-embossed. High Rib is only available in the US.

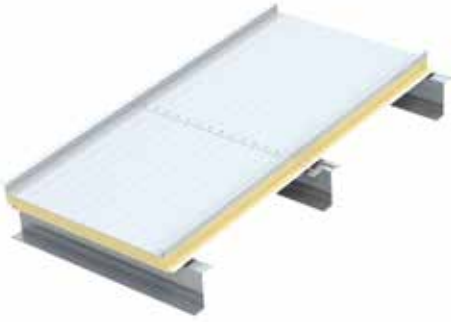
KingZip™

Maui Brewing Company, Kihei, HI.

KingZip™ insulated standing seam roof panels are designed to offer design flexibility and aesthetics combined with high R-values and unparalleled service life performance. The robust one piece flat pan design of the panel is ideal for complicated roof geometries such as hips and valleys, does not require the use of underlayments, and may be applied directly over open purlins or decking.

KingZip™





KingZip™ is suitable for new and retrofit applications across commercial, industrial and institutional market sectors.

Product Specifications

Exterior Profile:	2" (nominal) mechanically seamed sidelap, inverted minor rib with stucco embossing*
Interior Profile:	Minor rib with stucco embossing*
Exterior Gauge:	26, optional 24 or 22 gauge
Interior Gauge:	26, optional 24 or 22 gauge
Widths:	42"
Reveal Options:	N/A
Lengths:	10' to 48'
Thicknesses:	2", 3", 4", 5" and 6"
Exterior Finish:	1.0 mil. Kynar (70% PVDF)
Interior Finish:	1.0 mil. Polyester (Imperial White)
Post Fabrication:	Cutbacks at eaves and end laps
R-value:	≈ 7.2 per inch per ASTM C518 @ 75ºF

KingZip™ Applications

Standard Joint

Sidelap

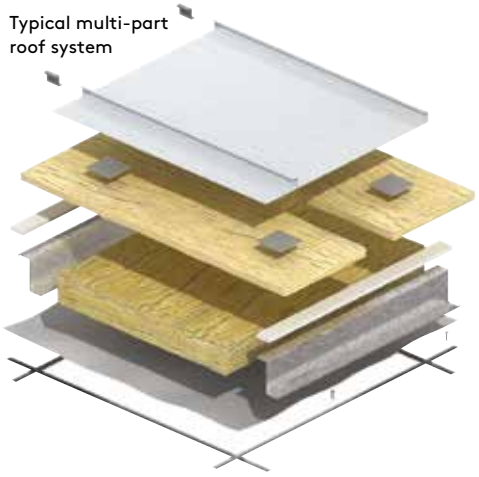
*Optional non-embossed. KingZip™ is only available in the US.

KingZip™

Build Speed

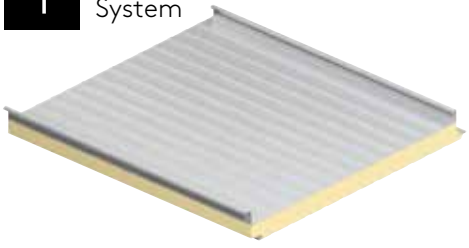
KingZip™ as a single component roof system increases speed of build, decreases number of trades, minimizes delays and allows for safety and fall arrest systems. Simple Saver System vs. KingZip™ Insulated Standing Seam Roof System.

Typical multi-part roof system



Vs

1 KingZip™ Roof System



- Provides the exterior weather barrier, high efficiency insulation core and integral vapor barrier 'all-in-one'
- Reduces on-site installation time by up 50% compared to multi-part roof systems
- Easily adaptable to accommodate safety and fall arrest systems
- Pre-finished
- Increases in build speed allow for faster project completion and minimizes business disruption


High thermal performance, tested R-values of up to 48
Reduced potential for thermal bridging typical of cavity insulation systems
Energy savings of up to 30% as well as reduced carbon emissions & carbon footprint
Increased build speed; up to 50% compared to traditional built-up systems

Kingspan Energy

Kingspan Energy can transform your commercial roof into an energy-generating asset.

Everyday abundant, clean, free energy hits your building's roof. It's there to be used. Kingspan Energy designs, builds and maintains Solar PV systems that convert that energy to usable electricity. Our team of energy professionals will analyze your building's energy use, rooftop spaces, electrical and structural systems weaving available incentives into a Solar PV package that brings significant savings to your business and enabling you to run your operations on clean energy.

Whether the design requirements are high performance, LEED® certification, a net-zero energy building or social responsibility, Kingspan Technical Team will evaluate the project to determine the most suitable Powerpanel option, and provide the design team and building owner with estimated energy savings, CO_2 reduction, tax benefits, first cost and return on investment calculations to assist with design decisions.

Kingspan Solar Options

- ◇ New Built Projects
- ◇ Retrofit Projects
- ◇ Refurbishment Projects

20yr

combined roof & solar PV system guarantee

up to

40%

Kingspan Energy's advanced lighting reducing energy costs

100%

fully-funded solution

KingZip™ offers an ideal platform for solar PV systems – long life, low maintenance and extremely durable.

Kingspan ENERGY

Kingspan Light + Air

Kingspan Quasar

Kingspan Smart-Lite Kite

Kingspan Energy Rooftop Solar PV

ZerO Energy Lighting (ZEL) offers a unique blend of high quality daylight solutions, intelligent LED lighting, fully programmable automatic controls and Kingspan Energy Rooftop Solar PV.

For over 40 years, Kingspan has pushed the boundaries of energy efficiency, creating the world's most advanced building envelopes that offer superior energy performance and exceptional comfort across the world's climate zones.

The world of construction is changing – depleting natural resources, climate change and the pressures from rising global energy costs have changed focus. Responsible construction today focuses on sustainable solutions; designing, constructing and operating buildings in a manner that minimizes energy consumption and reduces environmental impact, as well as improving human productivity.

Lighting is accountable for over 19%* of the world's energy usage, and improvements in lighting technology represent an opportunity to substantially lower our reliance on traditional energy sources, while delivering tangible financial savings and a path to sustainable development.

Our intelligent ZerO Energy Lighting Solution offers a major improvement in energy efficiency, as a light source and also through improved levels of lighting control. The automatically-controlled lighting levels are undetectable to occupants as they move throughout the building, surrounding them with a consistent level of high quality light from a combination of daylight and electrical lighting sources.

From a building management perspective, manual lighting control leads to lights being left on and energy being wasted. It is far better for the lighting to be controlled by the building administration, allowing the automatic controls to deliver an optimized performance.

Our integrated technology is what makes adopting a net-zero energy blended lighting solution an attractive and solid business proposition that goes beyond energy savings to create future-proofed, sustainable buildings with safe, pleasant and productive working environments.

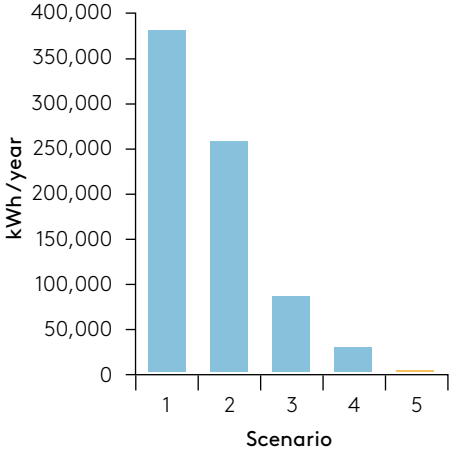
*Source: Compiled by Earth Policy Institute from International Energy Agency (IEA), Light's Labour's Lost: Policies for Energy-efficient Lighting (Paris: 2006); 2005 electricity consumption estimated from IEA, World Energy Outlook 2006 (Paris: 2006).

Building Energy Modelling Timescales*

Scenario	Lighting Energy kWh/year	$/year	Savings %	$/year
1 Base case, HID lighting, no skylights	389,820	38,982	0	0
2 HID lighting with on/off photo-controls, 3% prismatic skylights	255,258	25,526	35	13,456
3 3% prismatic skylights, LED with daylight harvesting	86,040	8,604	78	30,378
4 3% prismatic skylights, LED with daylight and occupancy controls	25,803	2,580	93	36,402
5 3% prismatic skylights, Kingspan Smart-Lite Kite, lighting energy offset by PV array = Kingspan ZEL	0	0	100%	38,982

Occupancy controls estimated as providing 70% savings.

*Based on a 100,000 sq.ft. warehouse and a conservative $0.10 per kWh cost of energy in North America. Results with daylighting will vary based on geographical location, but use has been documented by the U.S. Department of Energy that substantial energy savings is possible in the right application in all North America Climate zones. Consult your Kingspan Light + Air representative for more details.



High Performance Color Coating Systems

Kingspan offers a full spectrum of vibrant colors for every color scheme. The high performance coatings provide long-life protection, color and gloss retention.

Kingspan Coating System Options

Weather XL – Siliconized Modified Polyester (SMP)
WEATHER XL coating systems utilize only ceramic and inorganic pigments offering superior color stability, chalk and fade resistance as well as gloss retention.

Solid Fluropon® PVDF Colors – Kynar 500® / Hylar 5000
Fluropon coatings are durable polyvinyldene coating system containing 70% Kynar or Hylar resins, ceramic and other inorganic pigments. This system provides a powerful chemical bond, superior resistance to ultraviolet radiation resulting in exceptional color retention, resistance to chalking and chemical degradation.

Mica Fluropon Classic® II PVDF Colors**
The coating system consists of a special primer and a durable color coat containing mica pearlescent flakes.

Metallic Fluropon Classic® PVDF Colors**
Metallic coatings employ metal flakes in the color coat. The system uses a special primer, a 70% Kynar 500® or Hylar 5000® resin based Fluropon color coat and a clear topcoat, to provide outstanding color and gloss retention, increased abrasion resistance and added protection against atmospheric contaminants.

Inquire about our range of coatings with high Solar Reflectance Index.

*Some colors require clear-coat protection.
**Due to the orientation of aluminum / pearlescent flake pigments during application, the appearance will be directional in nature on metallic coatings.

Flurothane Coastal PVDF Colors

This is a premium Fluoropolymer (PVDF) system developed for use in the most extreme coastal environments (less than 1500 feet from the coastline). The unique aspect about this system is the innovative thick film primer. This is field-proven and provides a high performance exterior finish delivering outstanding resistance to ultraviolet rays, exceptional color retention and resistance to chalking from salt spray and harsh coastal environments.

Panel Interior

Standard is 1.0 mil. Valspar® Dynapon® (MP), USDA accepted and suited for most wash down environments. For heavy wash down areas, plastisol (PVC) or stainless steel is available.

Applications

Kingspan's Valspar® coatings work well for any commercial, industrial or architectural application.

Color Matching

Kingspan offers a full spectrum of vibrant colors for every color scheme. The high performance coatings provide long-life protection, color and gloss retention. Custom color matching is available to meet individual building designs and creative freedom.

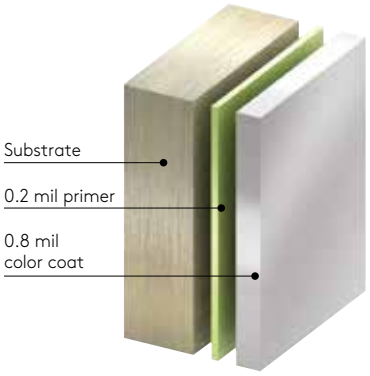
Warranties

Kingspan and their suppliers provide standard coating warranties for up to 20 years.

Product Benefits

- ◇ A wide range of solid and metallic colors
- ◇ Excellent durability and weather performance
- ◇ Energy Star® and Cool Roof® options
- ◇ Contributes to LEED® credits

High Performance Metal Coating Color Range



Standard Colors

Weather XL – Siliconized Modified Polyester (SMP)

WEATHER XL coating systems utilize only ceramic and inorganic pigments offering superior color stability, chalk and fade resistance as well as gloss retention.

SMP

Driftwood
SR:0.55 E:0.86 SRI:64

Sandstone
SR:0.49 E:0.86 SRI:56

Surrey Beige
SR:0.41 E:0.86 SRI:45

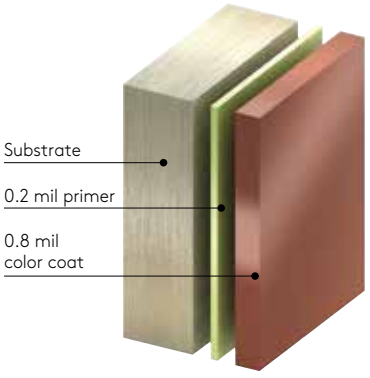
Imperial White
SR:0.62 E:0.86 SRI:74

MP (Modified Polyester)

Imperial White
SR:0.62 E:0.86 SRI:74

valspar
if it matters, we're on it.®

Standard Colors



Solid Fluropon® PVDF Colors – Kynar 500® / Hylar 5000

Fluropon coatings are durable polyvinyldene coating system containing 70% Kynar or Hylar resins, ceramic and other inorganic pigments. This system provides a powerful chemical bond, superior resistance to ultraviolet radiation resulting in exceptional color retention, resistance to chalking and chemical degradation.

Category 1

Regal White	Ascot White	Bone White	Driftwood	Sandstone	Surrey Beige
SR:0.70 E:0.86 SRI:85	SR:0.69 E:0.85 SRI:83	SR:0.69 E:0.84 SRI:83	SR:0.45 E:0.86 SRI:50	SR:0.61 E:0.85 SRI:72	SR:0.48 E:0.86 SRI:54

Category 2

Dove Gray	Zinc Gray	Rawhide	Parchment	Rock Tan	Taupestone
SR:0.47 E:0.86 SRI:53	SR:0.35 E:0.86 SRI:37	SR:0.55 E:0.85 SRI:64	SR:0.53 E:0.85 SRI:61	SR:0.62 E:0.86 SRI:74	SR:0.27 E:0.86 SRI:26

Spartan Bronze	Redwood	Slate Blue
SR:0.31 E:0.85 SRI:31	SR:0.38 E:0.86 SRI:41	SR:0.28 E:0.85 SRI:27

Category 3

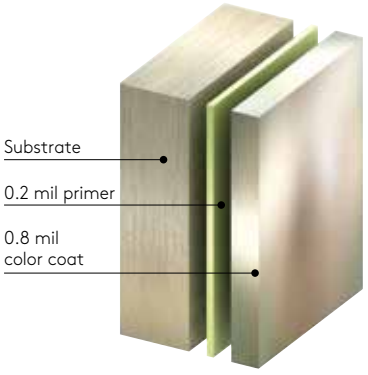
Colonial Red	Evergreen	Regal Blue	Tahoe Blue
SR:0.32 E:0.86 SRI:33	SR:0.26 E:0.85 SRI:24	SR:0.26 E:0.85 SRI:24	SR:0.26 E:0.85 SRI:24

High Performance Metal Coating Color Range

Premium Colors

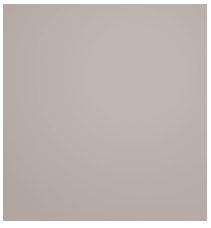
Mica Fluropon Classic® II PVDF Colors

The coating system consists of a special primer and a durable color coat containing mica pearlescent flakes.



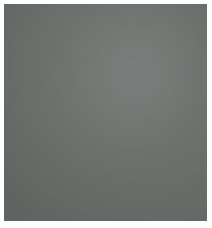
Silversmith
SR:0.53 E:0.79 SRI:59

Zinc
SR:0.55 E:0.79 SRI:62



Champagne Pearl
SR:0.48 E:0.81 SRI:53

Champagne Bronze
SR:0.44 E:0.78 SRI:46

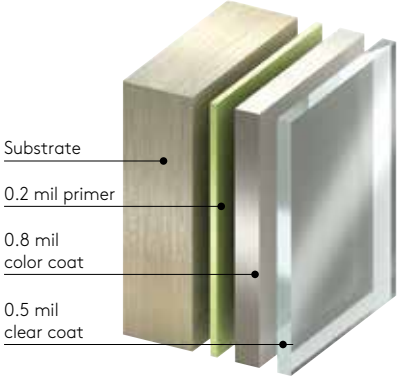


Weathered Zinc
SR:0.33 E:0.84 SRI:33

Copper Penny
SR:0.48 E:0.84 SRI:54

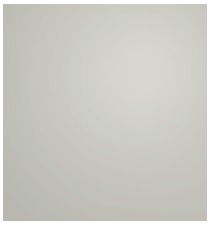
Metallic Fluropon Classic® PVDF Colors

Metallic coatings employ metal flakes in the color coat. The system uses a special primer, a 70% Kynar 500® or Hylar 5000® resin based Fluropon color coat and a clear topcoat, to provide outstanding color and gloss retention, increased abrasion resistance and added protection against atmospheric contaminants.

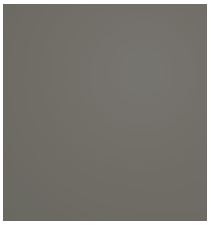


Bright Silver
SR:0.57 E:0.81 SRI:65

Rosalind Rose
SR:0.34 E:0.88 SRI:36



Champagne Gold
SR:0.51 E:0.85 SRI:58

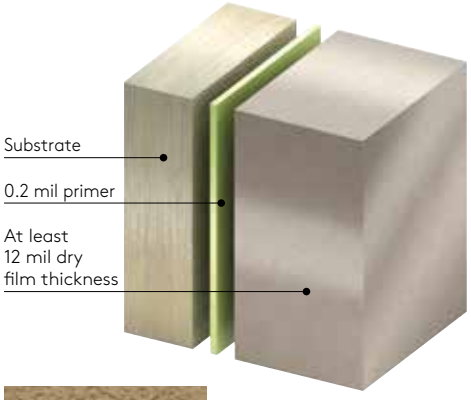


Pewter
SR:0.31 E:0.86 SRI:31

Medium Bronze
SR:0.19 E:0.85 SRI:15

Dark Bronze
SR:0.12 E:0.83 SRI:5

Granitstone®



Granitstone® Panel Colors

Granitstone® coatings have an oven-baked epoxy primer and a factory applied finish of an air-dried 100% acrylic bonder with natural silica aggregate, minimum 12 mils dry film thickness, finished to resemble sprayed stucco.

Granitstone®


Imperial White


Bone White


Sandstone

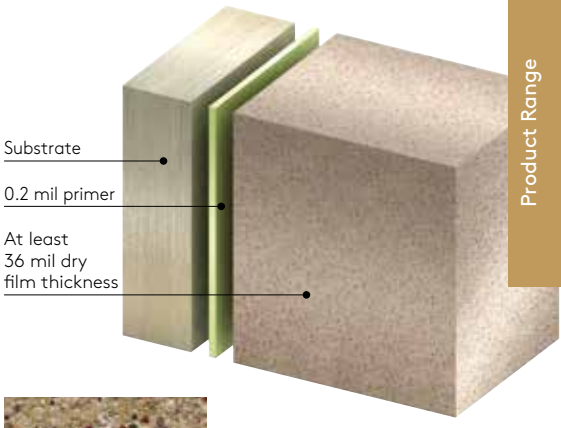

Parchment


Rawhide


Surrey Beige


Taupestone


Dove Gray



Granitstone® Quartz


Teton Gray


Foxwood Beige


Dakota Bronze


Cascade Sand


Monterey Gold

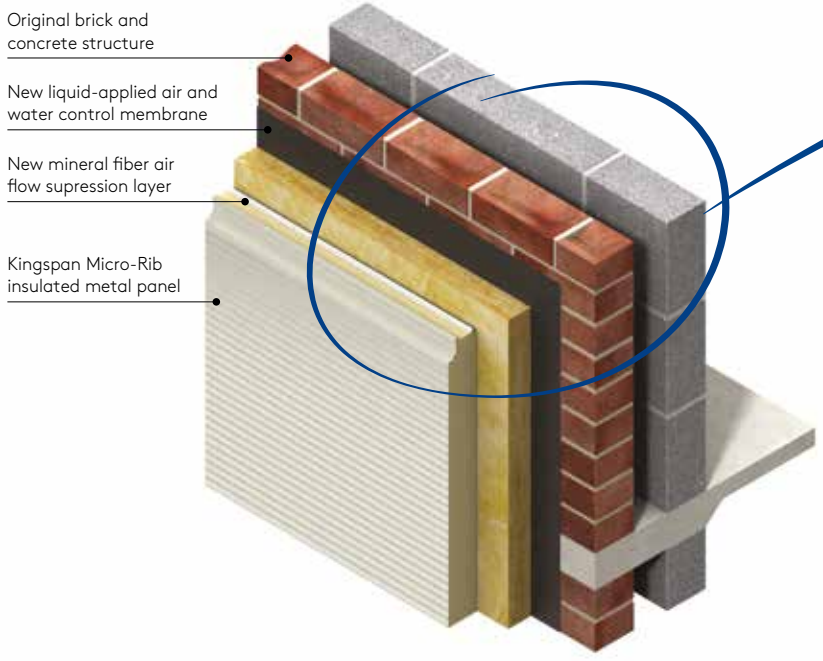
Case Studies

Castle Square

The Castle Square Tenant's Organization (CSTO), Boston MA, was faced with a completely outdated, energy-devouring building in a rapidly gentrifying neighborhood. The original walls of uninsulated brick and concrete required a façade retrofit.

The CSTO applied a "deep energy retrofit" strategy and the four seven-story buildings of the Castle Square complex were wrapped in a super-insulated shell. Kingspan's Mini-Wave and Micro-Rib panels were selected. The 5-inch Kingspan panels accomplish the deep-energy retrofit's enclosure goals while furnishing the building with a beautiful and durable new façade. An exterior EnvelopeFirst™ approach did not displace a single resident during the extensive construction, and total energy savings will amount to more than 72% according to the CSTO.

The project has earned a Mayor's Green Award, which celebrates works that make Boston a greener, more sustainable, and livable city and was awarded LEED® Platinum status.

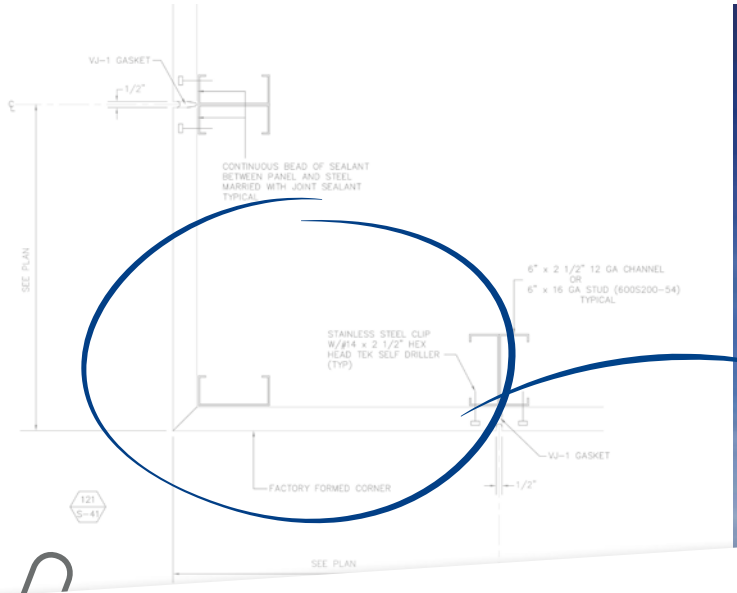


Location: Boston, MA
Products: Mini-Wave and Micro-Rib
Building Type: Residential
Sqft: 77,000
Architects: Elton & Hampton

Scan here to see the full case study:

Case Studies

LG Chem



The factory had to mirror the philosophy behind the Chevy Volt project: sustainable, long-term efficiency, eye-catching style, and performance, all at a satisfactory cost.

Associates of the project's architectural firm, Rossetti, decided Optimo™ was the best product for their design needs. It has tested R-values as high as 30, low thermal bridging, and superior airtightness and can bring potential energy savings of up to 30 percent.

Construction of the 650,000-square-foot complex includes corporate offices, production-assembly areas, and 120,000 square feet of special clean and dry rooms. It is a prime example of 21st century manufacturing. Because Kingspan insulated metal panels are a single-component system, installation time was reduced by as much as 50 percent over standard multipart, site-assembled cladding. Increasing the speed of construction, minimizing delays, and reducing the number of trades workers are benefits of great importance to the deadline-driven needs of designers and builders.

Due to the ease of installation, construction at LG Chem Michigan was completed ahead of schedule and the planned start of production began three full months ahead of schedule. For a time-driven project such as this, Kingspan's Optimo™ insulated metal panels proved to be the most efficient, cost-effective building solution possible.

"From the onset, Kingspan's engineering and sales teams were excellent in providing Universal Wall Systems with the information needed during the design phase, so we in turn could provide the owner with the desired detailing."

Dan Hooper of Universal Wall, Inc.

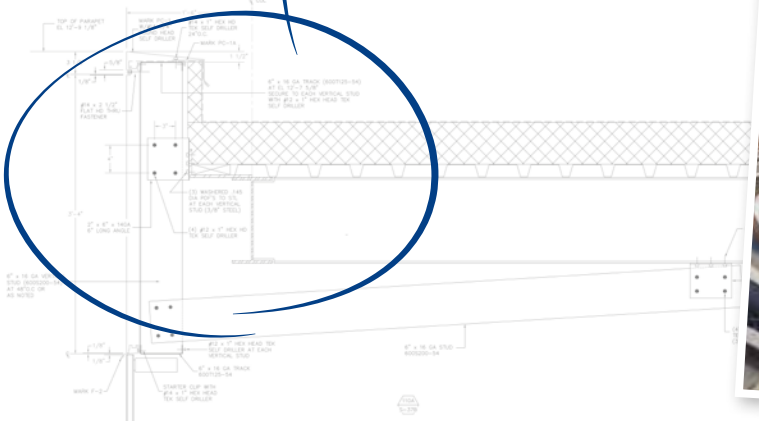
Location: Holland, MI

Products: Optimo™

Building Type: Battery manufacturing facility

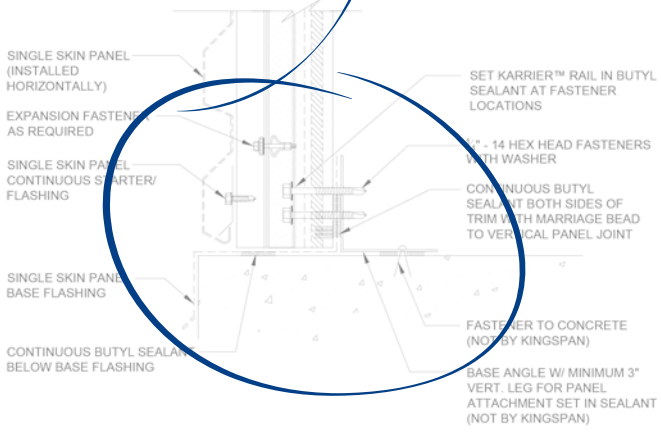
Sqft: 208,000

Architects: Rossetti, Southshiled, MI

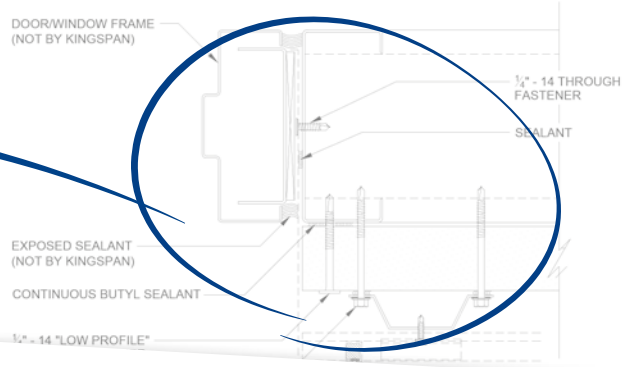


Case Studies

Portland Community College



Location: Portland, OR
Products: Karrier Panel
Building Type: Education
Sqft: 106,000
Architects: SRG Partnership



A LEED® Silver certified building, Kingspan KarrierPanel™ was the product of choice for PCC's Southeast Center construction project. This project was to provide exterior insulation outside of framing, as required by code, while still fulfilling the architect's design idea.

Under a 2008 Oregon voter-approved bond measure, the Southeast Center received a $36 million makeover to transform it into a comprehensive, full-service campus more than double it's previous footprint. The bond directly relates to the college's commitment to sustainability.

Comprising of a KS Series panel and integrated rail, KarrierPanel™ is the ideal barrier wall to support secondary raincreen systems such as metal, tile or brick façades. The PCC project followed a vertical application using single element cladding panels from Morin, a Kingspan Group Company.

The durable commercial wall systems also reduce operational costs for energy maintenance and offer multiple end-of-life reuse options, aligning with PCC's LEED® certification commitment.

"I'm currently using Kingspan panels for an even larger project," said Harbaugh, who attributes Kingspan IMPs to allowing him to provide a lower quote and shorter schedule time to his clients.

Ric Olander, Architectural Division Manager at General Sheet Metal in Clackamas, OR, worked on the project in the third and fourth quarters of 2013. As a single-component wall system, KarrierPanel™ is simple in detail and to attach, reducing schedules and installation errors. Olander confirmed the portion of the project using KarrierPanel™ was completed on time.

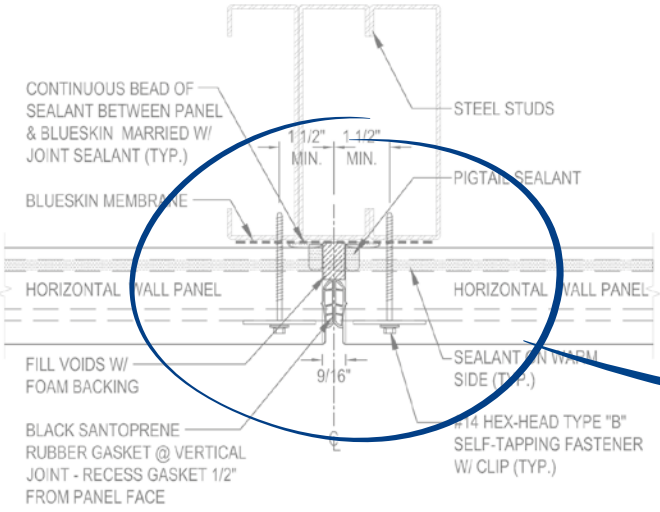
The clients were satisfied with the final look and project completion of the two new buildings using Kingspan KarrierPanel™. Once construction on the remaining renovation to pre-existing buildings is completed, the Southeast Center will have a total of six buildings covering 18 acres in the heart of Southeast Portland.

"The Kingspan panels we used for this project directly contributed to the building scoring extremely high on LEED® certification credits."

Jeff Harbaugh, General Sheet Metal in Clackamas

Case Studies

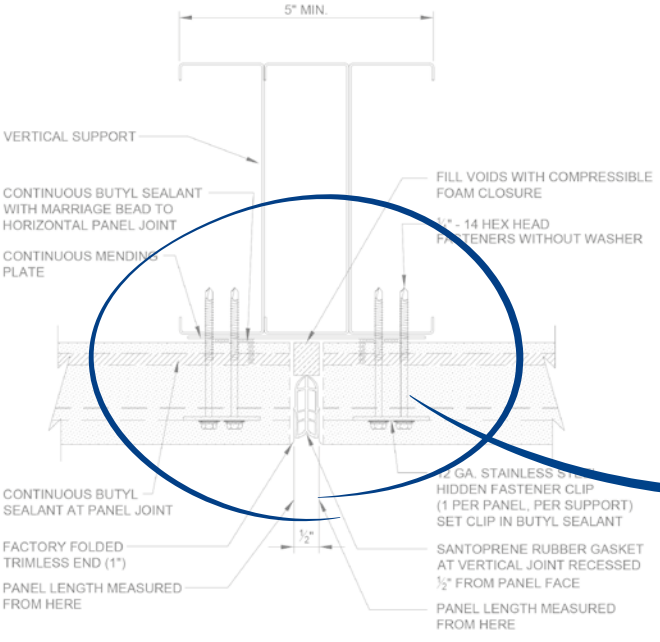
Seattle Commercial Hangar



Location: Tukwila, WA
Products: Micro-Rib
Building Type: Aviation hangar and supporting building
Sqft: 44,000
Architects: DRA Architects

"The Kingspan team is approachable and willing to work with us. Kingspan panels fit together very nicely."

Kristi Guoy of Northshore Sheet Metal



The Seattle Commercial Hangar project needed to combine pragmatic functionality with the business needs of the client. ORA Architects specified Micro-Rib insulated wall panels for the building envelope.

The completed project included a 32,000-square-foot hangar and a 12,000-square-foot support building. The support building includes a separate waiting lounge, conference space and offices. In accordance with the desire to attain LEED® Certification, the outer envelope includes materials such as reclaimed wood and Kingpsan Micro-Rib insulated metal panels also containing recycled materials.

For the hangar, the Micro-Rib's performance and specifications proved ready to meet stringent technical specifications. The Micro-Rib's airtightness and water resistance characteristics protect valuable aircraft and cargo from the rainy Seattle area weather. The Valspar® modified polyester internal finish allows for wash-down procedures if needed. Kingspan's product performance ratings for fire, structural and other performance indicators made IMPs well suited to meet industry regulations. The panels' R-value of 7.2 per inch gave the building envelope a total R-value of 18.75, helping the facility towards meeting a goal of LEED Silver Certification.

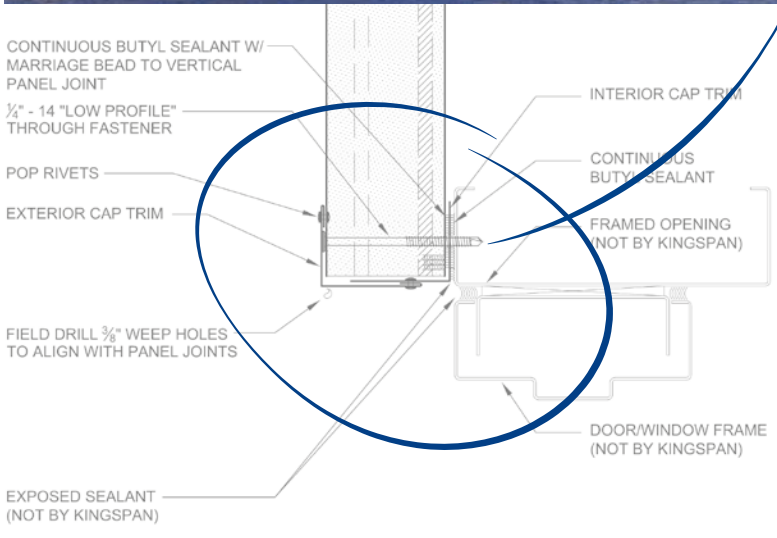
Kingspan's simple single-component assembly reduced construction time and costs.

Case Studies

Ketchikan Ship Yard

"Kingspan makes a great insulated metal panel. It's so very solid and yet easy to work with."

Paul Duersch, project manager Dawson Construction



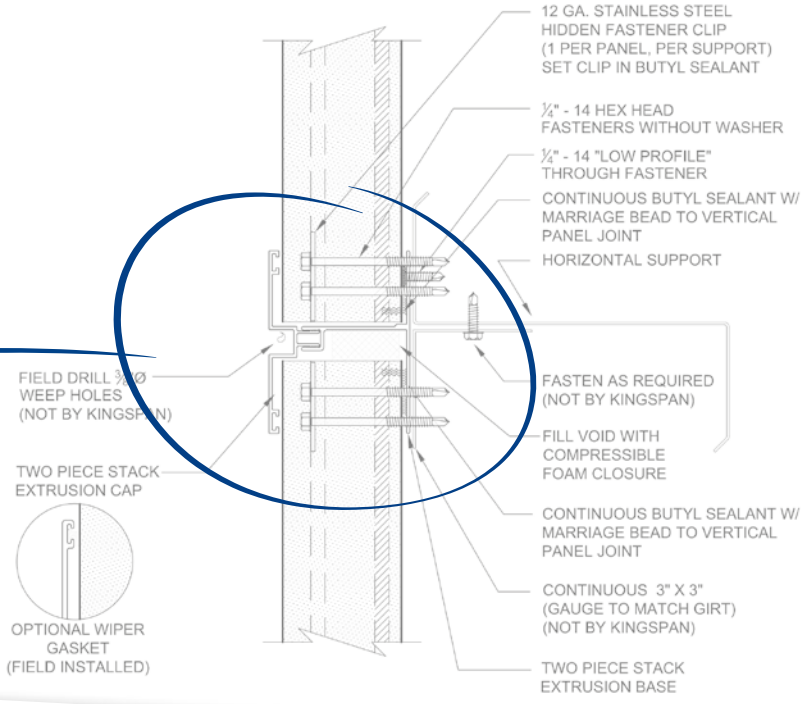
Location: Ketchikan, AK

Products: Striated

Building Type: Drydock repair facility

Sqft: 79,000

Architects: Kumin Associates Ins., Anchorage, AK



The Alaska Industrial Development and Export Authority (AIDEA), owner of the Ketchikan Shipyard of Ketchikan, AK, formed a construction plan to improve the shipyard's ability to serve a rapidly expanding Alaskan shipping industry. Vigor Industrial's Alaska Ship & Drydock (ASD), together with the Alaska Industrial Development and Export Authority (AIDEA), has dedicated a modern ship assembly hall at the Ketchikan Shipyard. This new building is a 70,000 square-foot manufacturing facility capable of constructing ships of up to 500 feet in length. The new hall allows the shipyard to handle larger vessels, such as the Alaska class ferries.

Dawson Construction Inc., of Bellingham, WA, was contracted to build the Ketchikan Shipyard assembly hall and its project manager was Paul Duersch. "The two primary challenges of this project were the height of the building and turning over a watertight building," said Duersch. "Ketchikan averages over 150 inches of rain a year, and the project is located in the windy Tongass Narrows."

For such a large-scale project as this, the Striated insulated metal panel proved to be the most efficient, cost-effective building solution possible. The ease and speed of the Kingspan insulated metal panels installation system eliminated the need to enclose or heat the building during construction. "The Striated panel is a great product and Kingspan is a good company to work with," Duersch said in closing. "We've used Kingspan products on many previous projects and we were happy with them on those jobs as well."

Duersch noted several primary benefits of working with Kingspan Insulated Panels to construct the Ketchikan Shipyard and Drydock. "Kingspan offered onsite installation training and warranty inspections, and their office support was quick to respond and thorough with their review of the project," he said. "Kingspan also did a great job working with us on the flashings and trim, revising their details to conform with all our requests."

Case Studies

High Street Mall

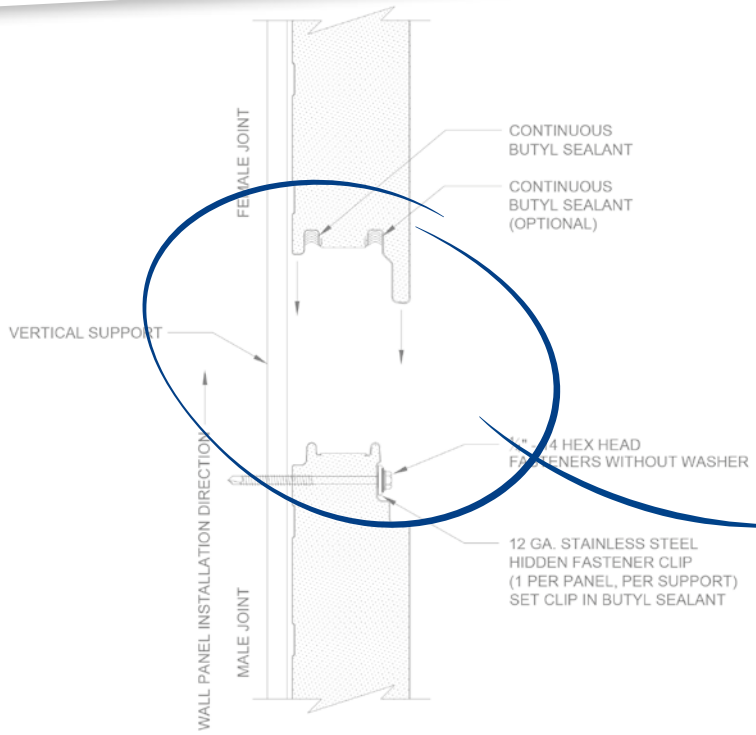
High Street Mall is set on 20 acres and provides three levels and 600,000 square feet of options for guests.

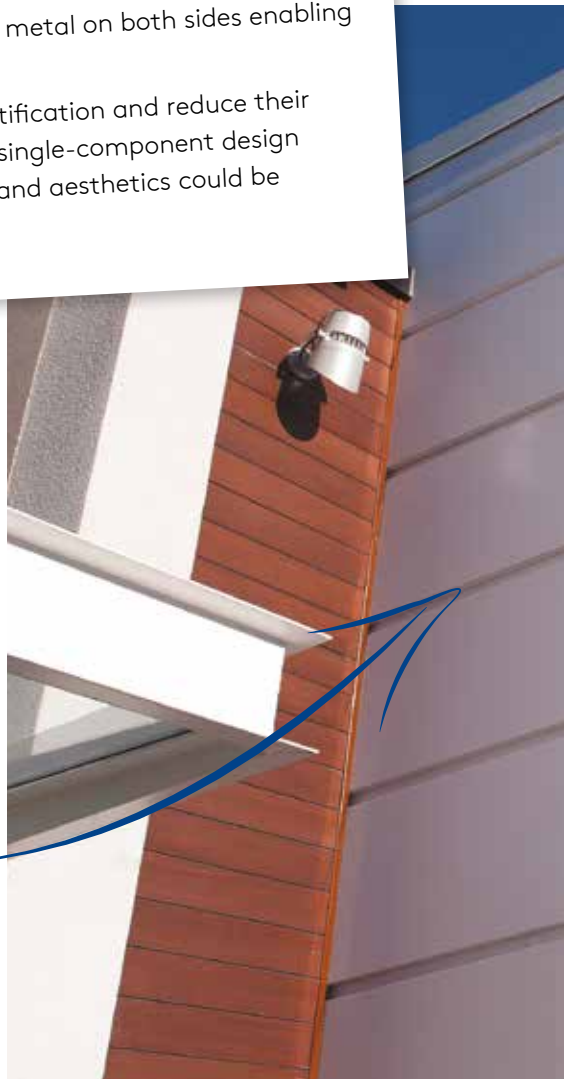
The Optimo™ and Micro Rib insulated metal panels were all specified for this project using four different colors. Combining these three insulated panel products with different colors and finishes in a horizontal orientation resulted in quite a bit of architectural flare, keeping with the Regional Urban Lifestyle Centre style of development.

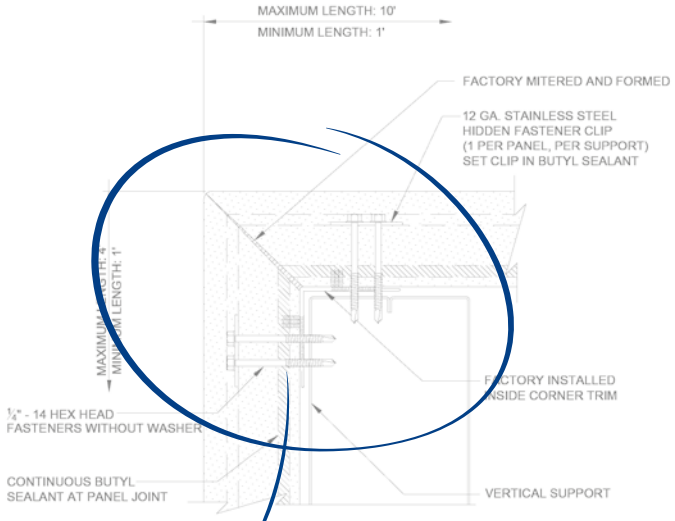
The single-component nature of the Optimo™ and Micro Rib panels enabled faster on-site installation compared to other multi-part options. They are an easy choice for those wishing to minimize construction delays. Kingspan insulated metal panels also contribute to a building's high performance with high R-value, superior airtightness, and low thermal bridging. The combination of these features can result in up to 30% energy savings over the life of the building.

When asked why Kingspan insulated panels were chosen for this project, Kate Larson of Flynn Canada Ltd., the building envelope trade contractor for the project, said "They have metal on both sides enabling larger spacing on stock framing."

The panels high performance allowed High Street Mall to achieve LEED® certification and reduce their carbon footprint, in keeping with the shopping centers overall mission. The single-component design allowed fast installation to please their anchor tenants. High performance and aesthetics could be combined without compromise.







Location: Abbotsford, BC
Products: Optimo™ and Micro-Rib
Building Type: Shopping center
Sqft: 120,000
Architects: Musson Cattell Mackey, BC

"The panels, up to 12 feet, result in the fastest installation time. The joint and corner designs also result in the fastest installation because you don't have to add additional metal."

Kate Larson of Flynn Canada Ltd

Case Studies

MacDill Air Force Base

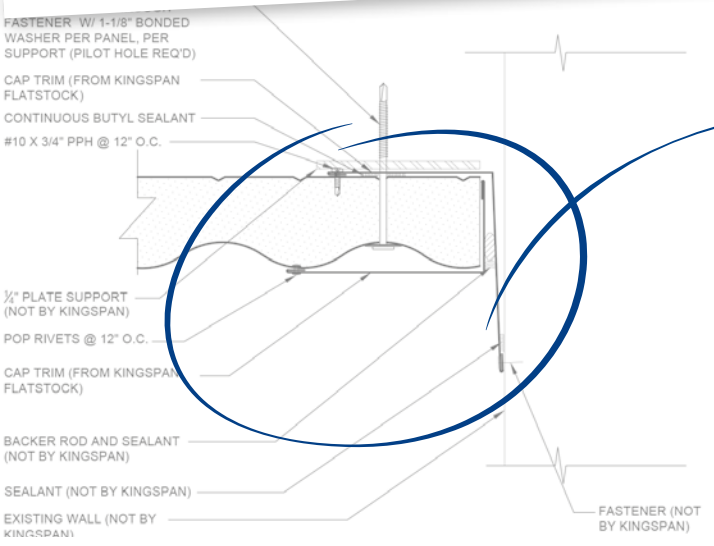
The Florida Historical Preservation Office (FHPO), MacDill Air Force Base in Tampa, Florida, received permission to renovate its 1940s vintage hangars. Historic Hangar 1 was slated to be the first to receive upgrades that will allow it to remain operable for 70 more years. The project, budgeted at more than $2.4 million, Kingspan's Wave wall panel system was the product chosen for the new cladding of Hangar 1. The base commander's vision for MacDill Air Force Base is called "Architecture of Community." The goal is to create buildings with excellent architecture that displays a high quality corporate image.

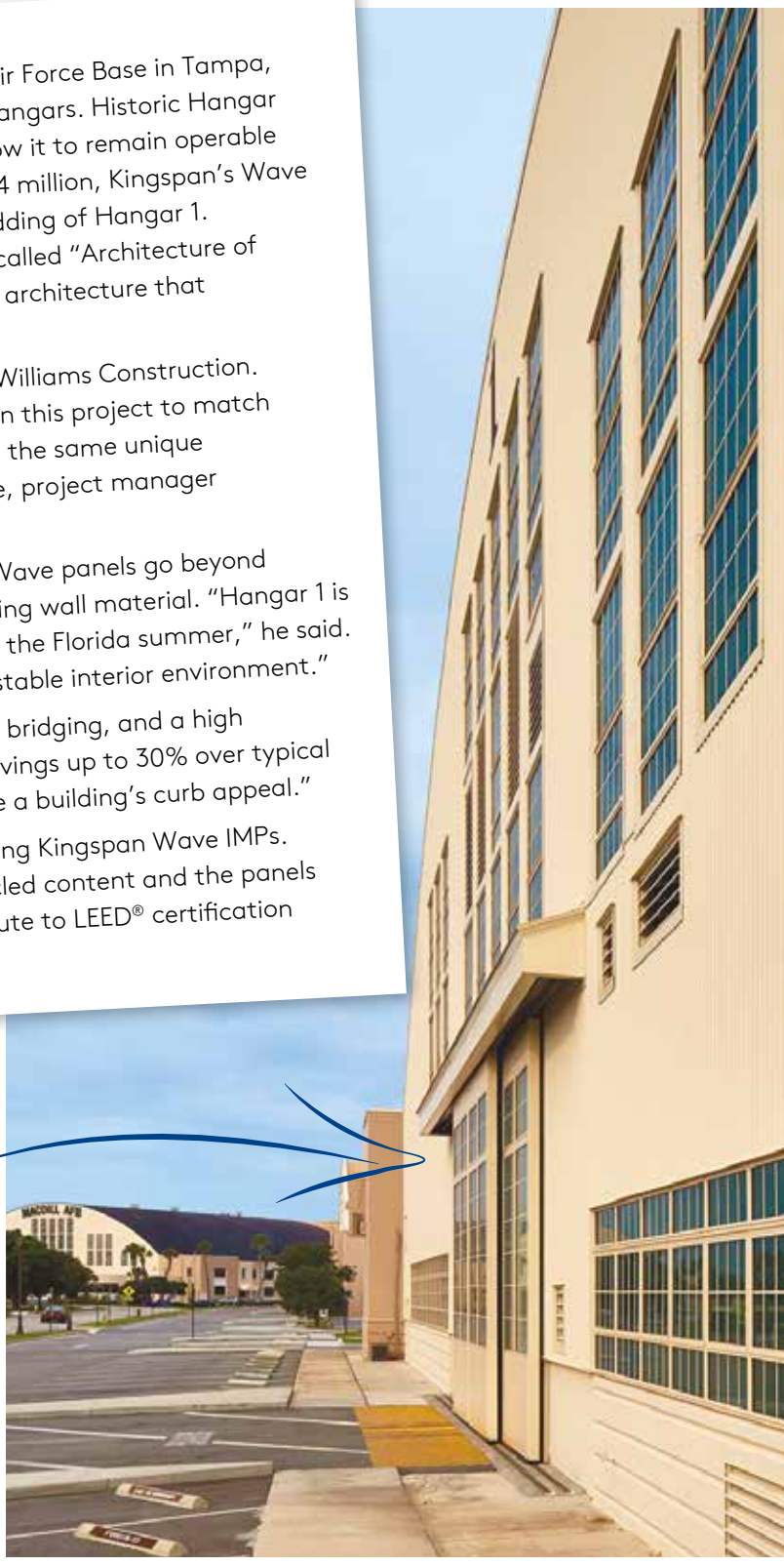
The contract for re-siding Hangar 1 was awarded to R.M. Williams Construction. Based in Tampa, Florida, "Our company was challenged on this project to match the wall panels, steel windows and hangar doors to retain the same unique design features as the original construction," said Jim Roe, project manager for R.M. Williams Construction.

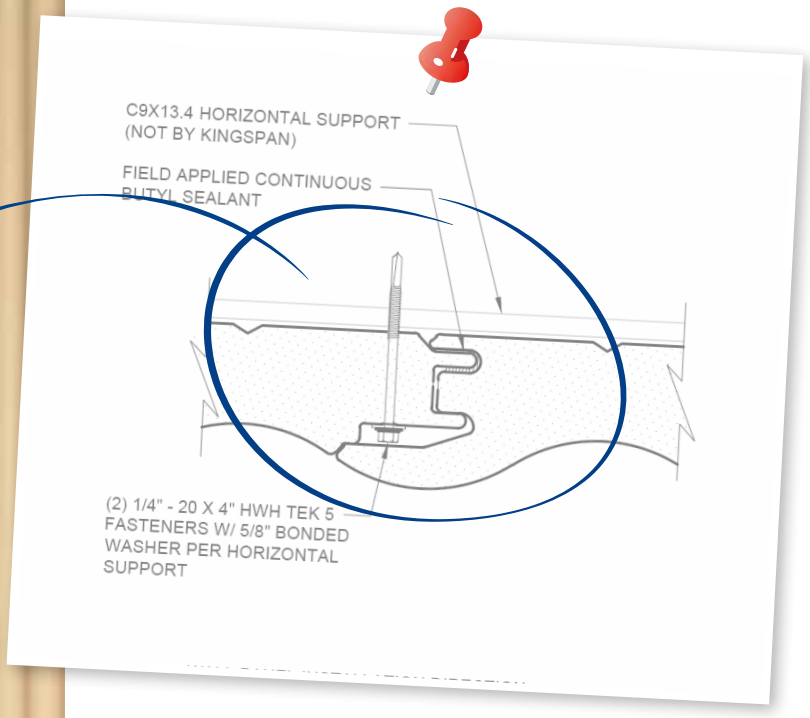
According to Roe, the benefits of using Kingspan 400 V-Wave panels go beyond meeting the historical requirement of matching the existing wall material. "Hangar 1 is situated in a very open area that can become very hot in the Florida summer," he said. "Kingspan Wave panels are insulated and help ensure a stable interior environment."

"These panels provide superior air tightness, low thermal bridging, and a high R-value," said Jim Roe. "This can result in energy cost savings up to 30% over typical multi-part built-up systems, plus they definitely enhance a building's curb appeal."

Many environmental benefits are also gained by specifying Kingspan Wave IMPs. The exterior skins contain a substantial amount of recycled content and the panels themselves are recyclable. Kingspan Wave IMPs contribute to LEED® certification programs and the Path To NetZero™ energy targets.



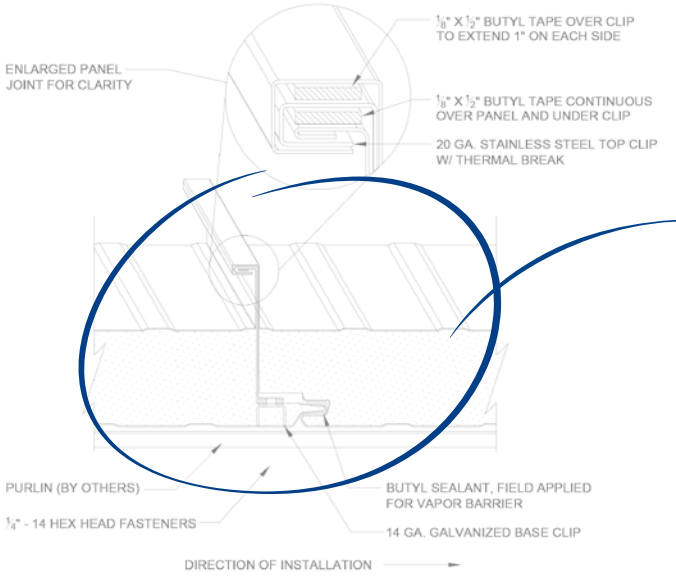




Location: Tampa, FL
Products: Wave and Azteco®
Building Type: Aviation Hangar
Sqft: 15,000
Architects: 6th Civil Engineering Squadron

Case Studies

Chappellet Winery



Location: Napa Valley, CA

Products: KingZip™, Minor-Rib and Wave

Building Type: Winery

Sqft: 41,000

Architects: Division 13 Buildings, CA

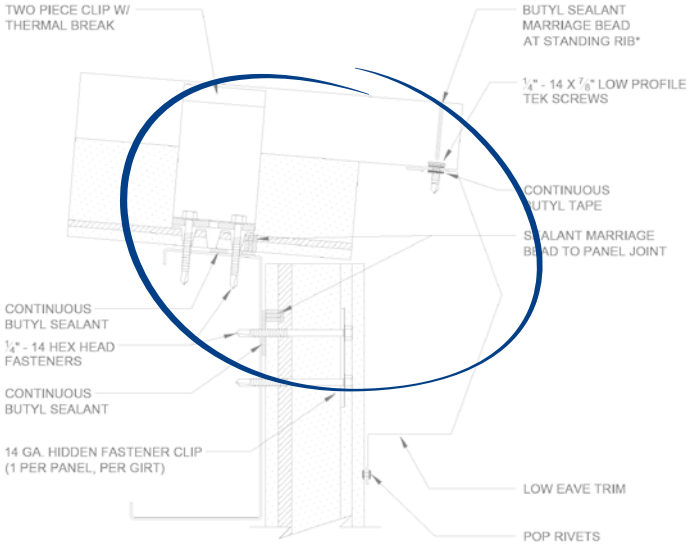
The Chappellet Winery sits on picturesque Pritchard Hill, near St. Helena, in California's famed Napa Valley. Its owners commissioned construction of a structure called a barrel chai, a wine aging room that requires a very controlled interior environment.

Division 13 Buildings, Inc., of Windsor, California was the Design Build Metal Building Contractor "The Chappellet Winery storage facility project was a pre-engineered metal building structure," said Marc Davis, president and owner of Division 13 Buildings. "Because of previous successful projects, it was decided to use Kingspan insulated metal panels on both the roof and walls."

"The design also called for the entire roof of the barrel chai to be covered in solar panels," said Davis. "The Kingzip™ roofing panel made attachment very easy." In total, approximately 25,000 square feet of Kingzip™ panels, in 6" thickness, were installed to create the roof system.

KingZip™ metal roofing panels have been proven to ensure that a building remains both air and weathertight over its life. The building envelope of the barrel chai was constructed with 8,750 square feet of Kingspan Minor Rib panels in 2", 3", and 5" thicknesses, and 6,500 square feet of Kingspan 3" thick Wave panels. Kingspan Wave and Minor Rib insulated metal panels were used primarily as an insulating product, but also because they offered a look that added to the winery's pastoral appearance.

Davis is very impressed that the KingZip™ one-step installation can reduce on-site installation time by up to 50% compared to conventional roof systems. "There were several unique features on this project due to the special needs of a winery and compounded by its location in an area of high humidity, the Kingspan products were well suited to these environments and performed better than other products."



Case Studies

Mendocino Transit Authority

In August 2012, the Mendocino County agency dedicated its new bus maintenance facility in the county seat of Ukiah. The 17,196-square-foot structure features maintenance bays along with fueling and vehicle wash areas, plus storage space.

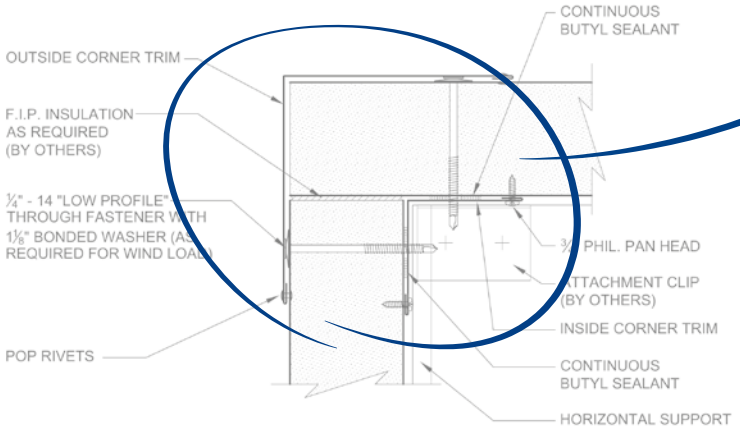
Division 13 Buildings, Inc., of Windsor, California, installed 6-inch KingZip™ insulated roofing panels and Optimo™ insulated wall panels as part of the project.

Davis said Kingspan products were ideal for the maintenance building because of the panels durability, high insulation values, ease of installation, and eye-catching finishes.

The KingZip™ standing seam insulated metal roof panel combines impressive R-values with low thermal bridging and superior airtightness. This can reduce energy consumption in buildings by nearly a third when compared to standard cavity insulation systems.

Kingspan's Optimo™ insulated wall panels also are single-component products and offer the same energy-efficiency benefits provided by KingZip™. Davis added that Optimo™ wall panels contributed greatly to the "architectural appeal" of the MTA project "It's a good-looking structure," he said.

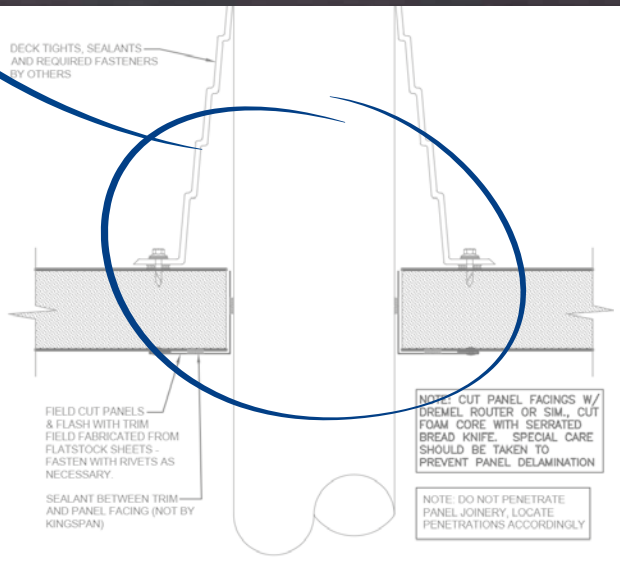
TLCD Architecture notes that the insulated metal roof and wall panels attached directly to the metal structure of the bus maintenance facility. TLCD writes of the MTA job, "The metal panels sit on a base of patterned concrete block walls that provide protection from vehicles."



"These panels do not require painting or maintenance and are one of the many sustainable features of this project"

Marc Davis, Division 13

Location: Mendocino, CA
Products: KingZip™ and Optimo
Building Type: Transportation
Sqft: 23,000
Architects: TLCD Architecture



Case Studies

Maui Brewing Company

The award winning Maui Brewing Company expanded to a brand new 42,000 square foot facility in order to meet its overwhelming demand.

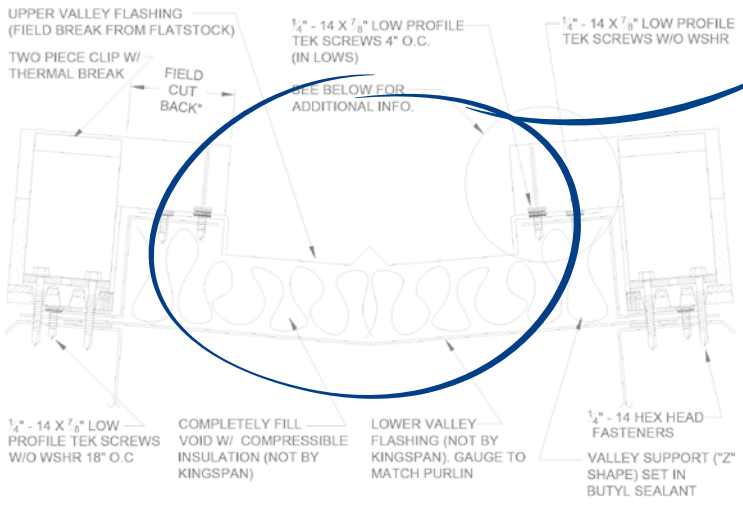
The KingZip™ insulated standing seam roof panels allowed installers to trim to fit as the KingZip™ seam navigated valley gutters, and even a roof cricket, across multiple level changes from peeks high to low. And with various pieces of equipment (including HVAC units and exhausts) needing to penetrate the roof, the owner found that KingZip™ made sealing around these protrusions simple.

Granitstone exterior wall panels and 300 Series interior wall panels were used because of their high level R-value, reducing thermal bridging and creates the best thermal envelope.

When asked about using Kingspan Insulated Panels in the future, Maui Brewing Company Founder Garrett Marrero stated, "I'm stoked about my roof and can't think of a better product. Our next building will certainly be KingZip™ as well."

Since the design is a multifaceted facility including a brewpub, a retail shop, offices, and production brewery — aesthetics were also an important factor.

Marrero recalls, "Over 40,000 square feet was installed with gutters downspouts, etc. in 3.5 weeks, which helped us gain back lost time on the schedule." The founder went on to speak on how they chose Kingspan over other panels because, "they go down in far less time than comparable metal roofing." Speed of build is very important in any industry, but as Maui Brewing continues to grow, eliminating delays was vital.



Location: Kihei, Hawaii
Products: KingZip™ and Granitstone
Building Type: Brewery
Sqft: 42,000
Architects: WCIT Architecture


OUTSIDE RIDGE TRIM
(SET IN BUTYL TAPE)
TWO PIECE CLIP W/
THERMAL BREAK
RIDGE CLOSURE TRIM
FIELD FILL WITH COMPRESSIBLE
INSULATION OR FIELD FOAM WITH
2-PART URETHANE (NOT BY KINGSPAN)
INSIDE RIDGE TRIM
(SET IN CONTINUOUS
BUTYL SEALANT)
KINGZIP FOAM CLOSURE SET IN
BUTYL TAPE TOP AND BOTTOM
SEALANT MARRIAGE BEAD
TO PANEL JOINT
1/4" - 14 HEX HEAD FASTENERS
(AS REQUIRED FOR WIND LOADS)

Case Studies

Alaska Airlines Center

Installation of a secure building envelope was achieved quickly and easily by utilizing Kingspan KarrierPanel™. The advantages of using this product, and its integrated KarrierRail™ system, allowed for a faster speed of build and a solid weathertight enclosure.

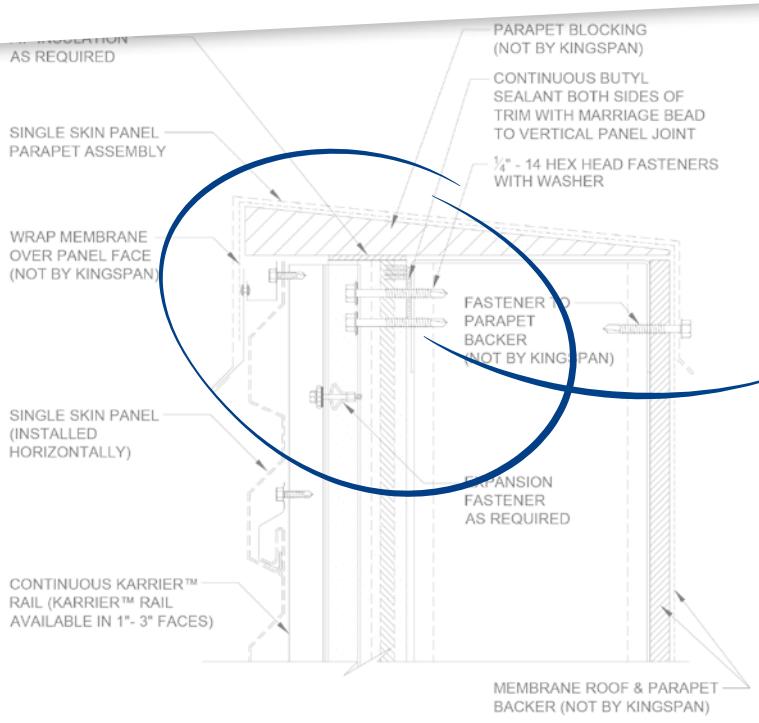
The University of Alaska at Anchorage (UAA) commissioned architectural firm McCool Carlson Green to design a dynamic arena worthy of the future vision for its athletic programs. The result is Alaska Airlines Center, a 5,600-seat multi-tiered performance arena that will host sporting events, graduation ceremonies, and concerts, as well as university and community activities.

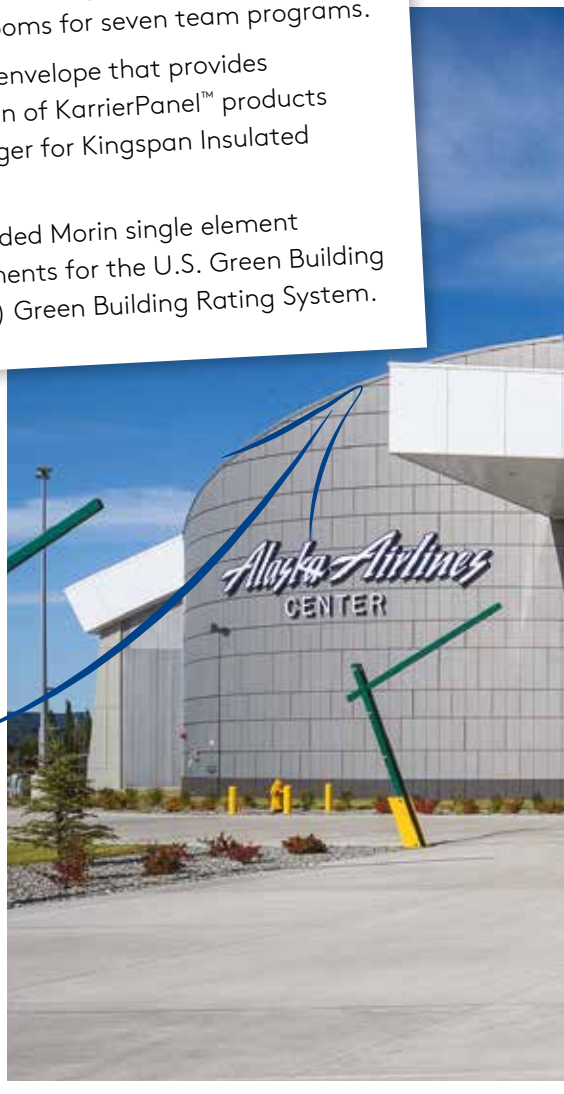
Cornerstone General Contractors of Anchorage were chosen to construct UAA's $109 million sports arena having previously been involved with UAA for more than 15 years and helped develop the UAA Construction Management Program.

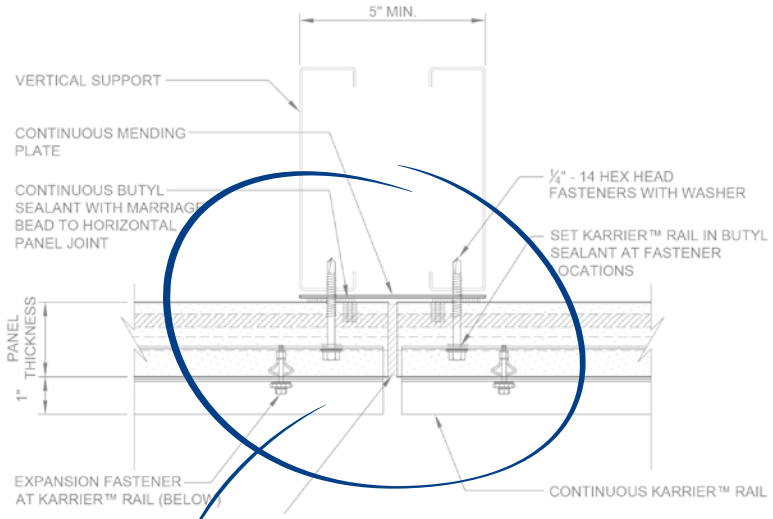
The 196,000 square foot facility has a primary gym, an auxiliary gym and also has space for training rooms, offices for coaches and administration staff, a laundry, and locker rooms for seven team programs.

Over 100,000 square feet of KarrierPanel™ were installed to form a building envelope that provides a vapor barrier and high R-value insulation. "This was the biggest installation of KarrierPanel™ products in the Northwest in the last decade," said Bill Sandahl, regional sales manager for Kingspan Insulated Panels, North America.

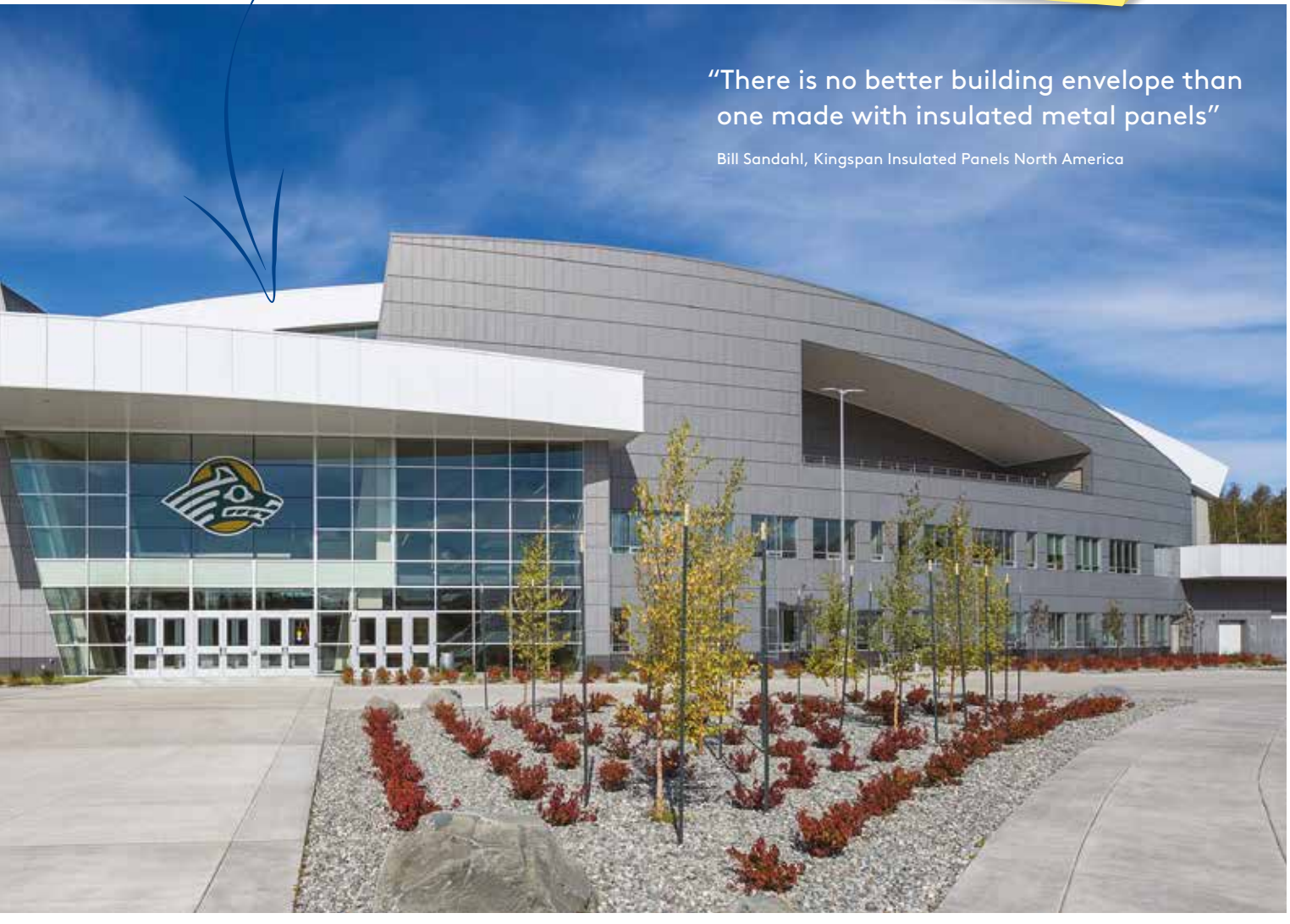
The cladding materials that were placed on the Alaska Airlines Center included Morin single element panels. These panels are recyclable and contribute to meeting the requirements for the U.S. Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED®) Green Building Rating System.







Location: Anchorage, AK
Products: KarrierPanel
Building Type: Sports arena
Sqft: 100,000+
Architects: McCool Carlson Green



"There is no better building envelope than one made with insulated metal panels"

Bill Sandahl, Kingspan Insulated Panels North America

Case Studies

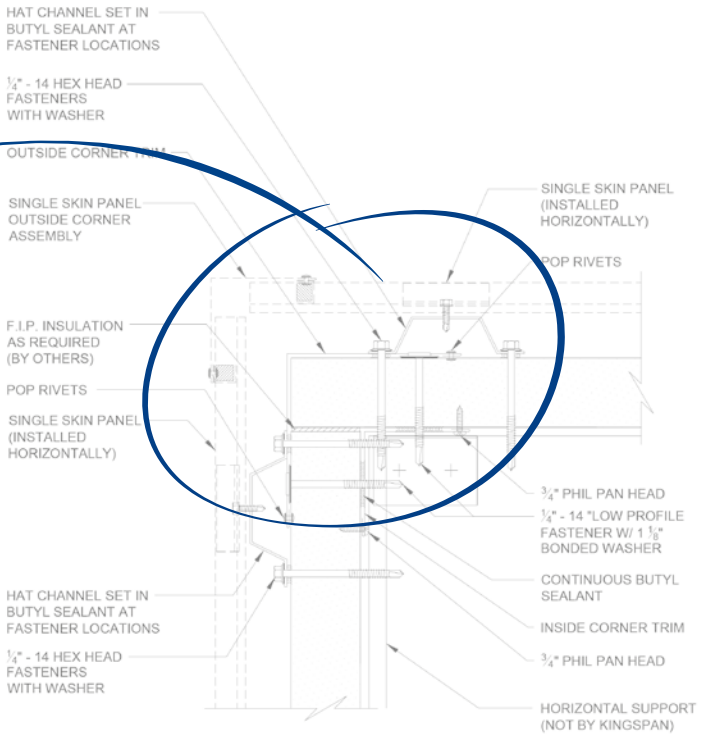
Cumberland Farms

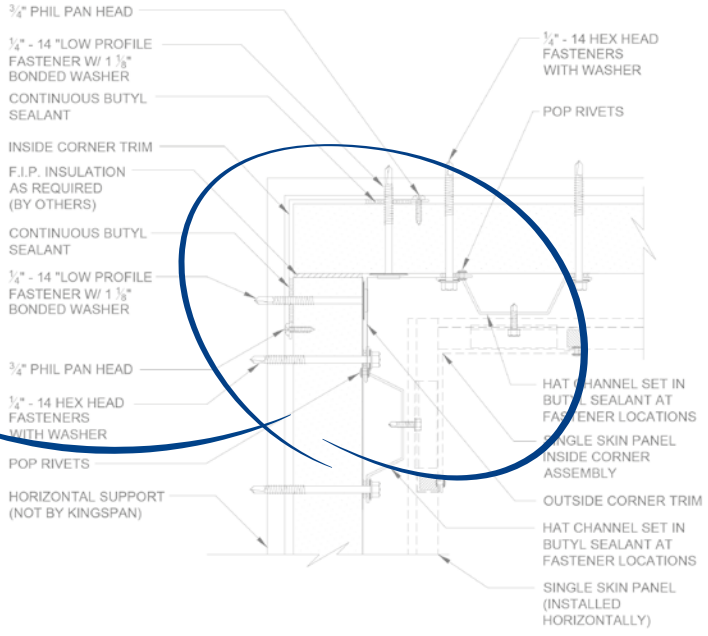
Since 2009, Cumberland Farms has been rebranding by updating legacy stores and building new ones. The company experimented with several new exterior styles to build around their updated corporate colors of green and blue. They wanted a better looking image to characterize their facilities. But the primary need was for the new facilities to be constructed quickly and with the quality needed to perform well for years to come. The primary objective for the BES designers was to standardize a building that could be reproduced quickly and efficiently. However, it had to have a stable, airtight internal environment that would be able to perform economically for Cumberland Farms.

To prepare for adding new facilities in South Florida, Cumberland Farms commissioned Building Envelope Systems (BES), a Massachusetts-based construction firm, to assist in designing a structure format that could be quickly built and efficiently functional. BES, a structural steel design/build specialist created a structural steel frame store enclosed with insulated metal panel assemblies manufactured by Kingspan Insulated Panels.

Kingspan KarrierPanel was specified because it serves a variety of functions at once, which aid and assist build speed in the short-term, as well as serve to keep the building operating efficiently over time. In a single pass, the wall panel becomes the mounting for the exterior façade, and also becomes the finished interior wall. This enabled the building crew to enclose the job sooner and allow work to begin on the interior installation of the large amount of refrigeration and wiring needed to operate a convenience store.

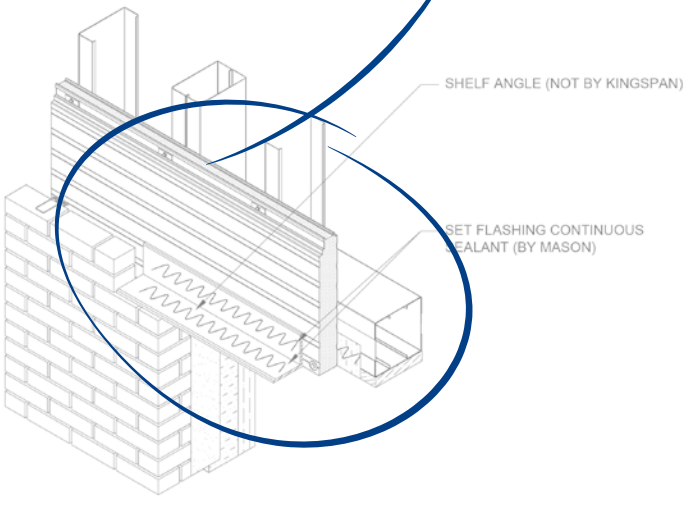
Location:	West Palm Beach, FL
Products:	KarrierPanel
Building Type:	Retail
Sqft:	4,000
Architects:	Building Envelope Systems, MA


HAT CHANNEL SET IN BUTYL SEALANT AT FASTENER LOCATIONS
¼" - 14 HEX HEAD FASTENERS WITH WASHER
OUTSIDE CORNER TRIM
SINGLE SKIN PANEL OUTSIDE CORNER ASSEMBLY
F.I.P. INSULATION AS REQUIRED (BY OTHERS)
POP RIVETS
SINGLE SKIN PANEL (INSTALLED HORIZONTALLY)
HAT CHANNEL SET IN BUTYL SEALANT AT FASTENER LOCATIONS
¼" - 14 HEX HEAD FASTENERS WITH WASHER
SINGLE SKIN PANEL (INSTALLED HORIZONTALLY)
POP RIVETS
¾" PHIL PAN HEAD
¼" - 14 "LOW PROFILE FASTENER W/ 1 ⅛" BONDED WASHER
CONTINUOUS BUTYL SEALANT
INSIDE CORNER TRIM
¾" PHIL PAN HEAD
HORIZONTAL SUPPORT (NOT BY KINGSPAN)


¾" PHIL PAN HEAD
¼" - 14 "LOW PROFILE FASTENER W/ 1 ⅛" BONDED WASHER
CONTINUOUS BUTYL SEALANT
INSIDE CORNER TRIM
F.I.P. INSULATION AS REQUIRED (BY OTHERS)
CONTINUOUS BUTYL SEALANT
¼" - 14 "LOW PROFILE FASTENER W/ 1 ⅛" BONDED WASHER
¾" PHIL PAN HEAD
¼" - 14 HEX HEAD FASTENERS WITH WASHER
POP RIVETS
HORIZONTAL SUPPORT (NOT BY KINGSPAN)
¼" - 14 HEX HEAD FASTENERS WITH WASHER
POP RIVETS
HAT CHANNEL SET IN BUTYL SEALANT AT FASTENER LOCATIONS
SINGLE SKIN PANEL INSIDE CORNER ASSEMBLY
OUTSIDE CORNER TRIM
HAT CHANNEL SET IN BUTYL SEALANT AT FASTENER LOCATIONS
SINGLE SKIN PANEL (INSTALLED HORIZONTALLY)

Case Studies

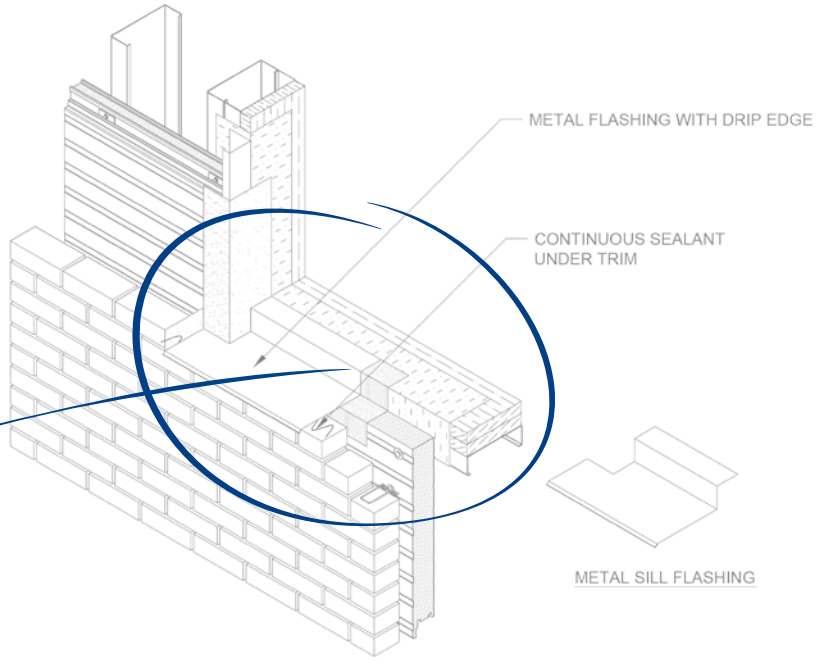
University of Tennessee Residence Hall



Location: Knoxville, TN
Products: KarrierPanel
Building Type: Education
Sqft: 103,000
Architects: Cope Associates

"The KarrierPanel™ system allows us to create a state-of-the-art, sustainable building while complementing the architectural style and look of the existing buildings on campus"

Rich Schoenberg, Unified Building Systems, an AES Clean Technology, Inc. company



The Fred D. Brown, Jr. Residence Hall on the University of Tennessee Knoxville campus is the first new residence hall constructed at UT since 1967.

The goal was to give students what they treasure most – more privacy and more residential style. Creating that feel in a residential high rise is a challenge.

The KarrierPanel™ barrier wall system was selected to increase the speed of construction, minimize delays, and reduce the number of trades required for installation.

In addition to the customized, single-source panels, the façade of the building features over 100,000 square feet of brick rainscreen.

"The barrier wall system's exterior skins contain a substantial amount of recycled content, making the system an environmentally conscious choice as well" said Rich Schoenberg, director of installation with Unified Building Systems.

The layout includes two distinctive types of living units designed into a pod arrangement to create more of a community while still imparting a homier feel.

The new Fred D. Brown, Jr. Residence Hall is designed to meet the State of Tennessee Sustainability Design Guidelines.

Field Service Program

Kingspan Insulated Panels

Kingspan provides installation training and classes conducted by members of our technical services team

On-site service & support

Technical support & installation guidance

- ◇ Panel Installation Classes
- ◇ Weathertightness Warranty Inspection
- ◇ Installation Inspection

www.kingspanpanels.com

Kingspan
Insulated Panels

Construction Details

Construction Details: Vertical

Panels on Metal Studs

"Install vertical panels onto horizontally oriented supports"

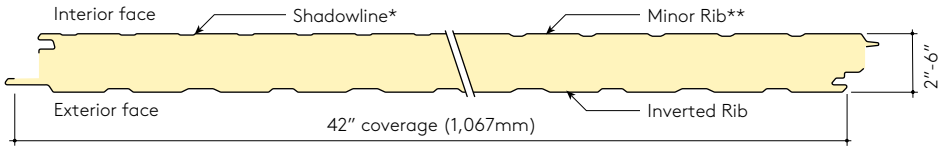
Panels on Structural Steel

Panels on Concrete or Masonry

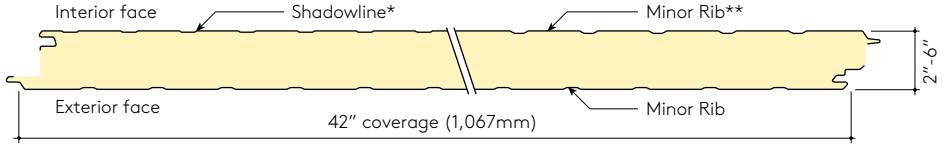
Construction Details: Vertical

Panel Profiles

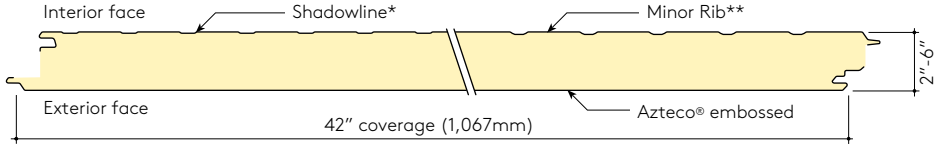
200 Inverted Rib



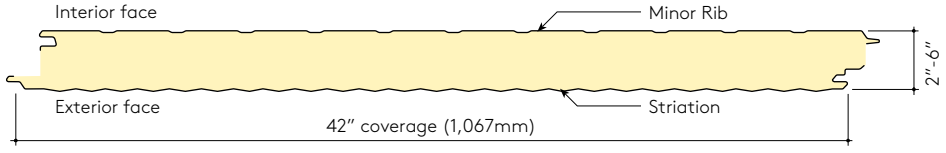
300 Minor Rib



300 Azteco® Embossed

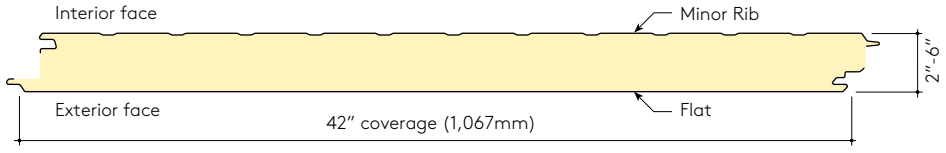


300 Striated

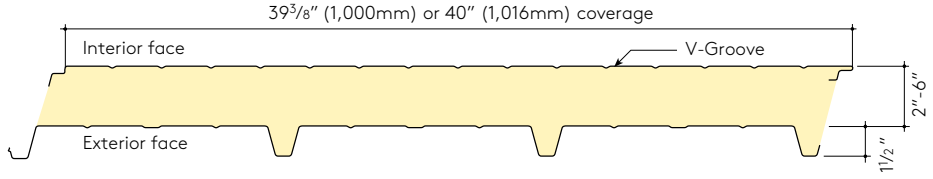


Construction details for 200/300/400 series products are similar to KS Series. Consult technical services for additional details.

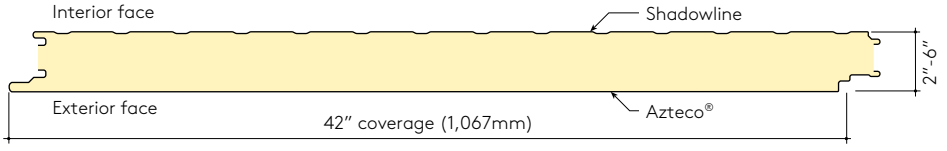
300 Granitstone®



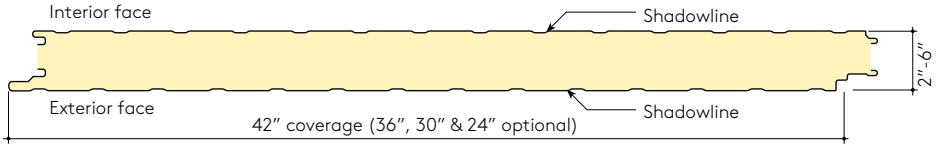
900 High Rib



KS Azteco®



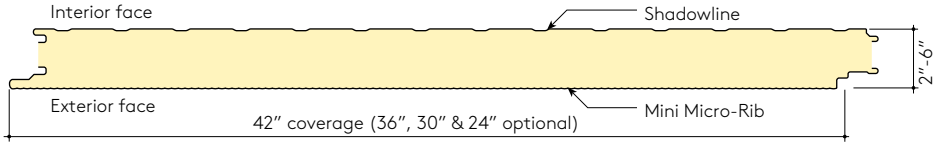
KS Shadowline



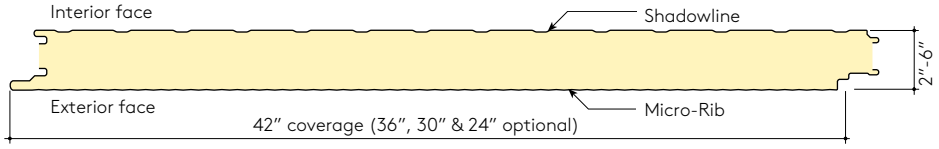
Construction Details: Vertical

Panel Profiles

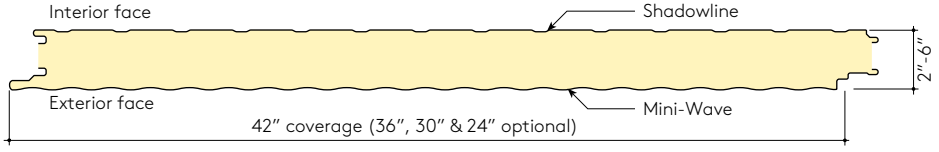
KS Mini Micro-Rib



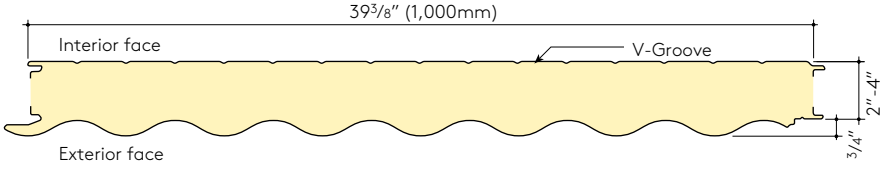
KS Micro-Rib



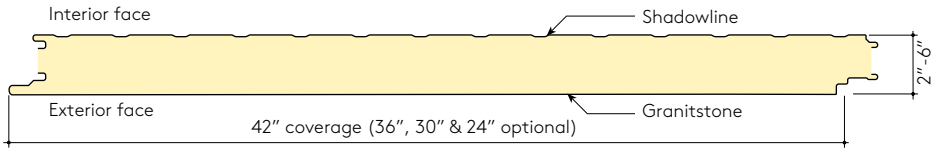
KS Mini-Wave



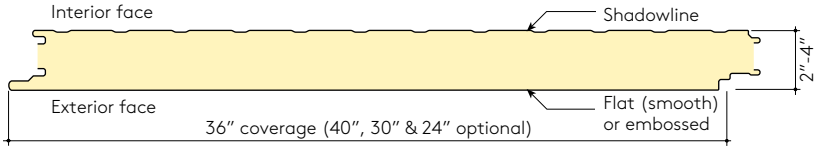
400 Wave



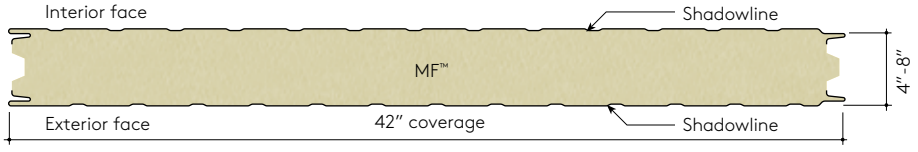
KS Granitstone®



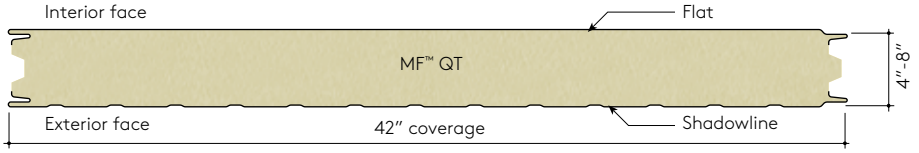
Optimo™



MF™



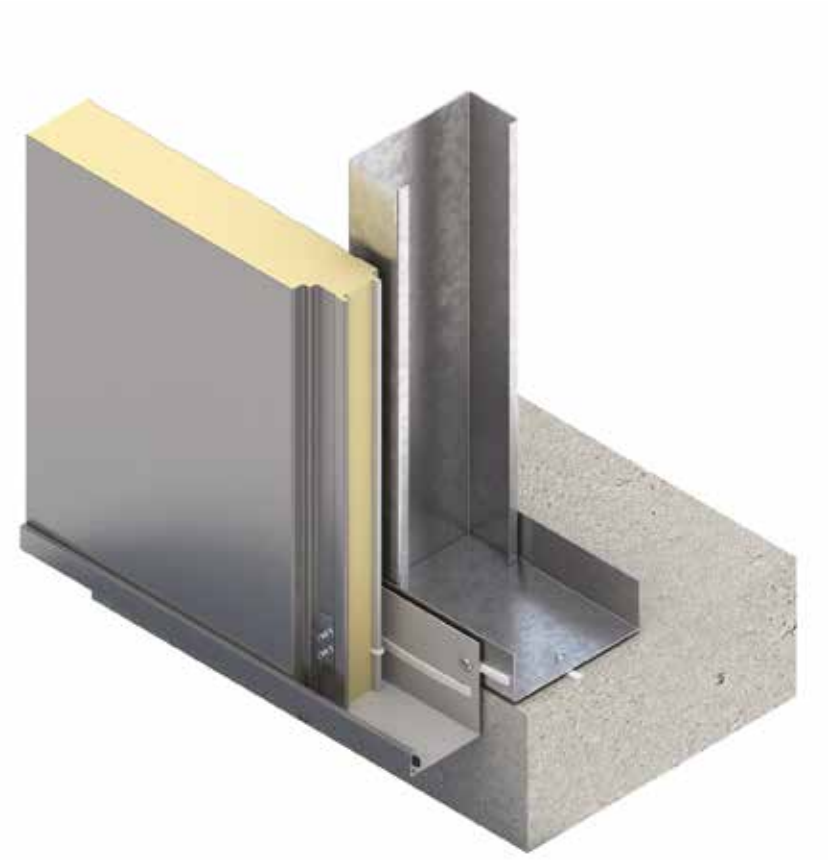
MF™ QT

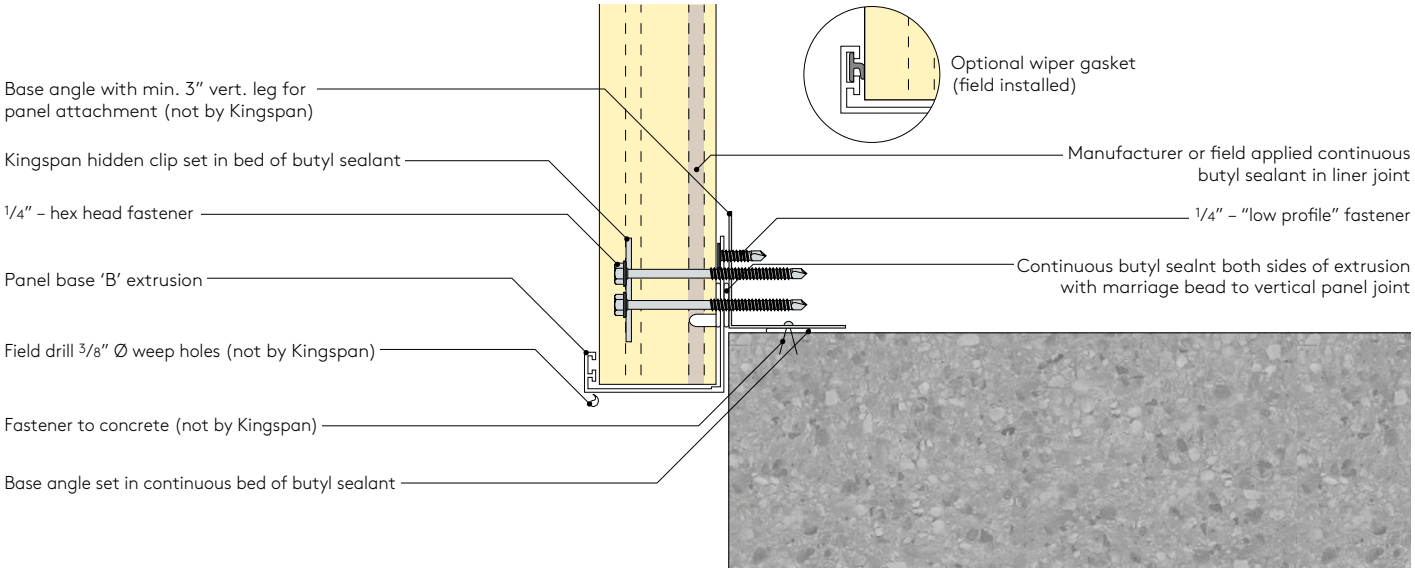


*Through fastener only.

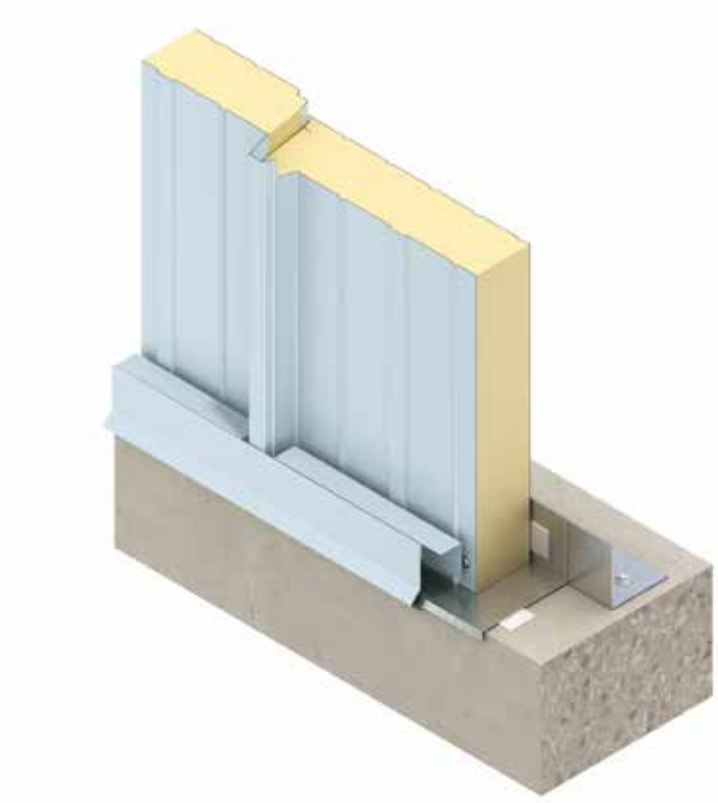
Construction Details: Vertical

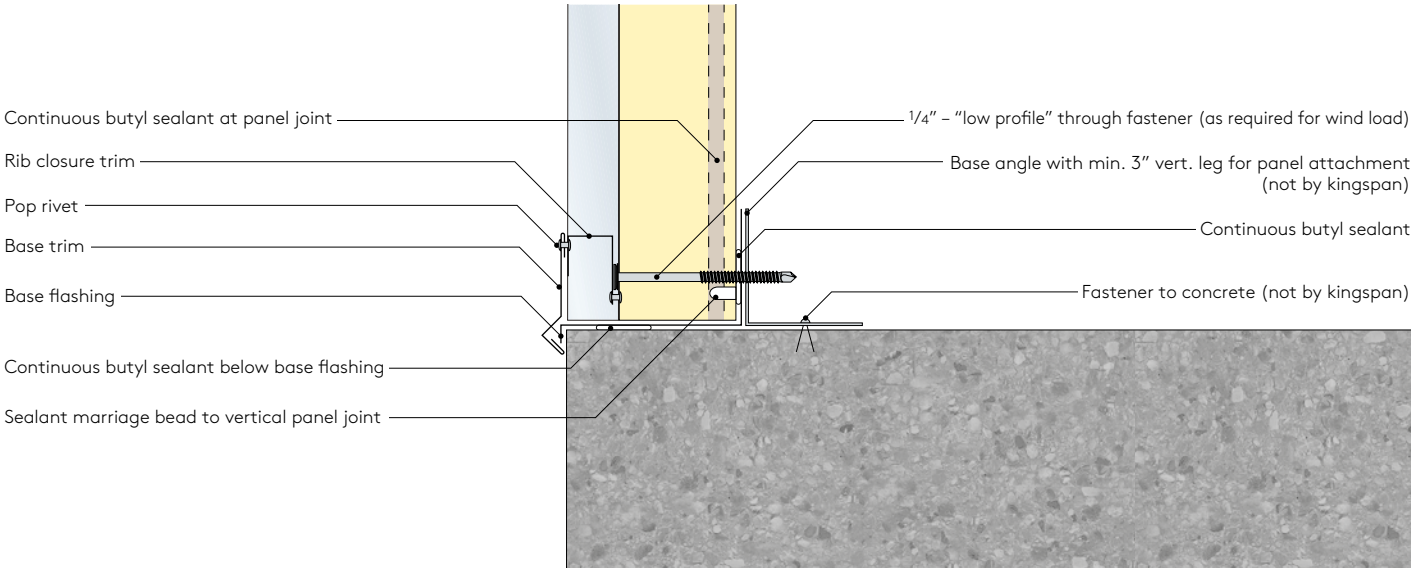
KS Series Vertical Base





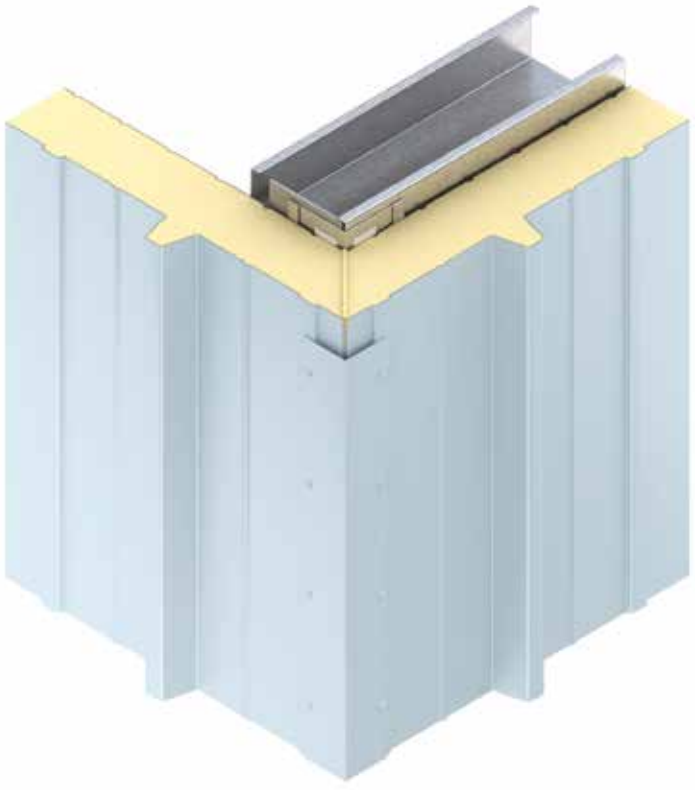
900 Series Vertical Base

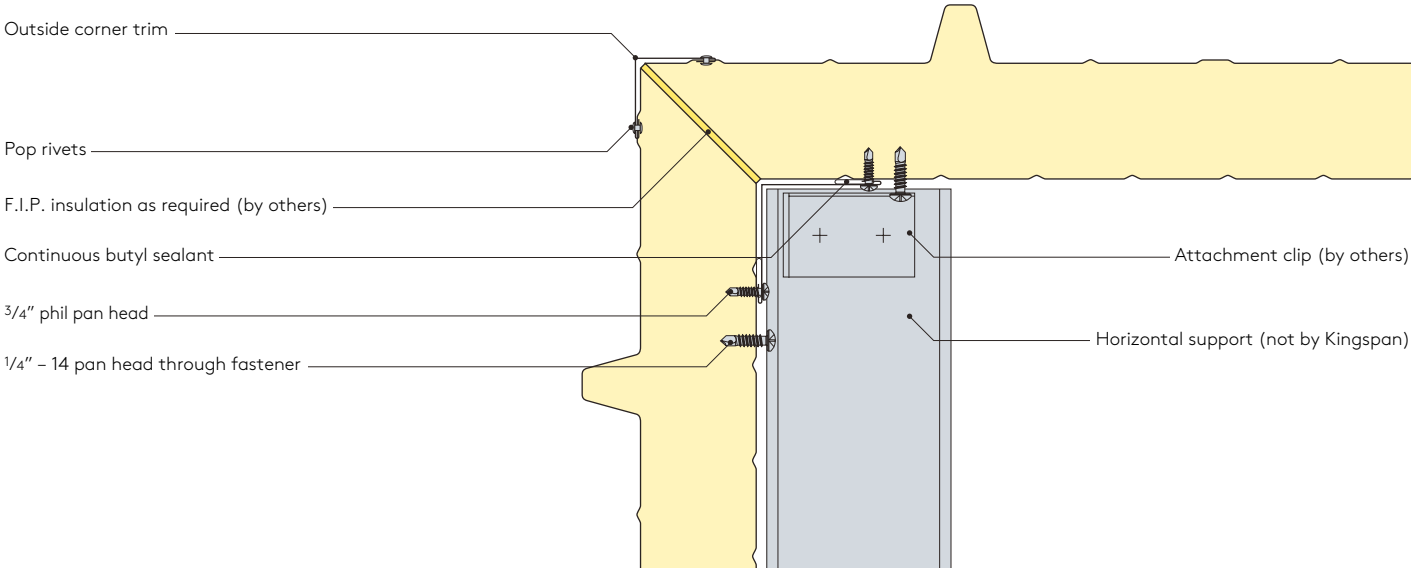




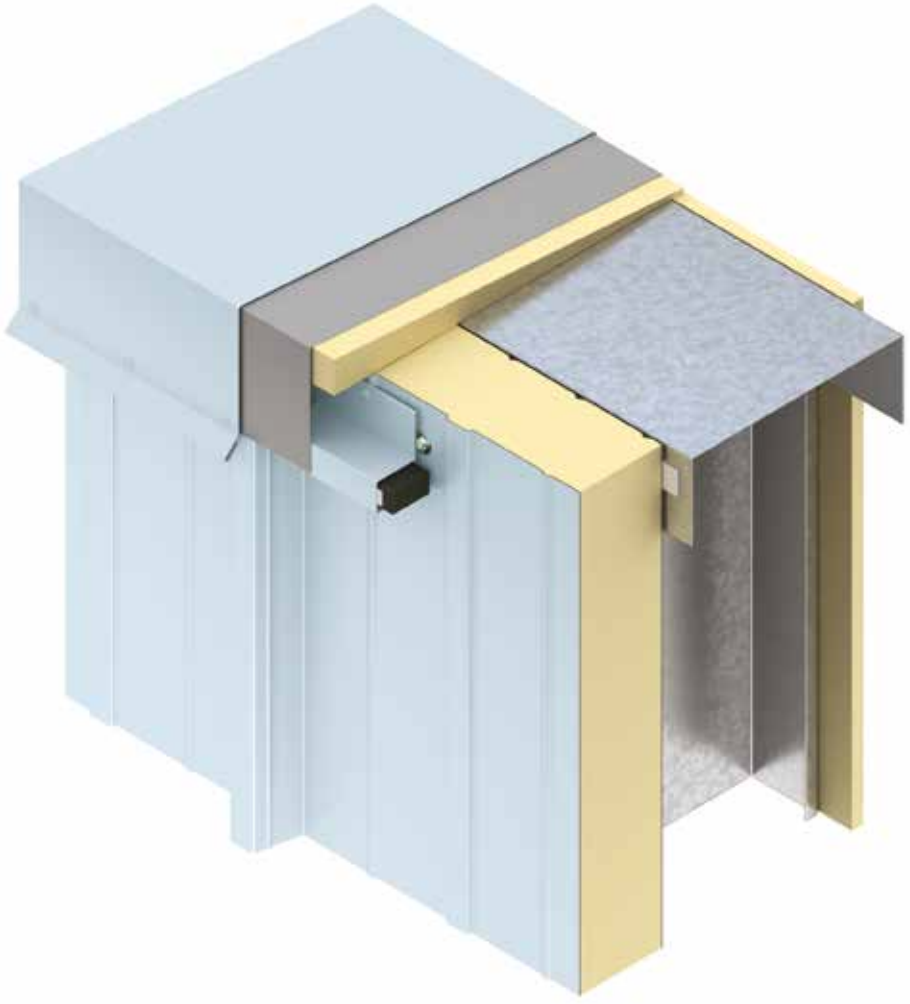
Construction Details: Vertical

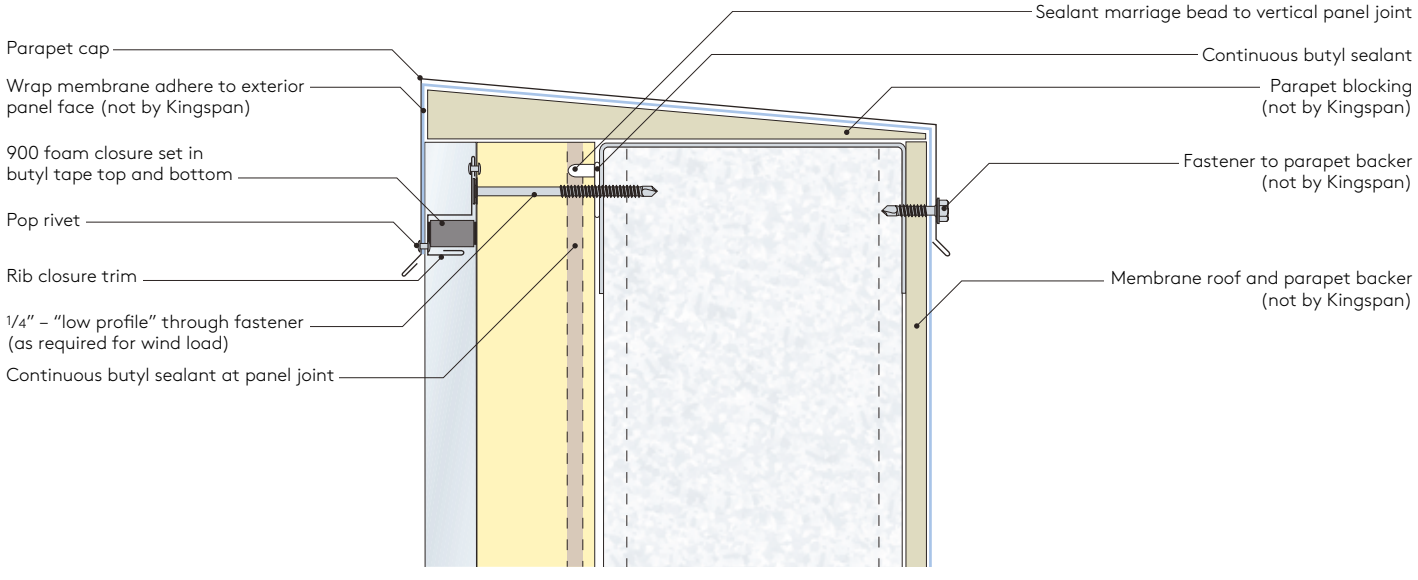
900 Series Outside Corner with Flat Trim





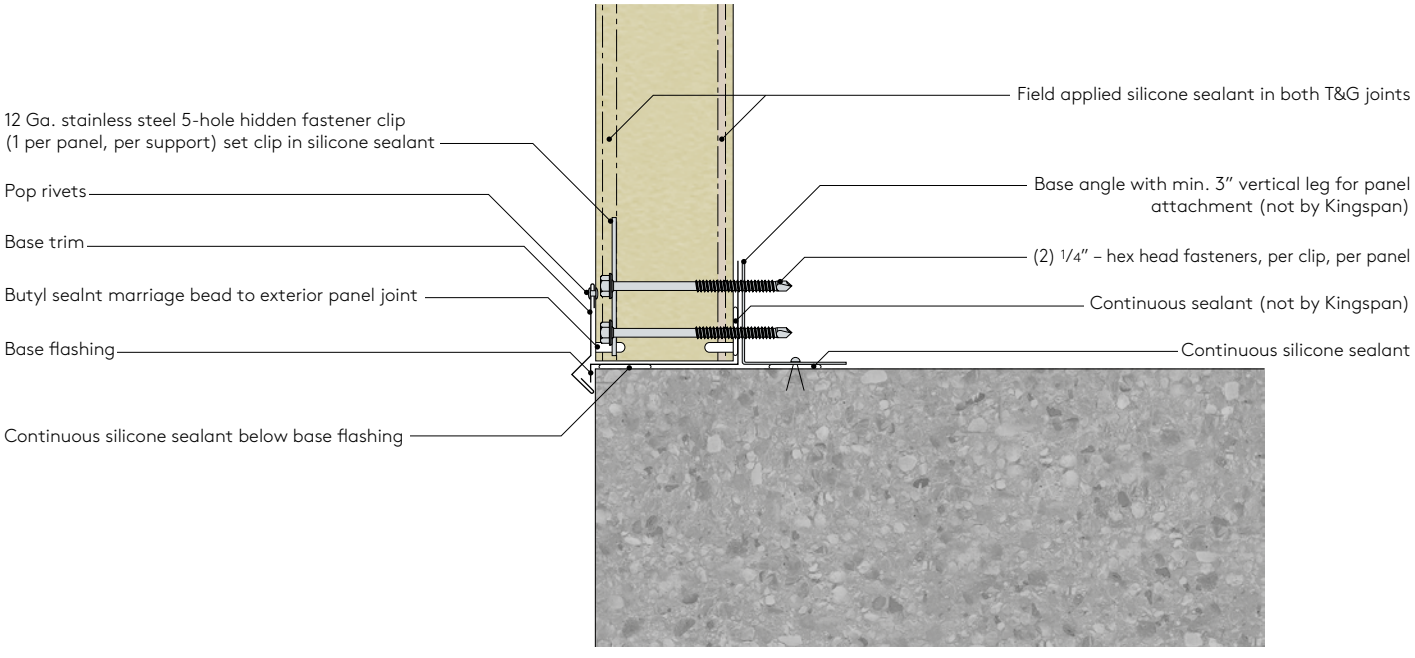
900 Series Parapet with Flush Trim



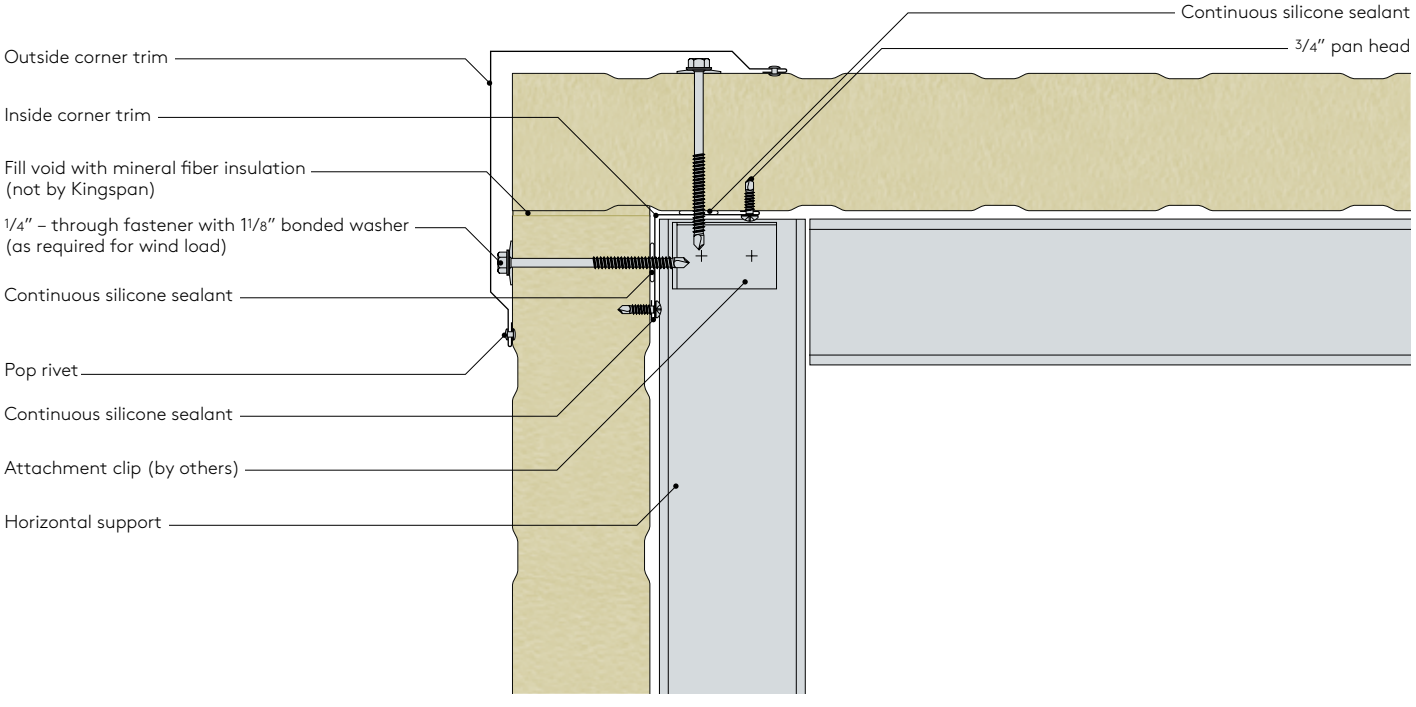


Construction Details: Vertical

MF™ Flush Base

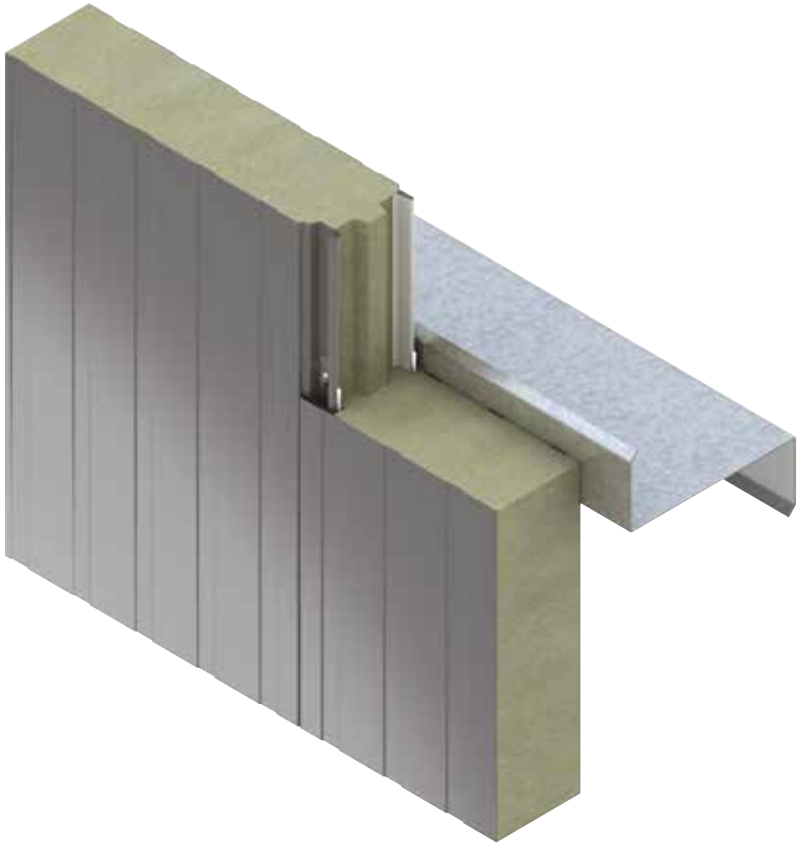


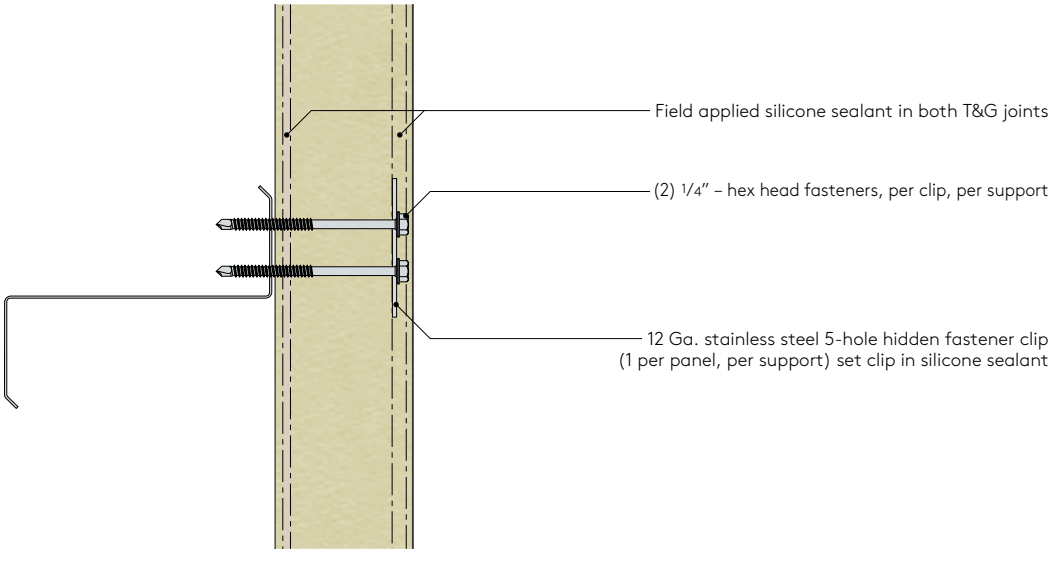
MF™ Outside Corner with Profiled Trim



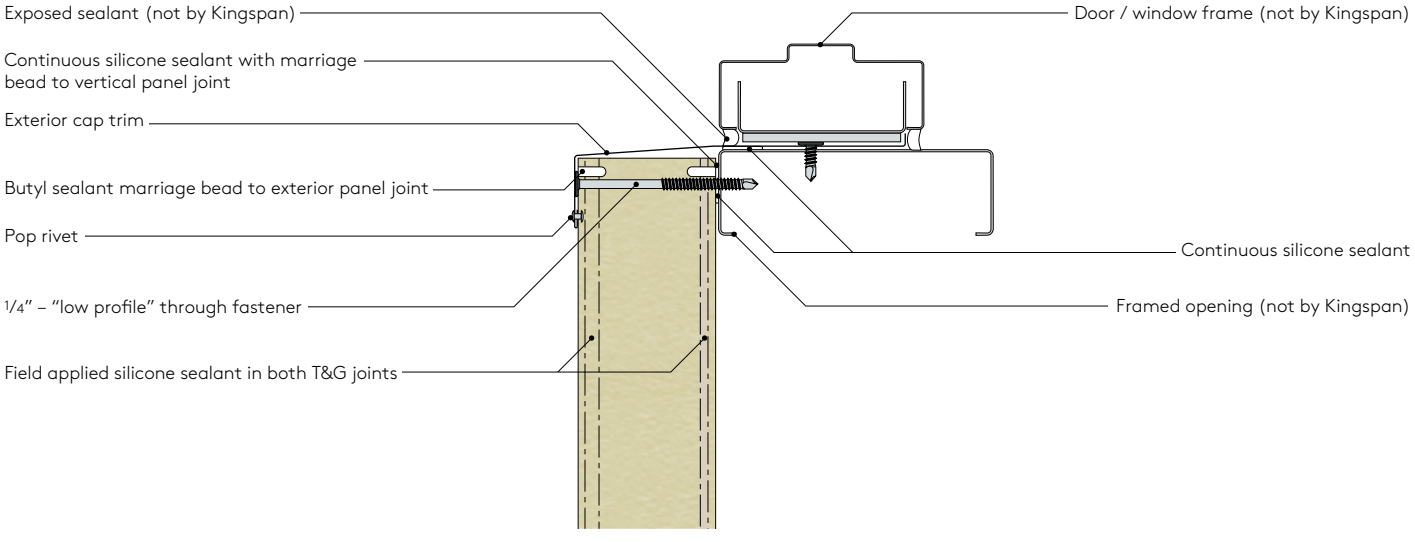
Construction Details: Vertical

MF™ Intermediate Support



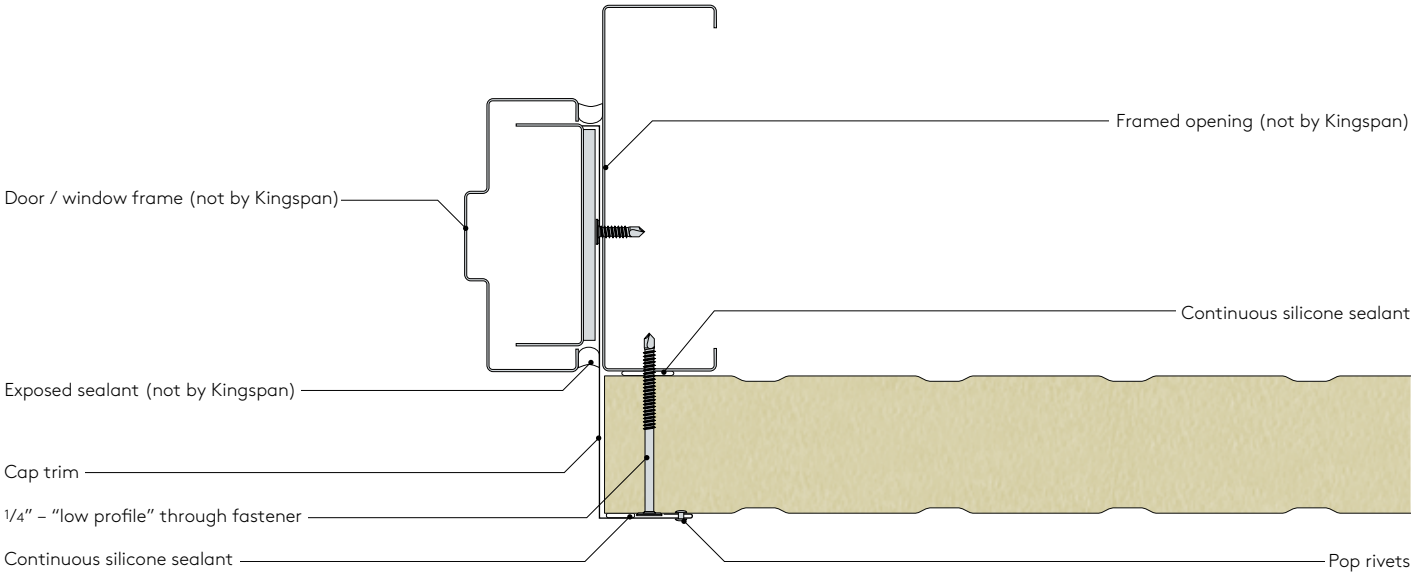


MF™ Framed Opening – One Piece Sill

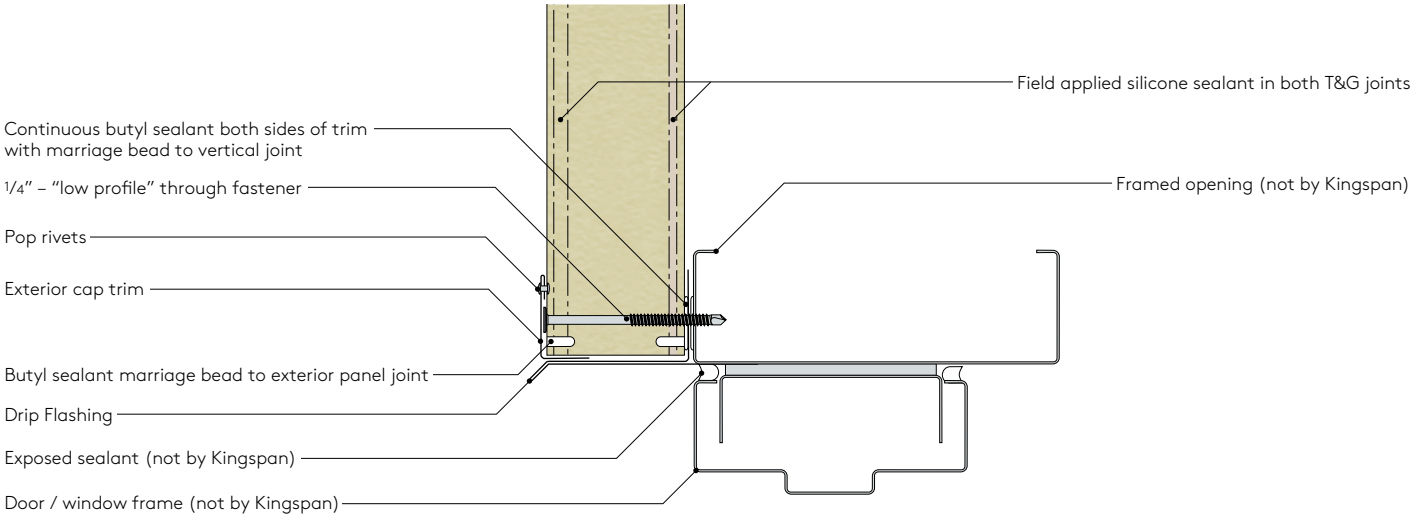


Construction Details: Vertical

MF™ Framed Opening – One Piece Jamb

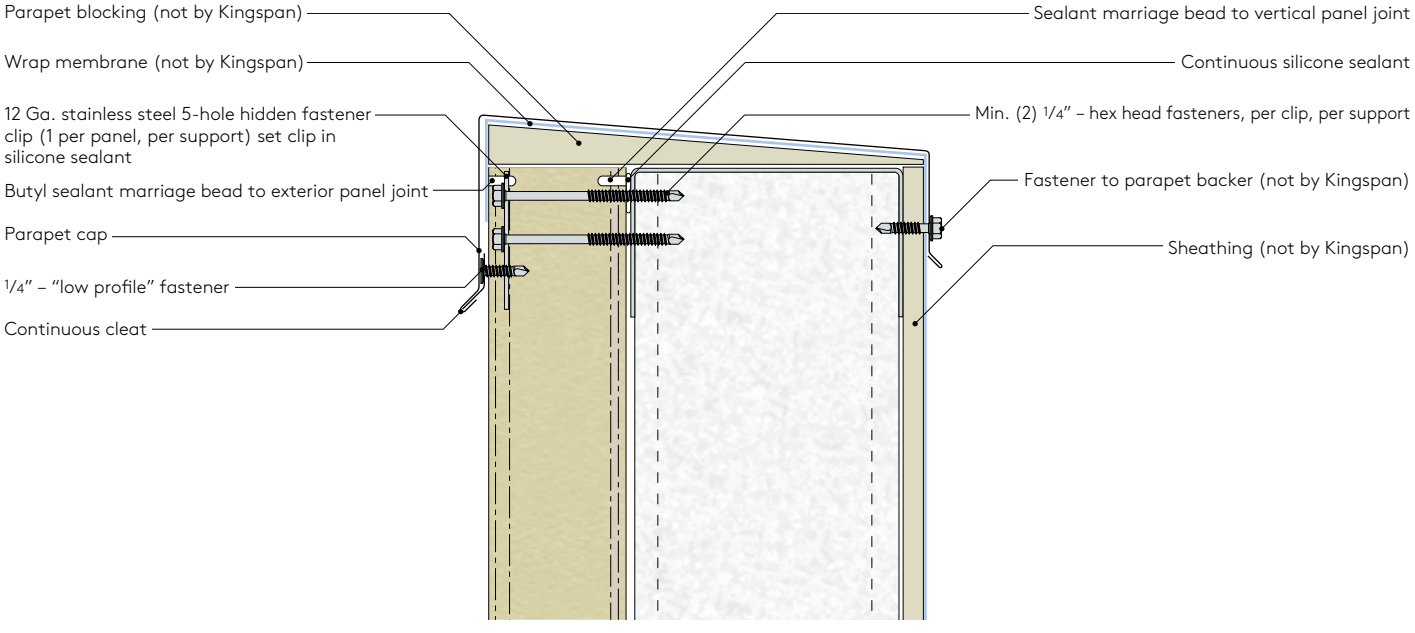


MF™ Framed Opening with Drip Edge

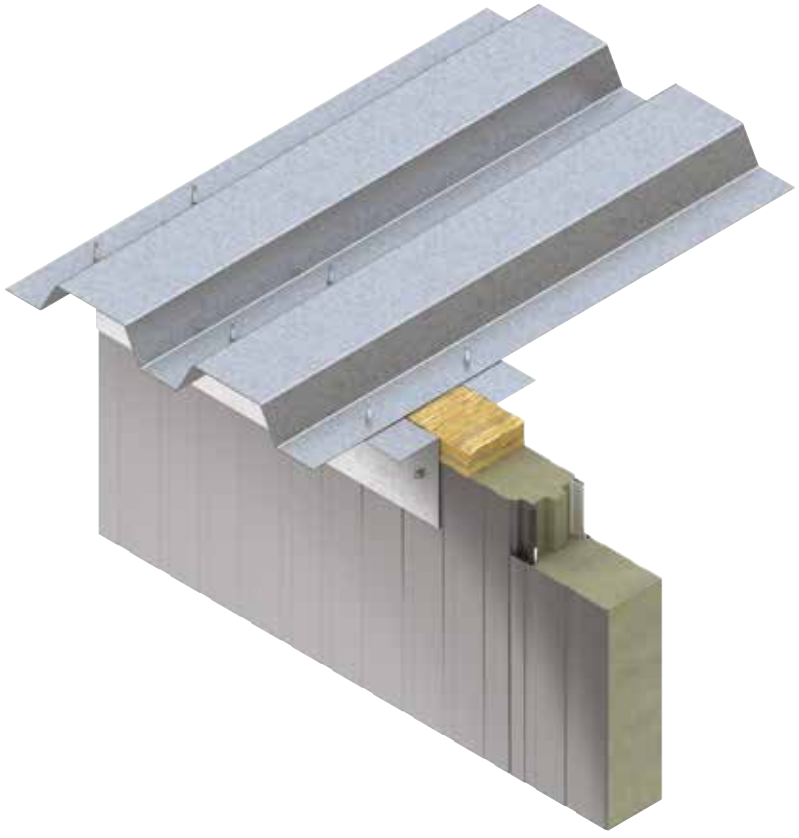


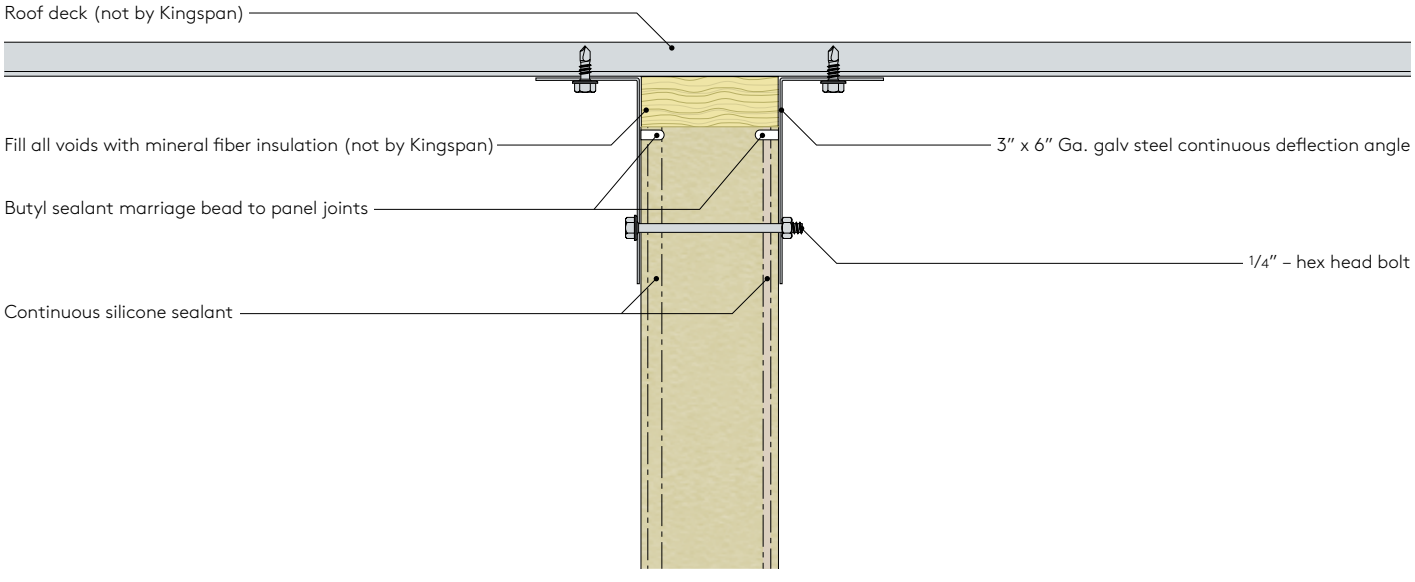
Construction Details: Vertical

MF™ Parapet with Flush Trim



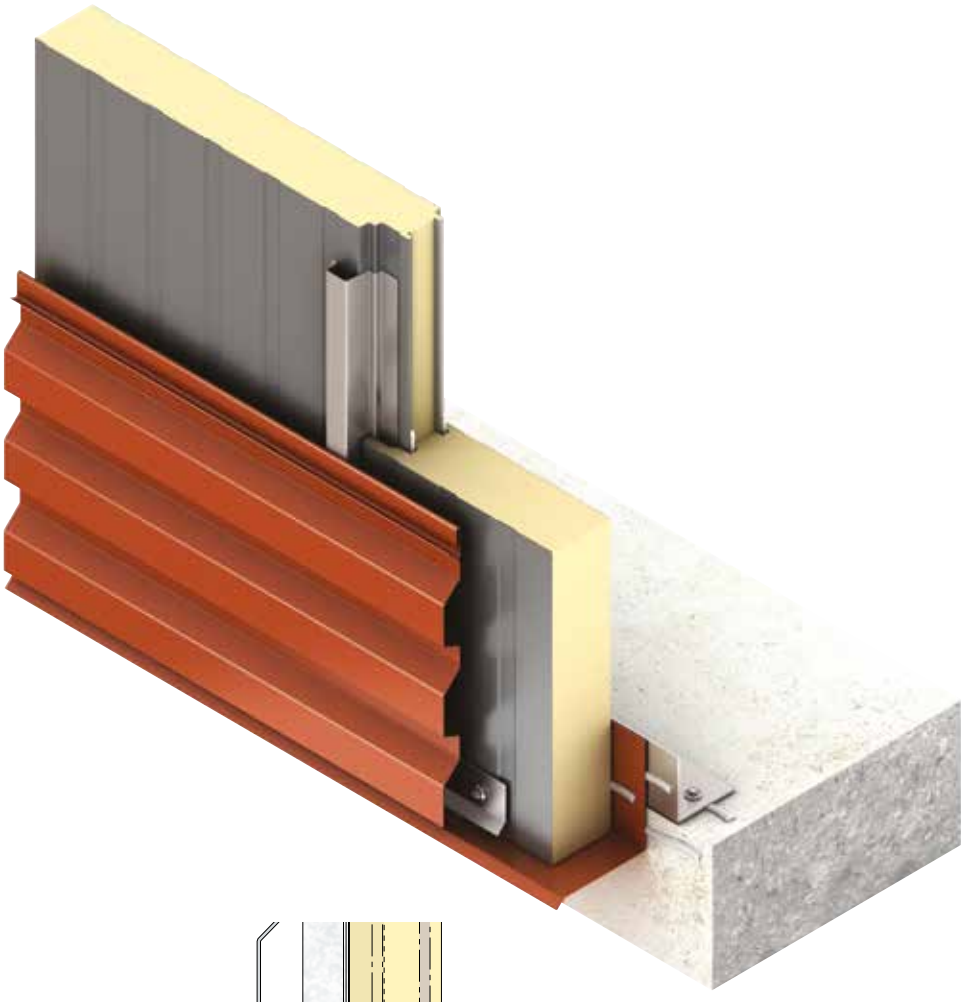
MF™ Partition to Roof

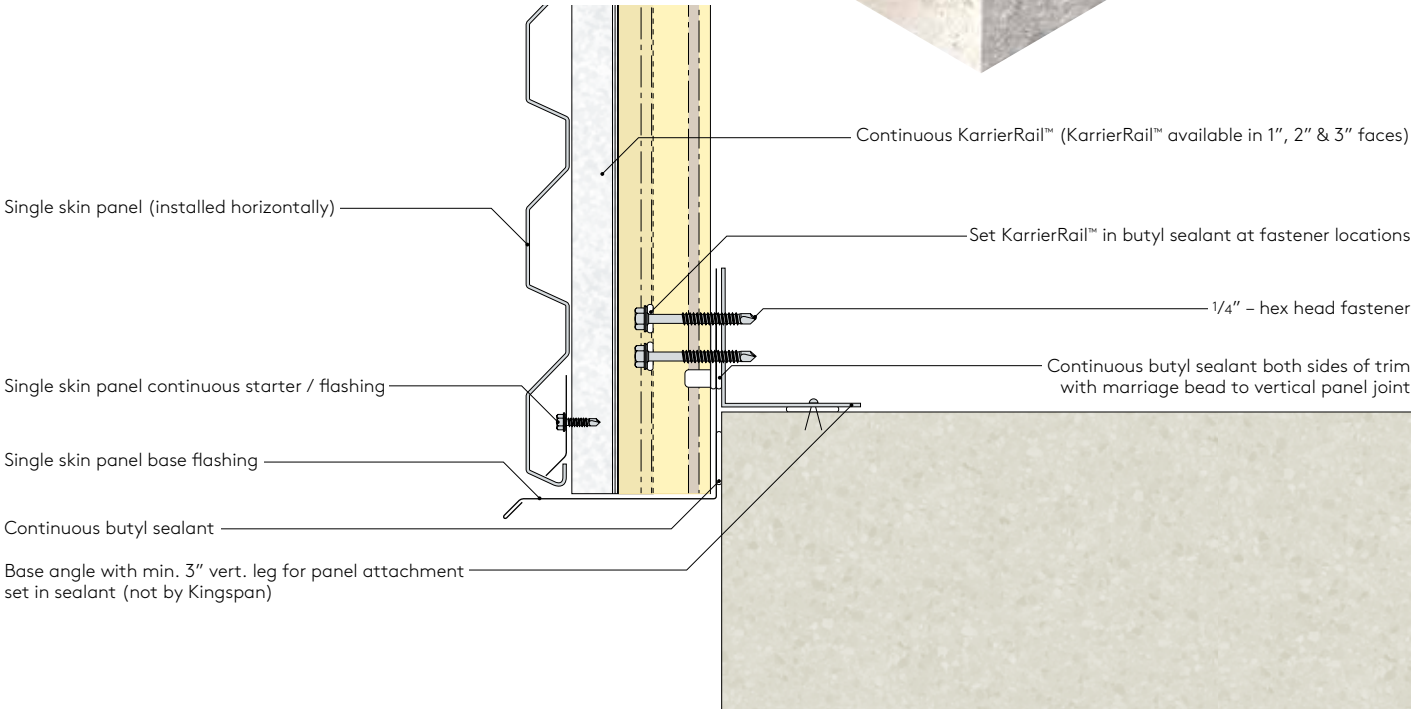




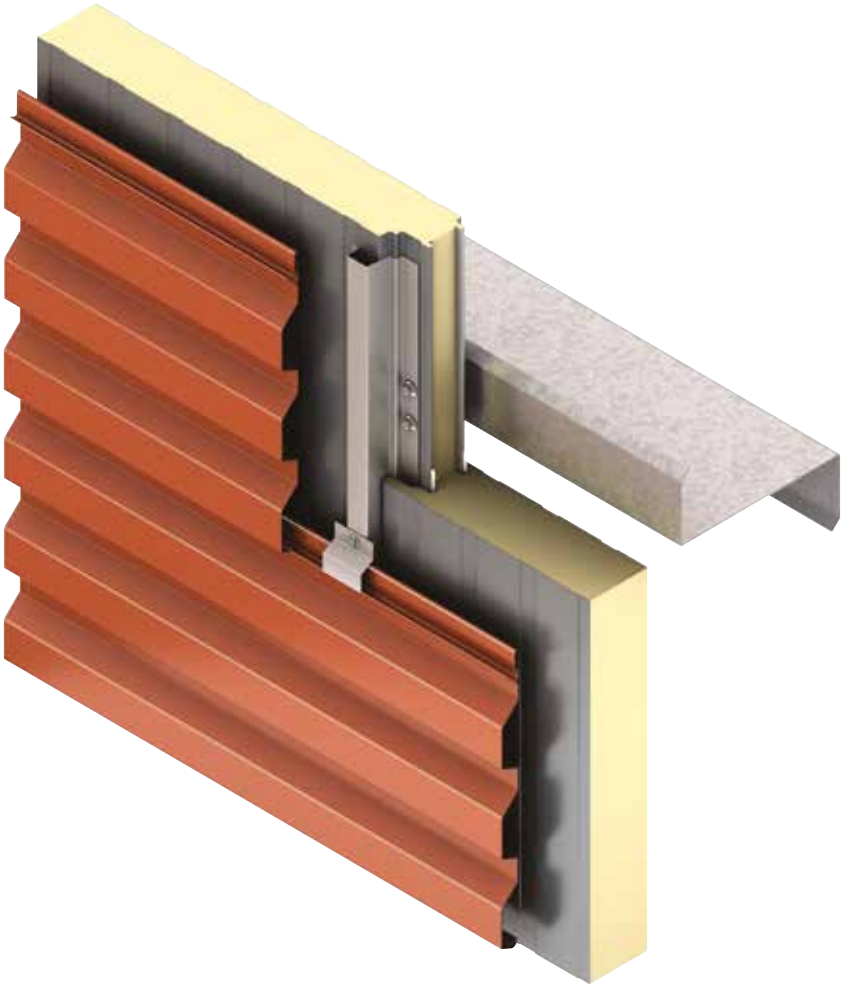
Construction Details: Vertical

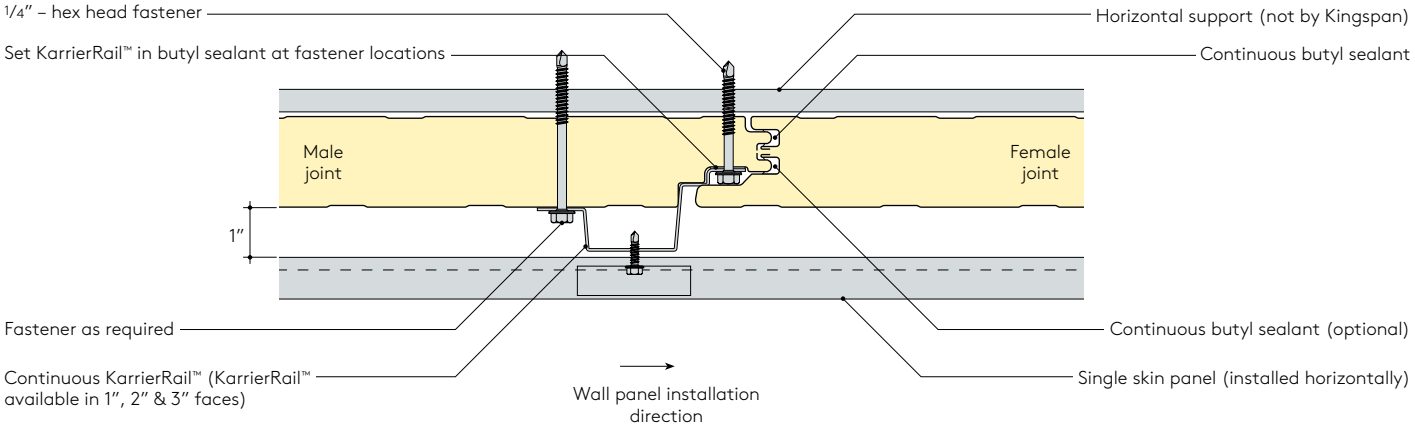
Base Detail – Horizontal Rainscreen





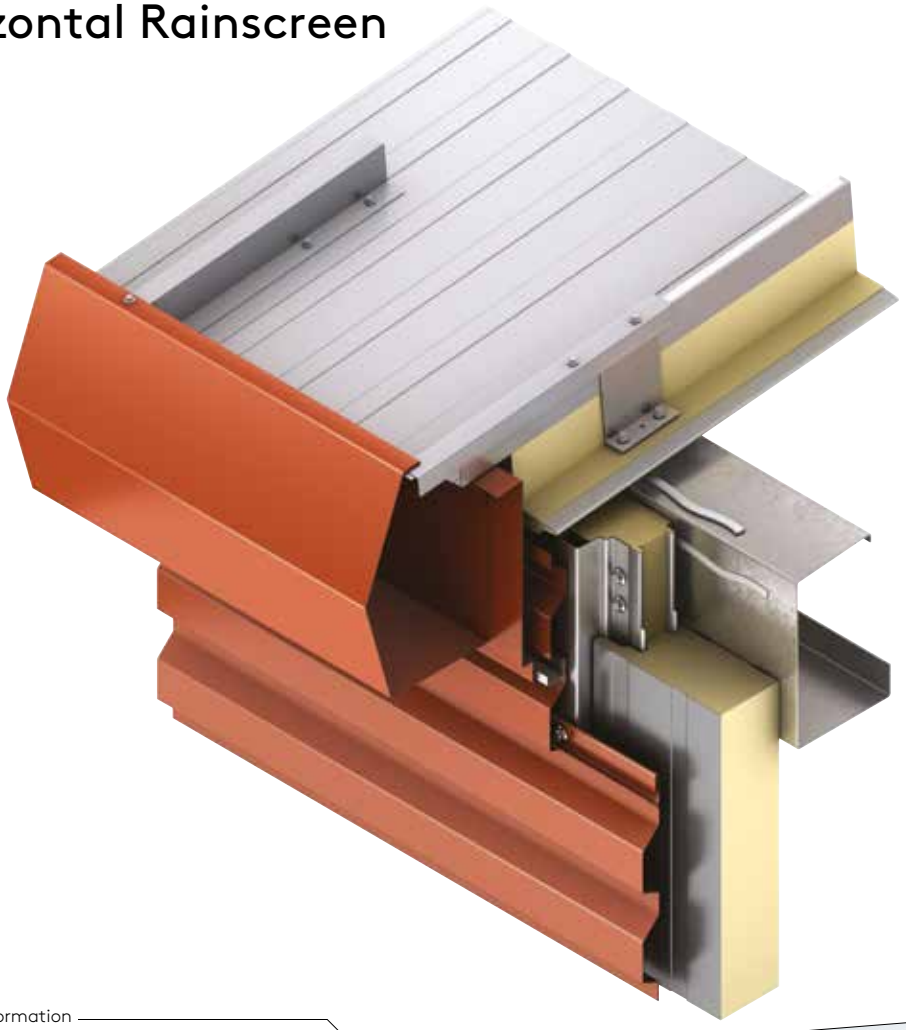
Intermediate Support – Horizontal Rainscreen

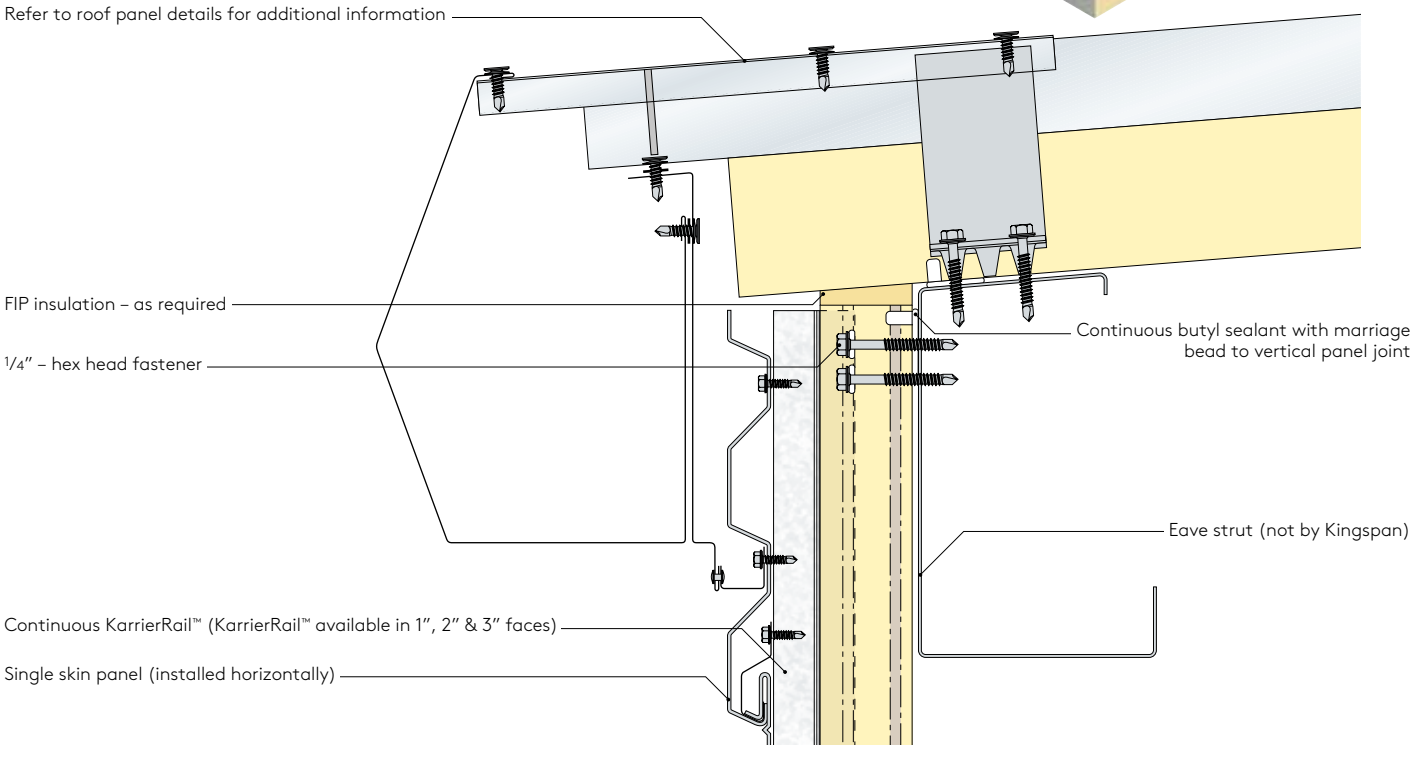




Construction Details: Vertical

Low Eave – Horizontal Rainscreen





Saville Community Sports Center,
Edmonton, AB.

Construction Details: Horizontal

Panels on Metal Studs

"Install horizontal panels onto vertically oriented supports"

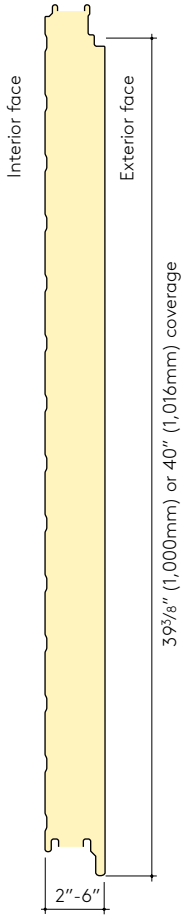
Panels on Structural Steel

Panels on Concrete or Masonry

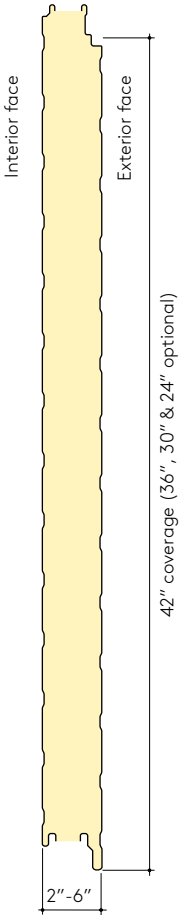
Construction Details: Horizontal

Panel Profiles

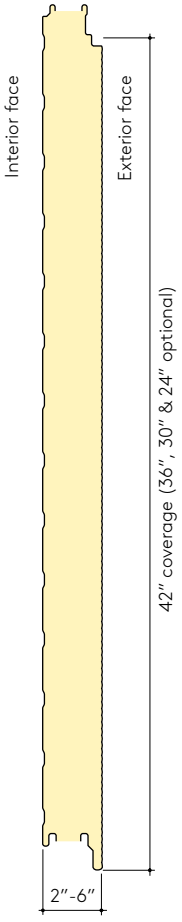
KS Azteco®



KS Shadowline

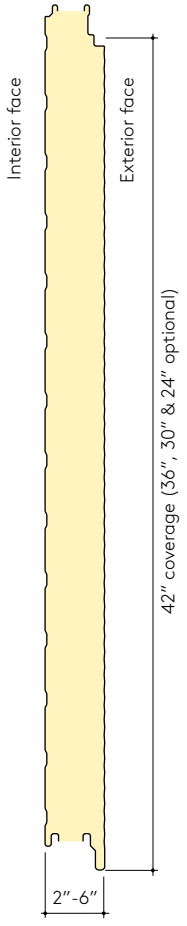


KS Mini Micro-Rib

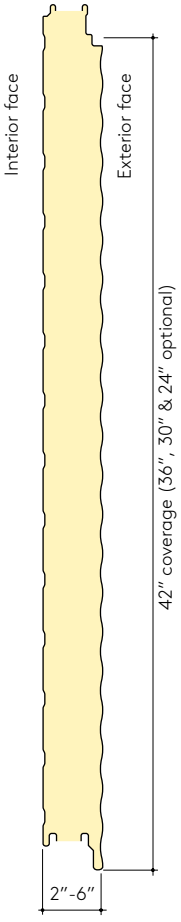


Construction details for 200/300/400 series products are similar to KS Series. Consult technical services for additional details.

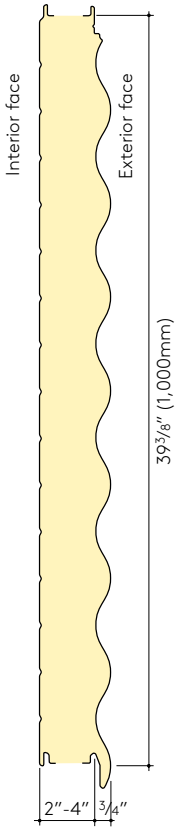
KS Micro-Rib



KS Mini-Wave



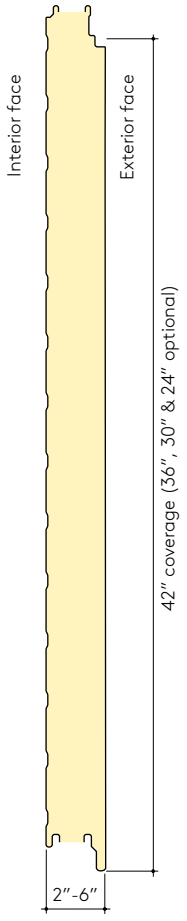
400 Wave



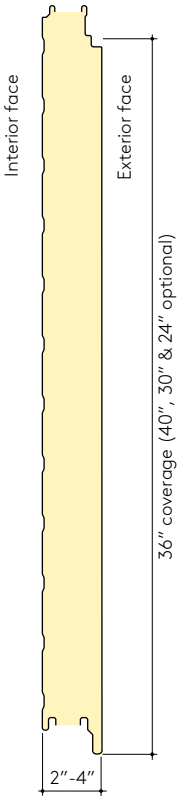
Construction Details: Horizontal

Panel Profiles

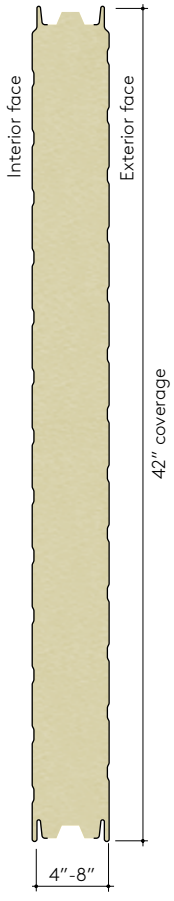
KS Granitstone®



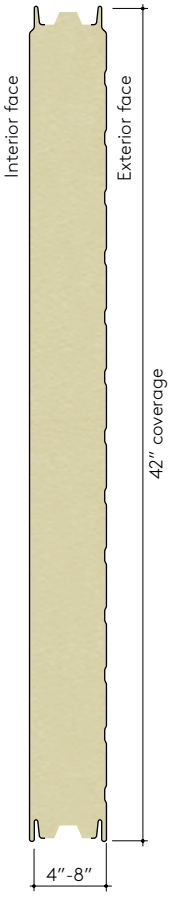
Optimo™



MF™

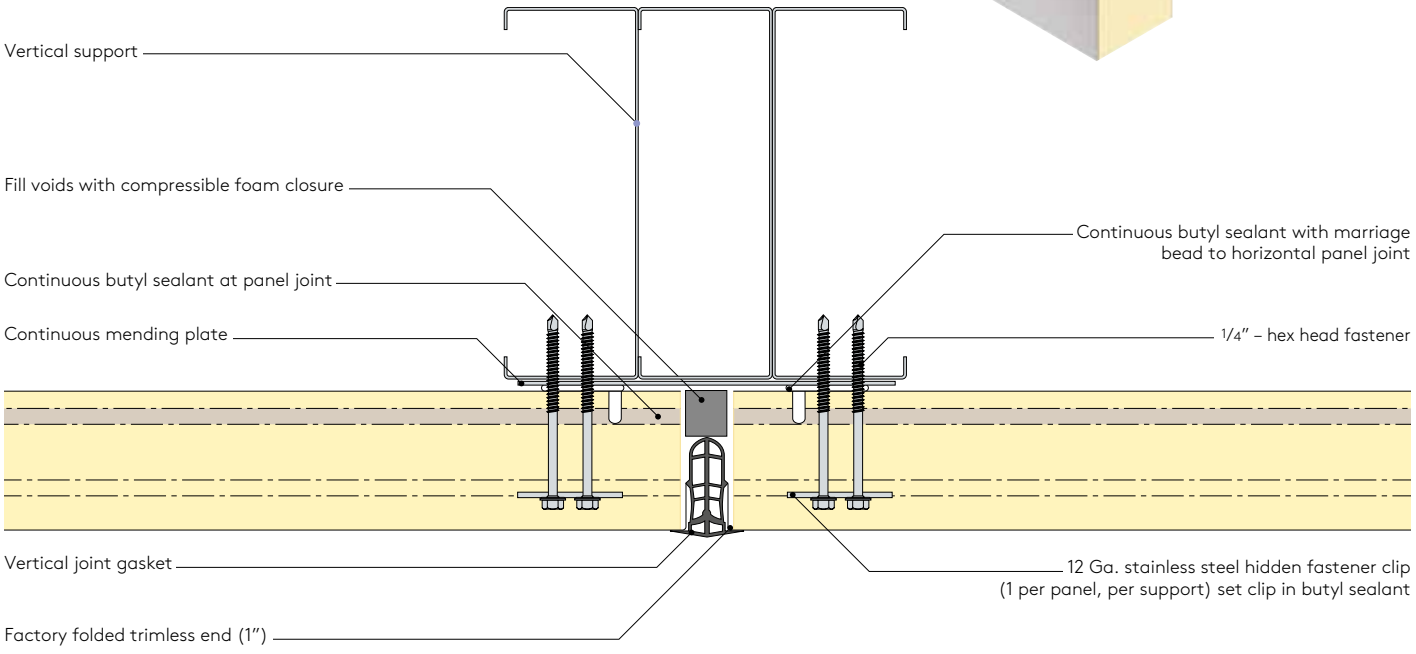

Interior face
Exterior face
42" coverage
4"-8"

MF™ QT

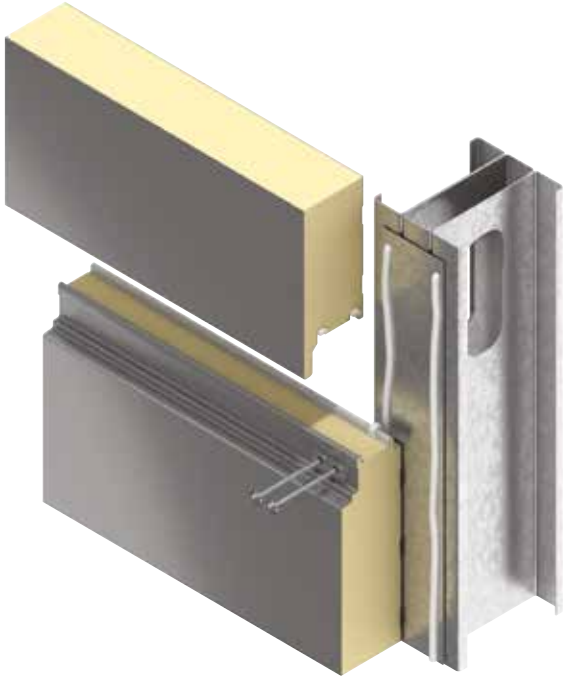

Interior face
Exterior face
42" coverage
4"-8"

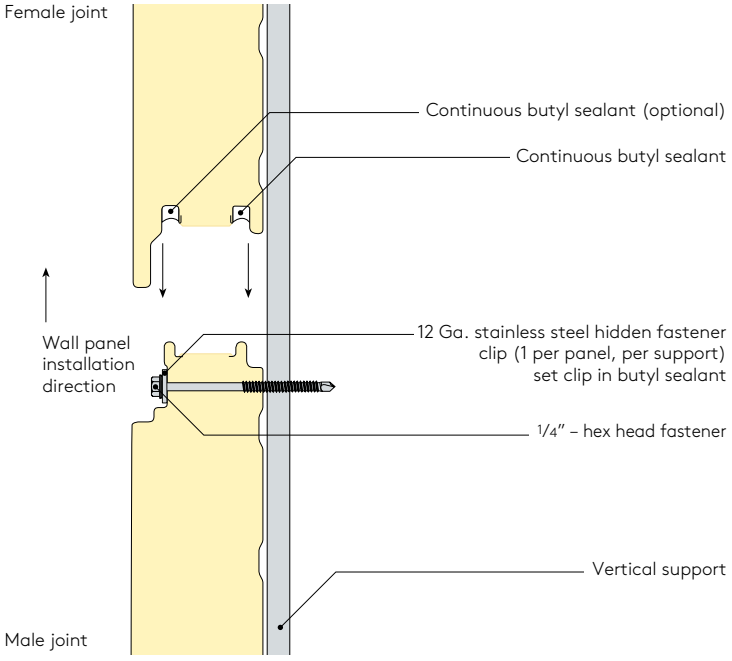
Construction Details: Horizontal

Trimless End Joint with Gasket Assembly

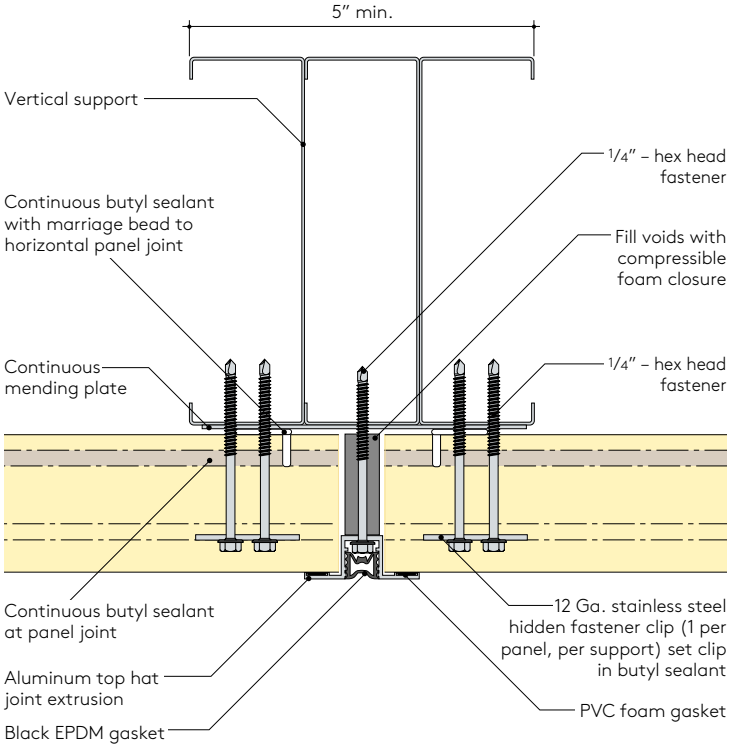


Expanded Panel Joint



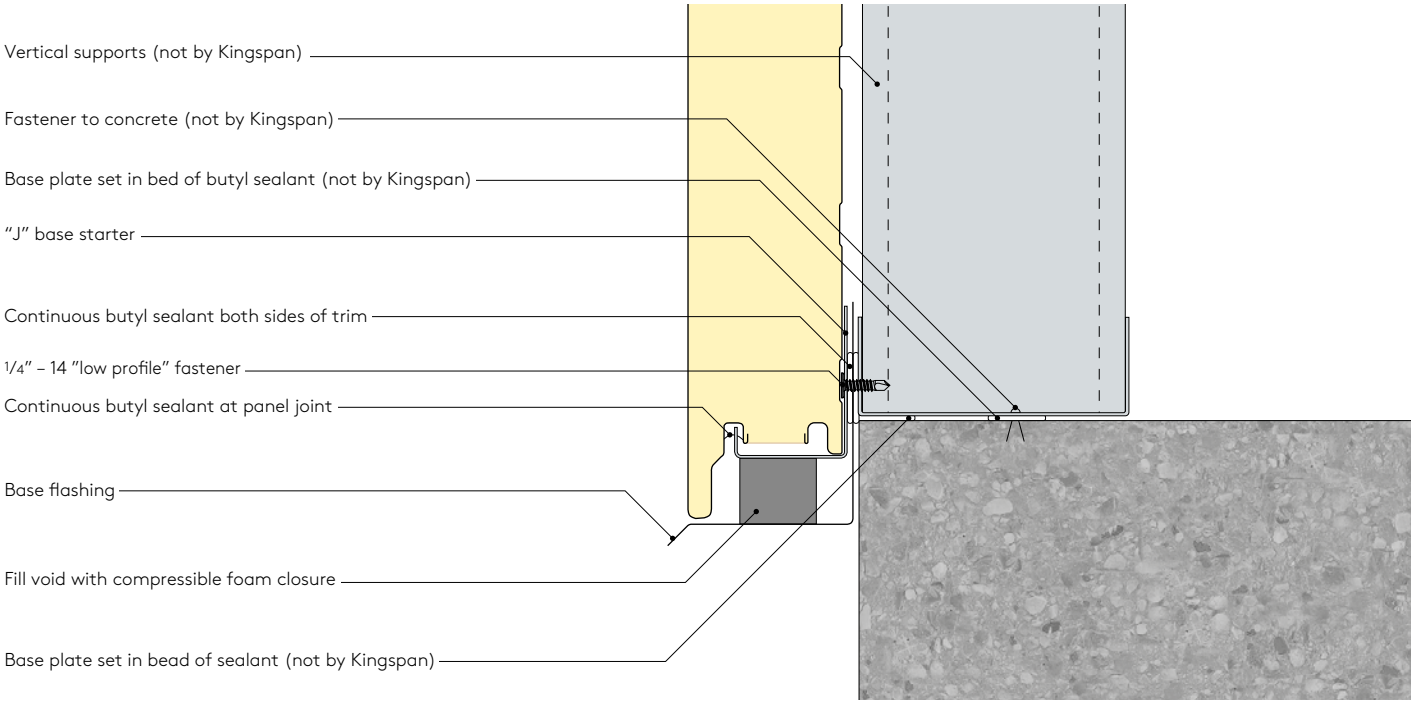


Aluminum Top Hat Joint Assembly

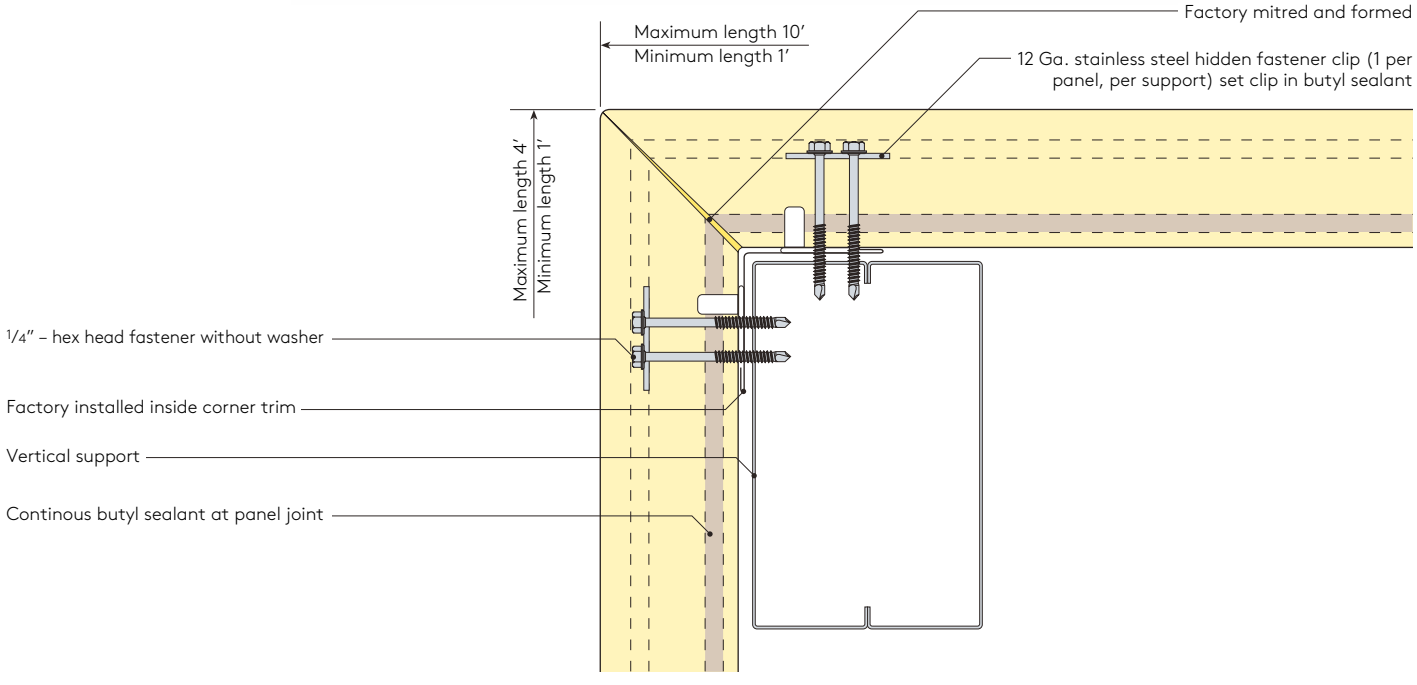


Construction Details: Horizontal

Horizontal Base

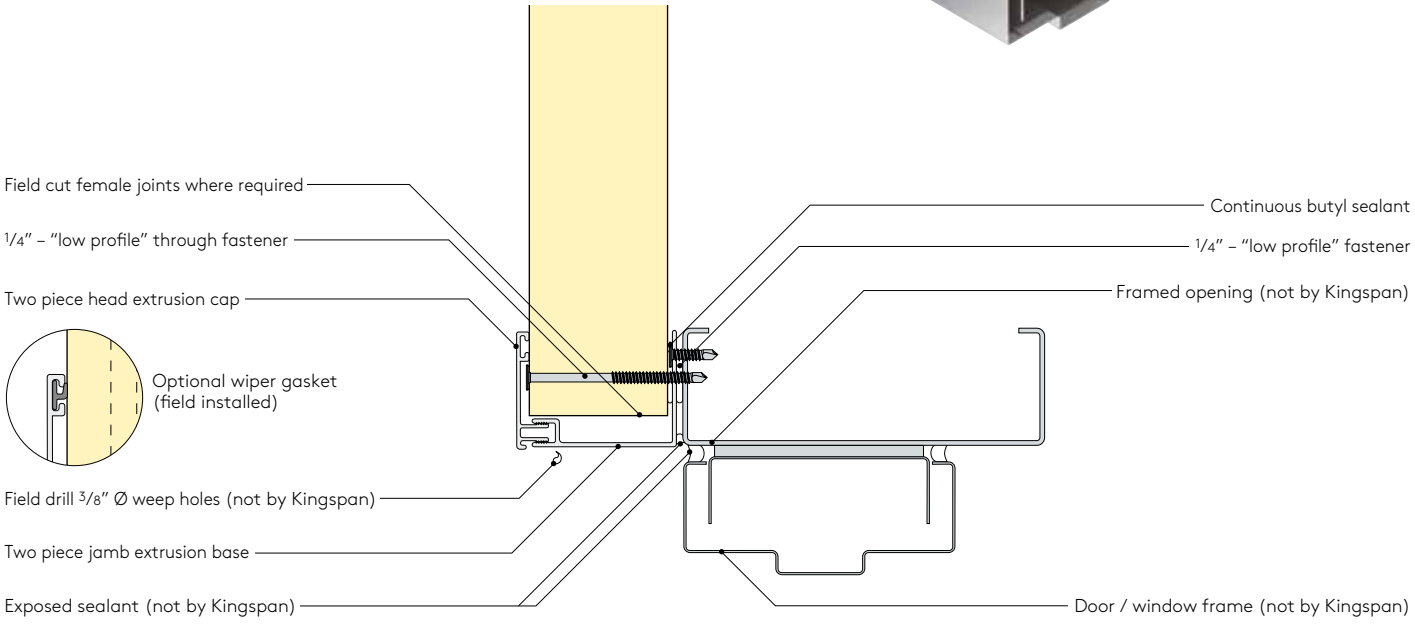


Pre-Formed Corner

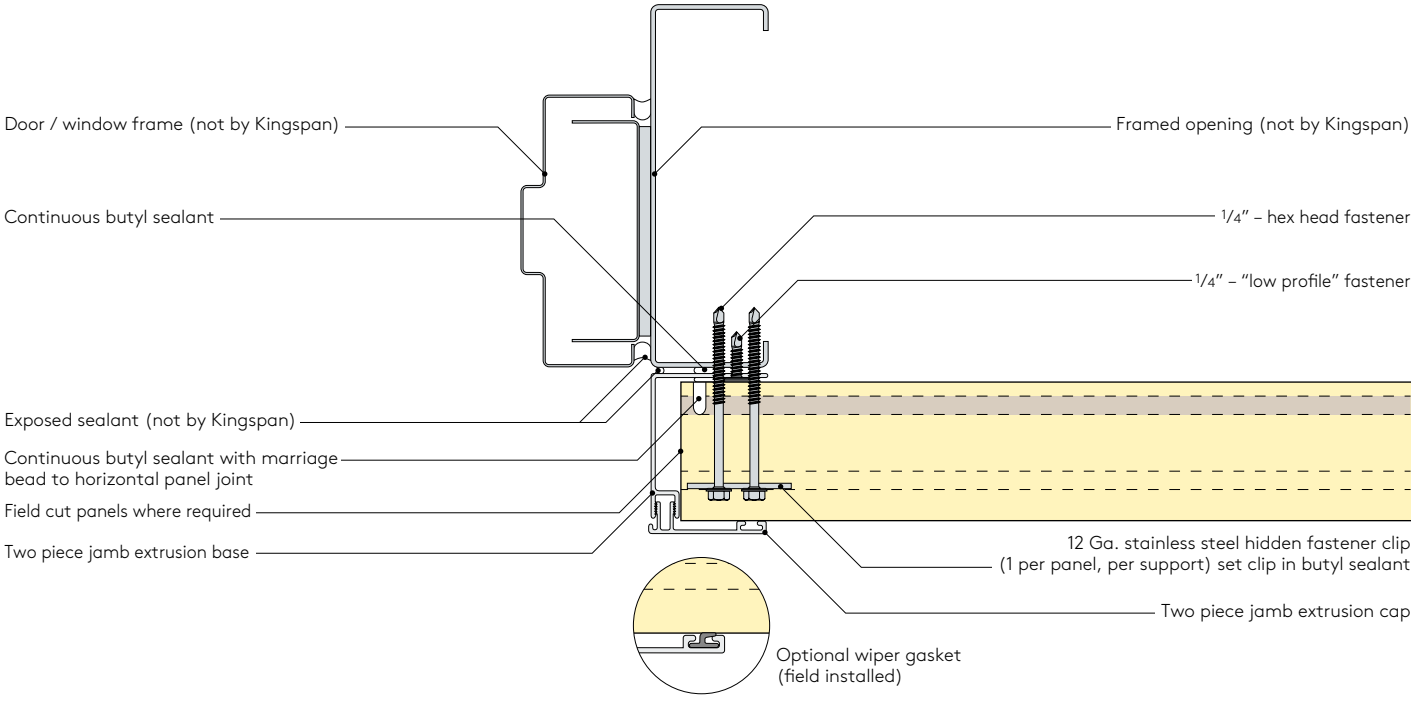


Construction Details: Horizontal

Window Header

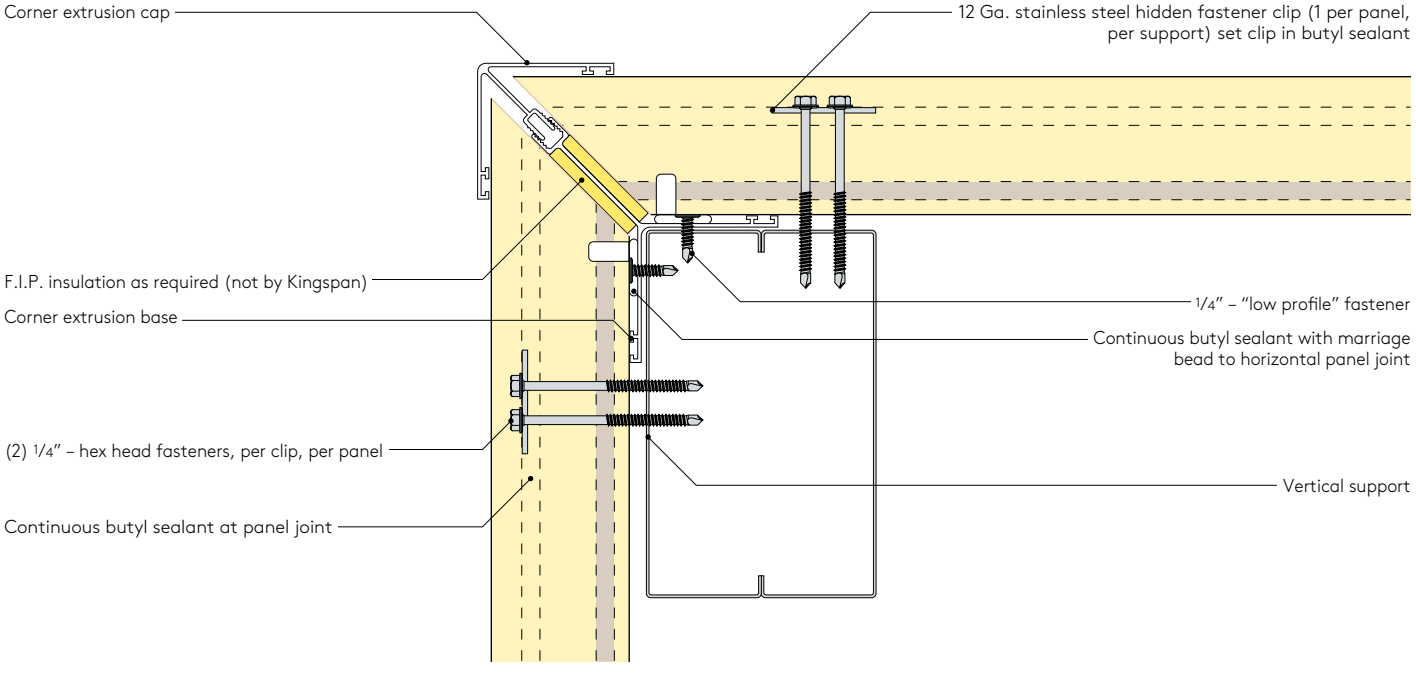


Window / Door Jamb

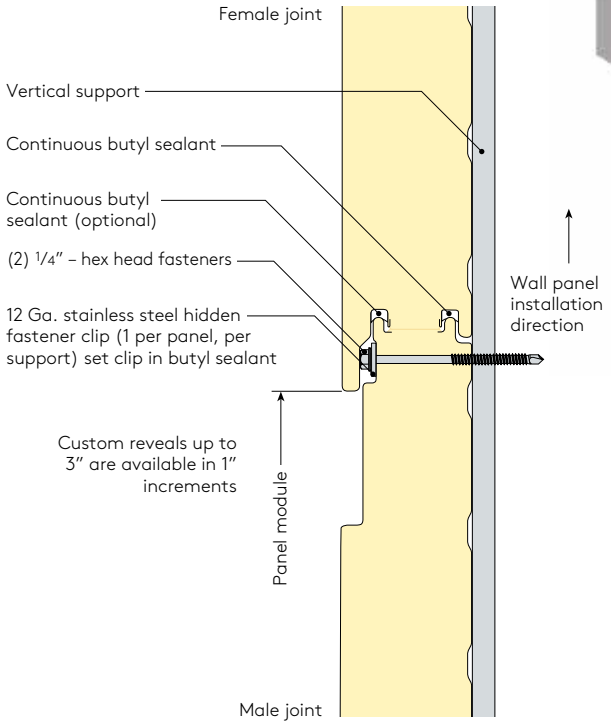


Construction Details: Horizontal

Outside Corner with Extrusion

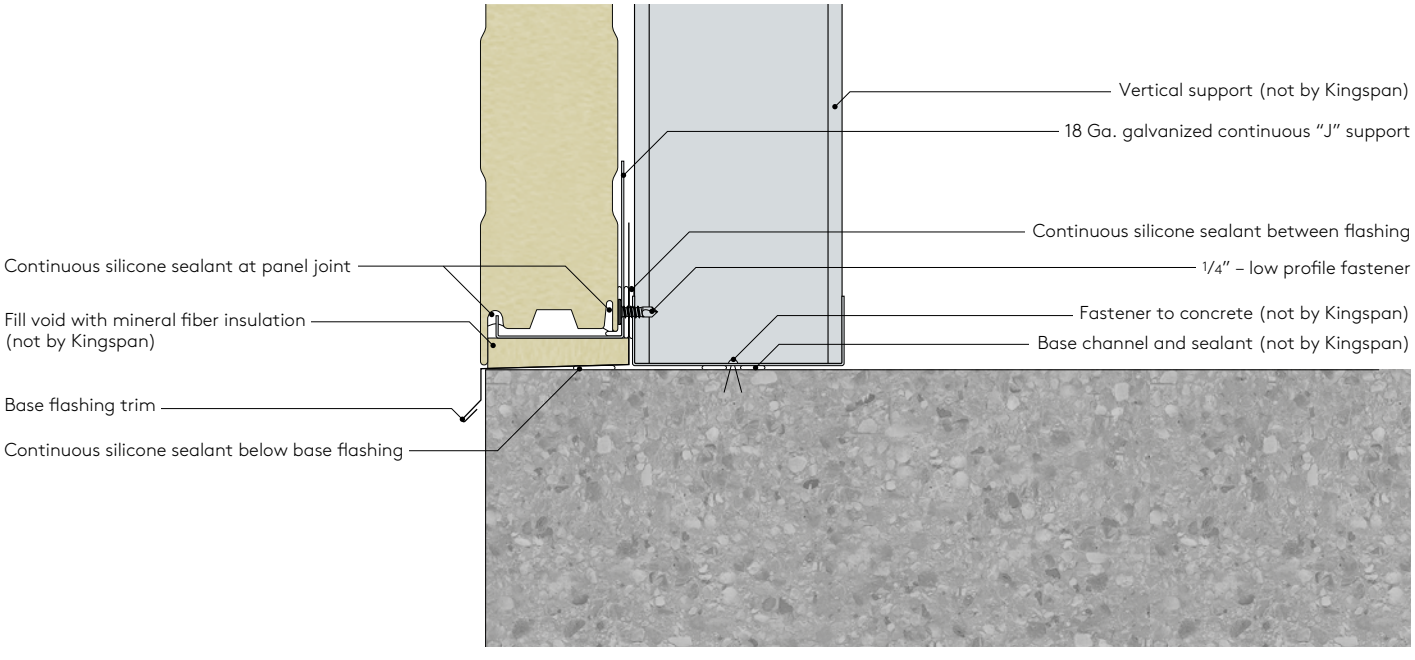


Intermediate Detail with Variable Joint Reveal

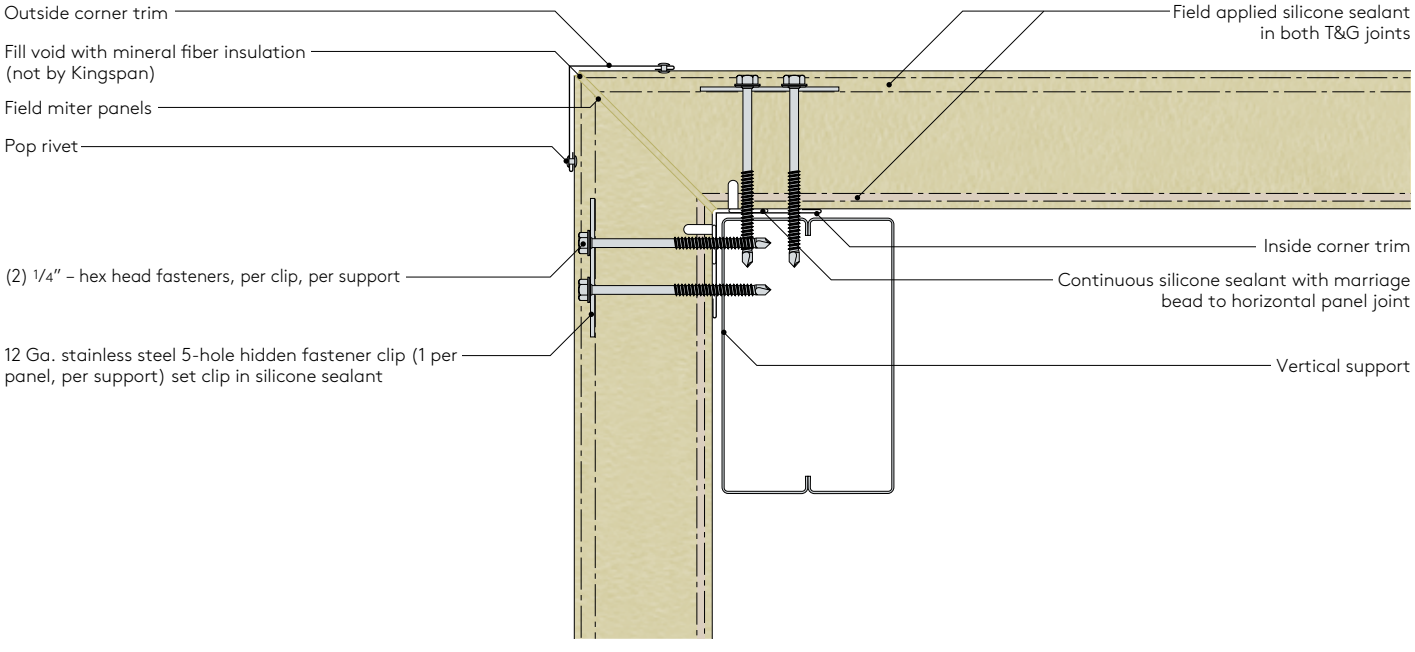


Construction Details: Horizontal

MF™ Flush Base Detail

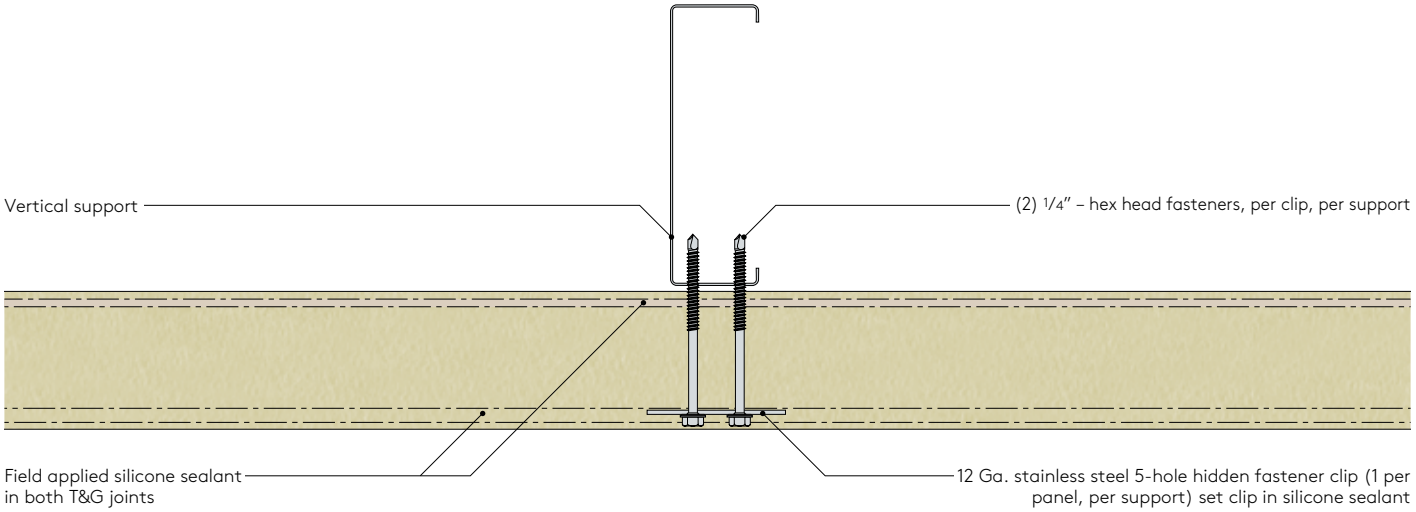


Outside Corner with Flat Trim

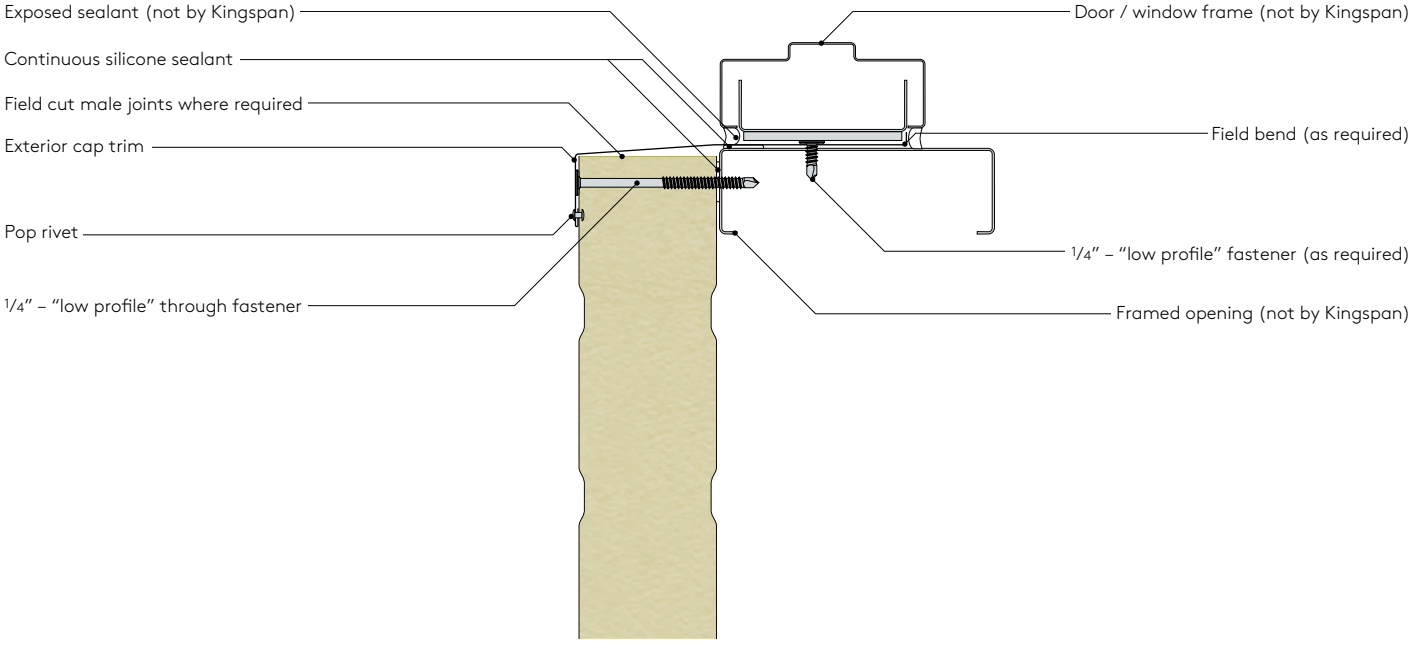


Construction Details: Horizontal

Intermediate Support

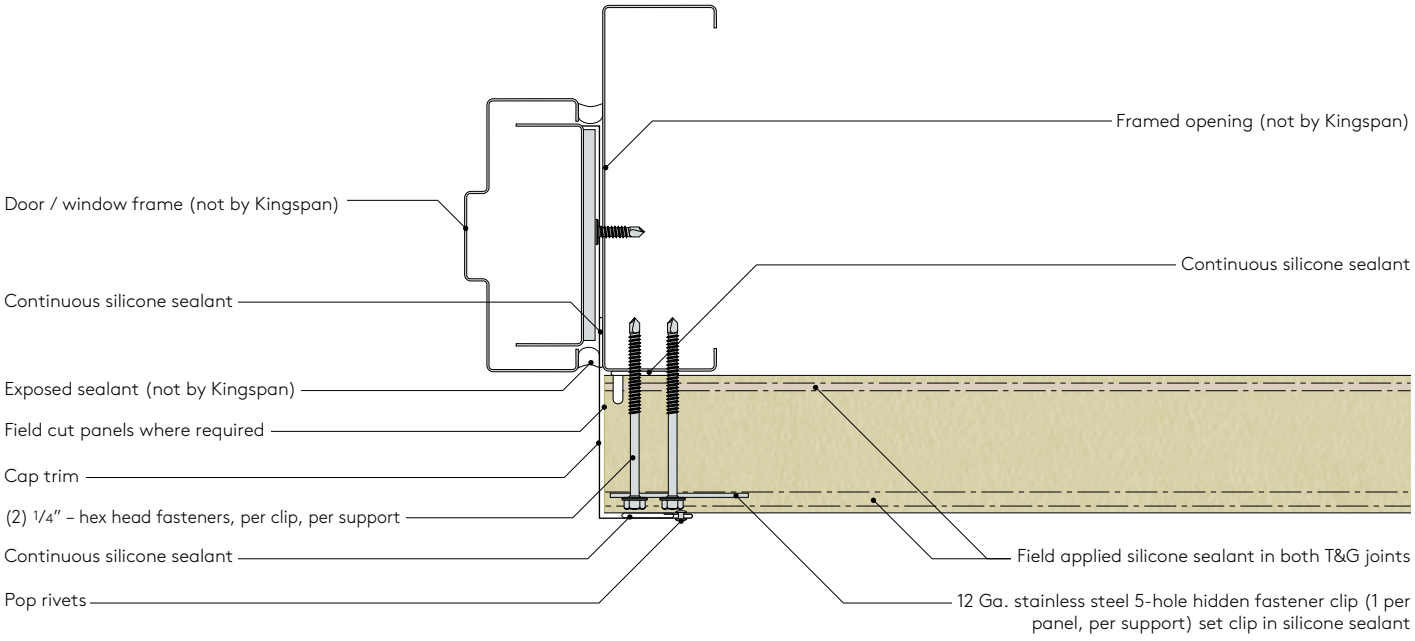


Framed Opening – One Piece Sill

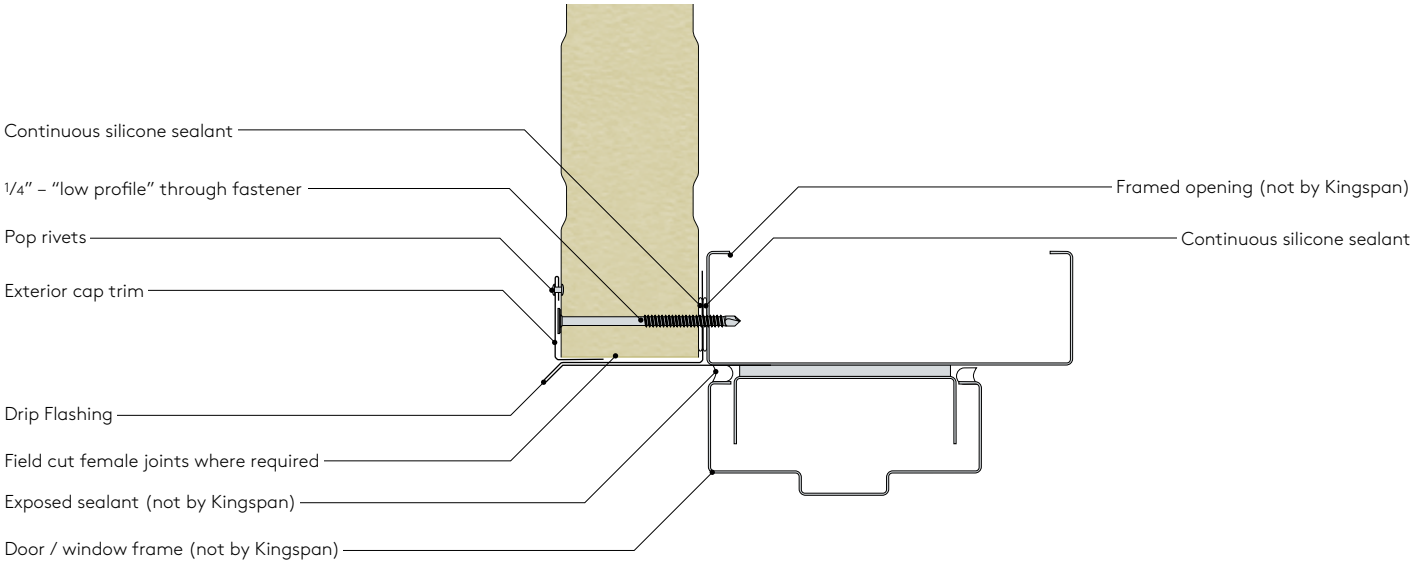


Construction Details: Horizontal

Framed Opening – One Piece Jamb

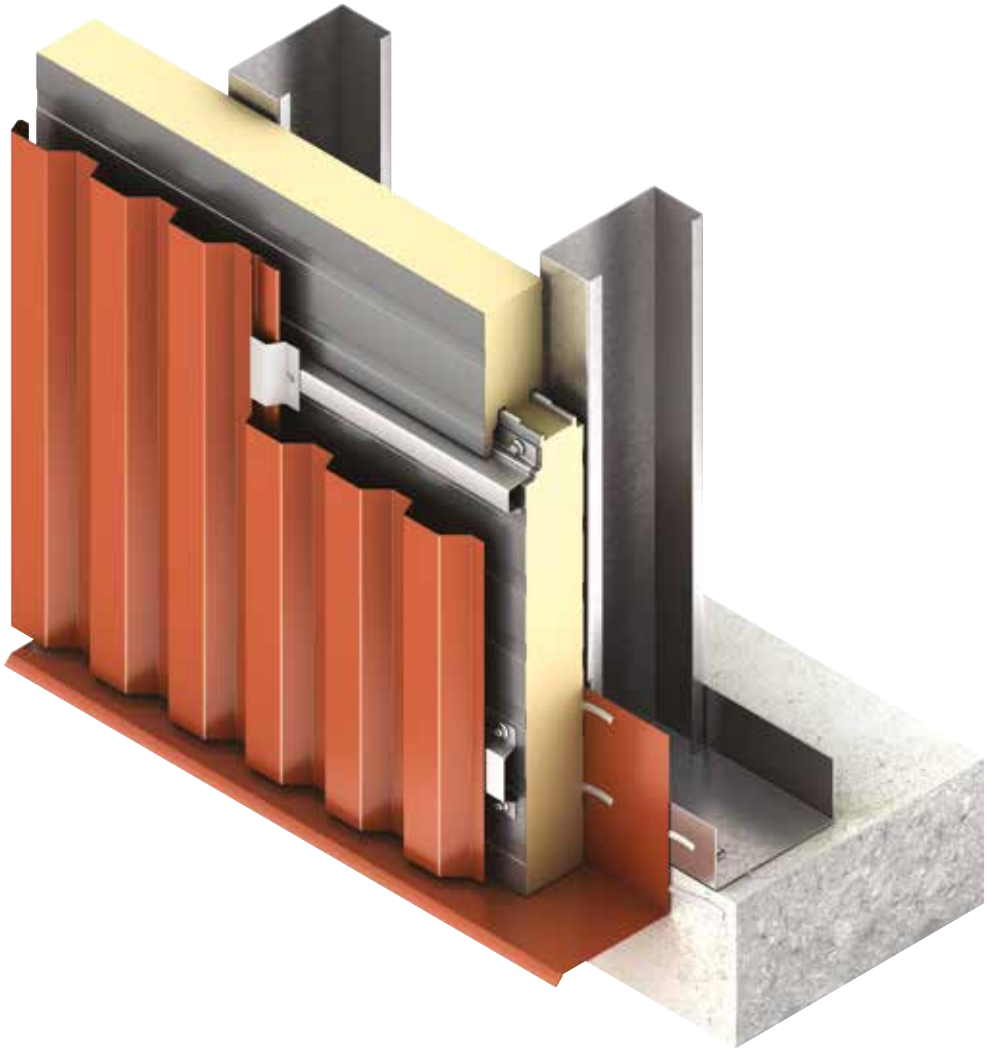


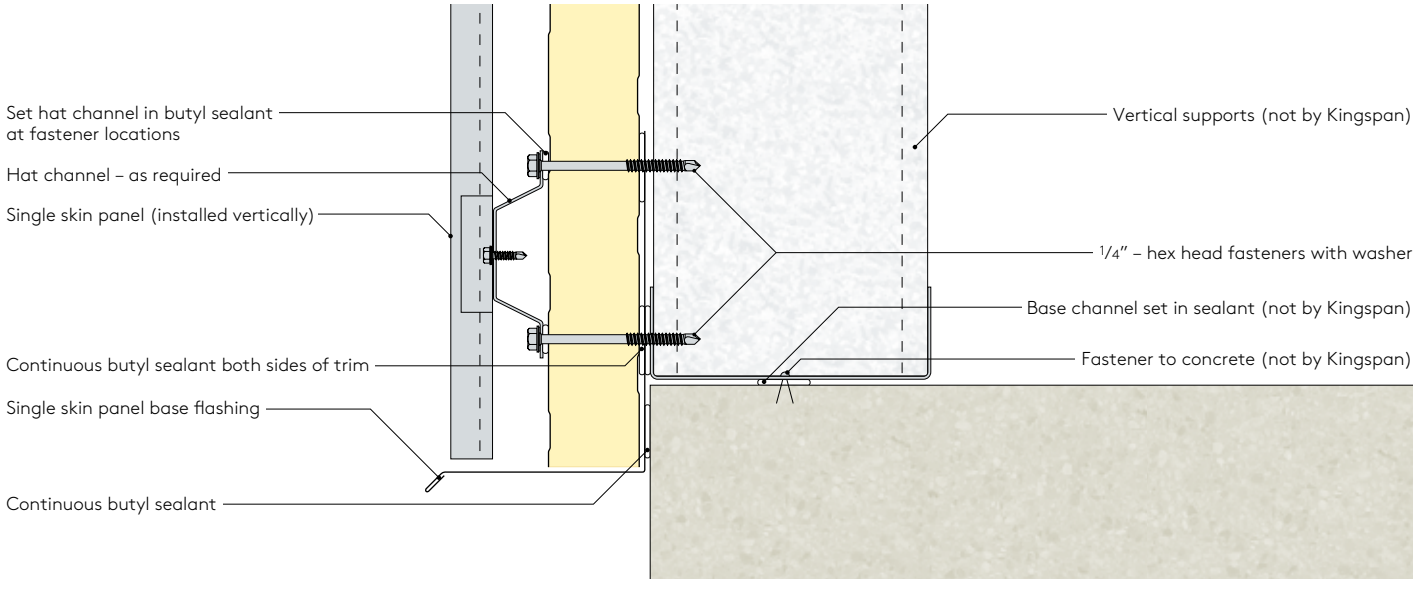
Framed Opening with Drip Edge



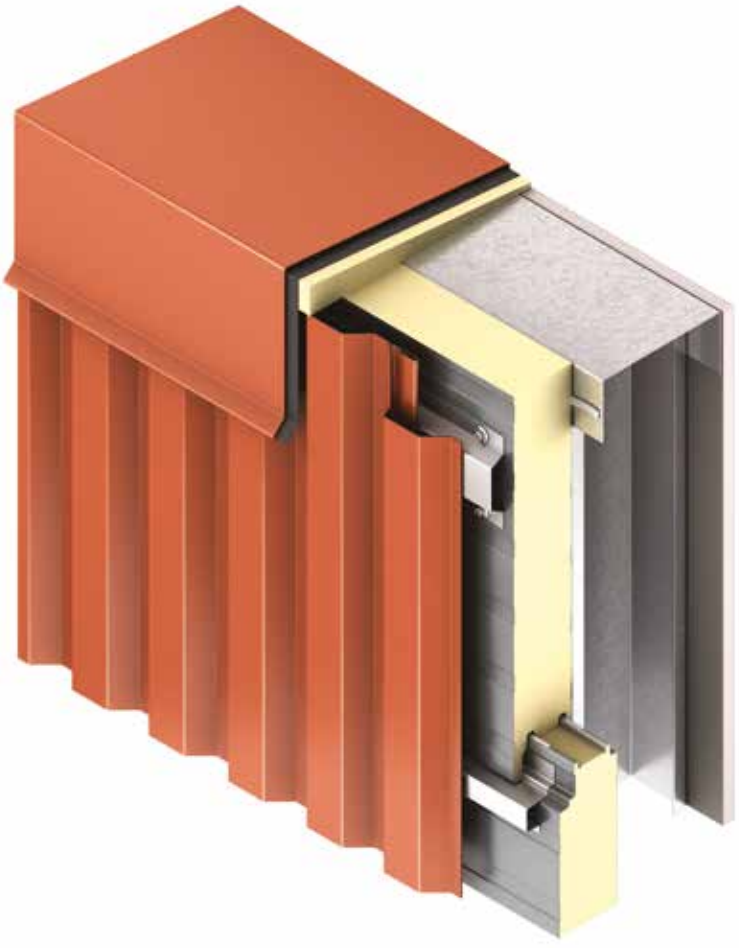
Construction Details: Horizontal

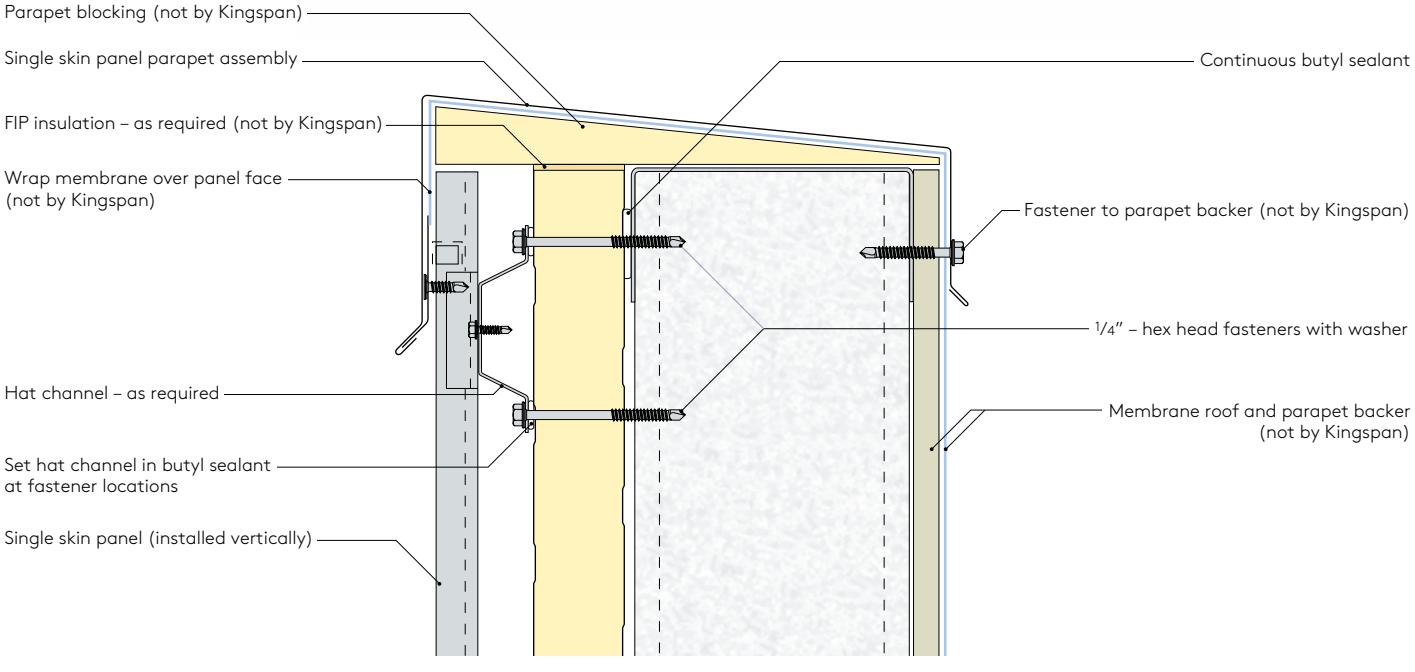
Base at Overhang – Vertical Rainscreen





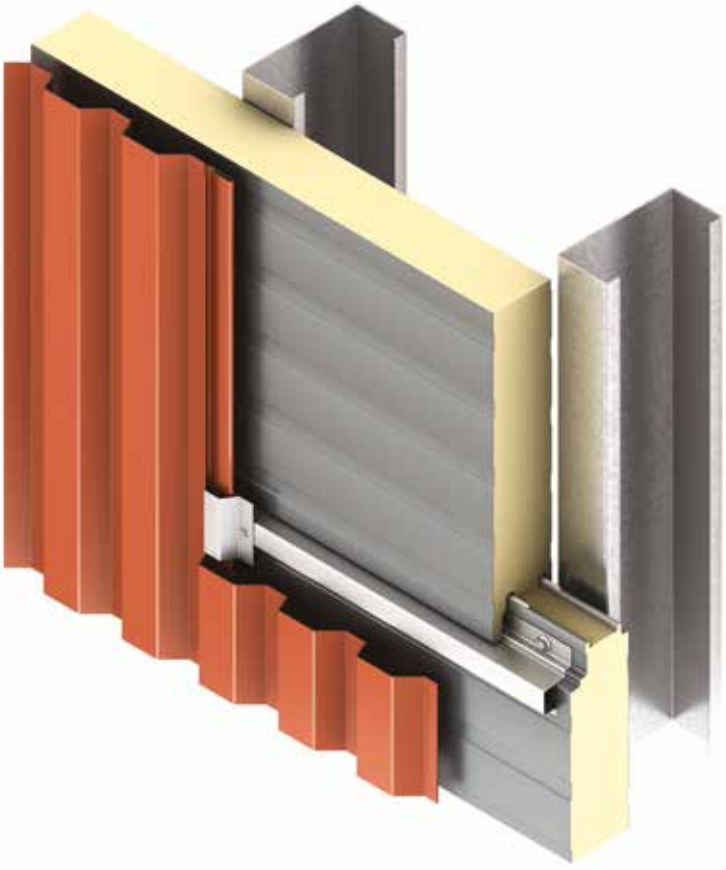
Parapet – Vertical Rainscreen

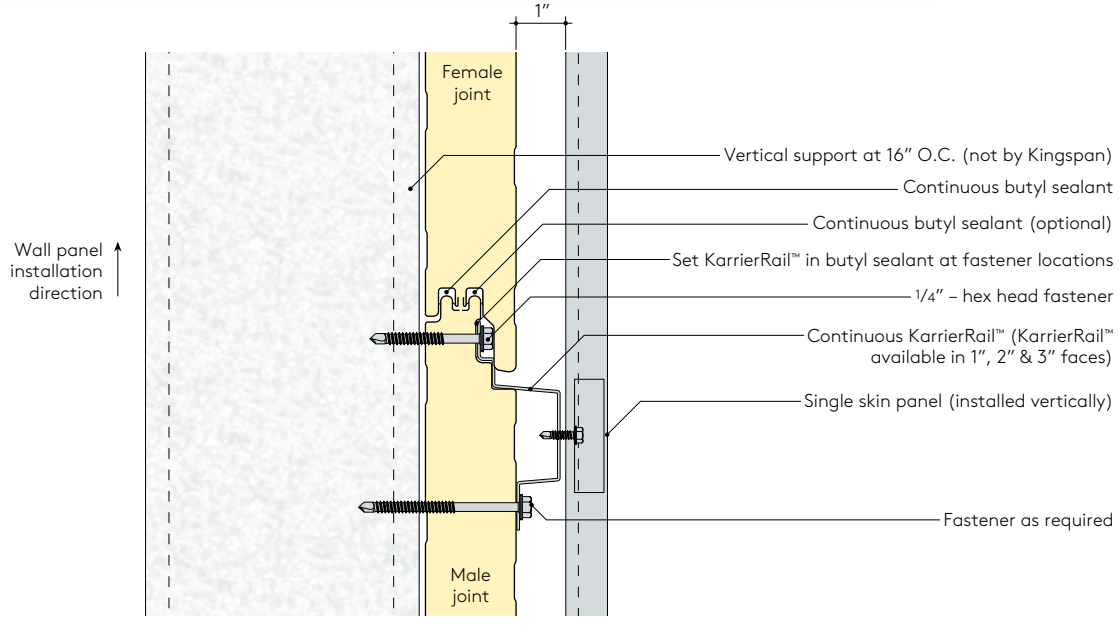




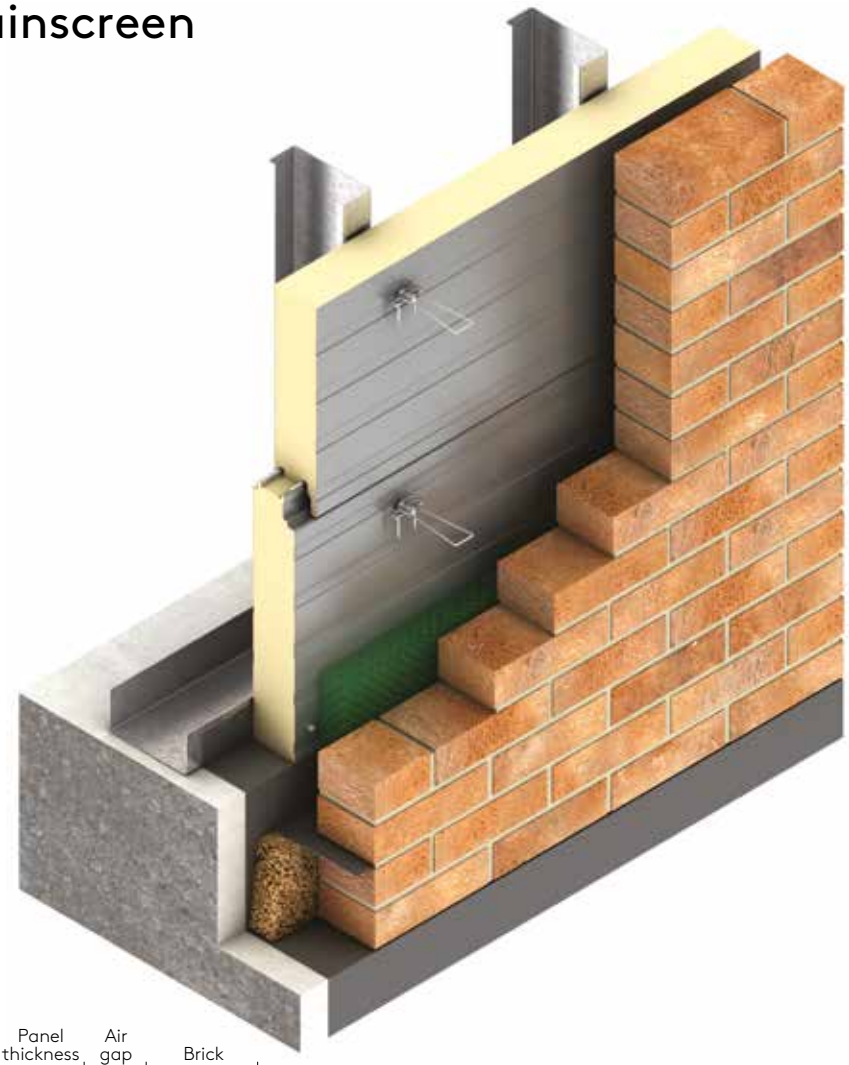
Construction Details: Horizontal

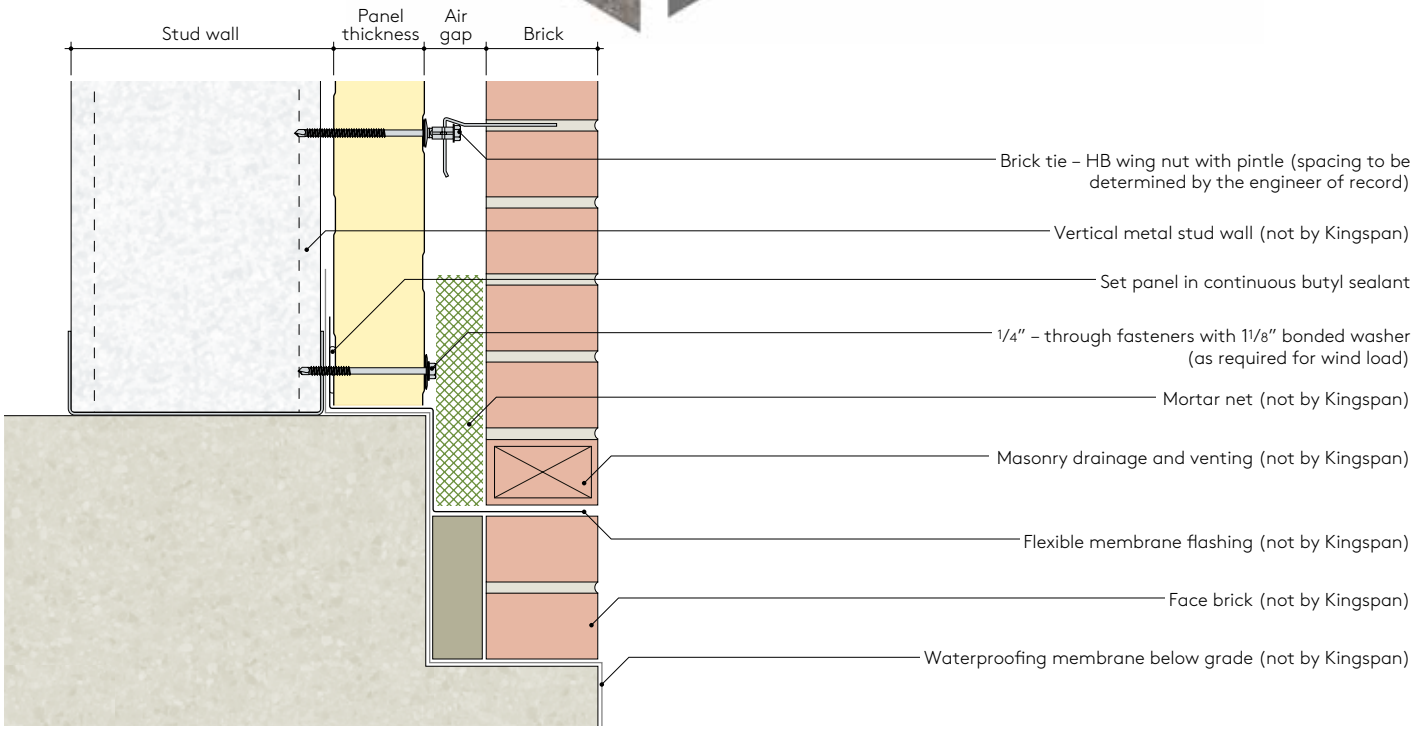
Intermediate Support – Vertical Rainscreen





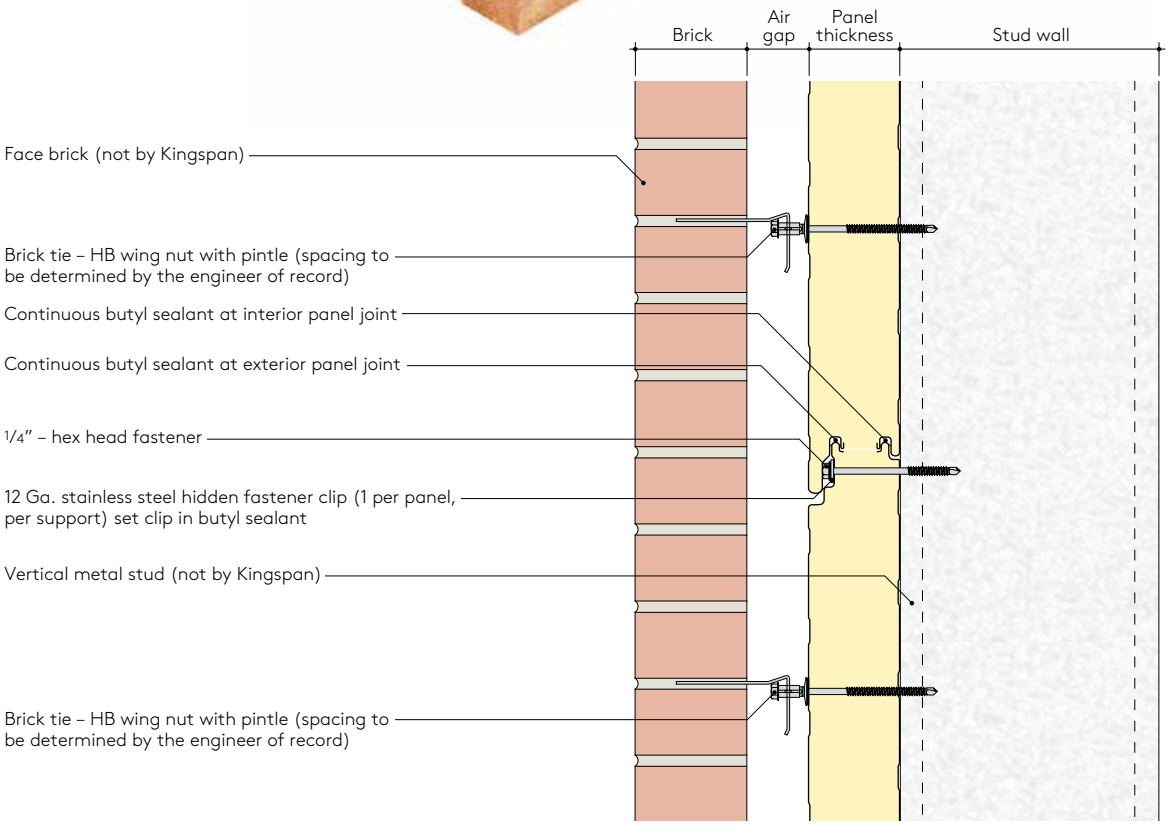
Base – Brick Rainscreen



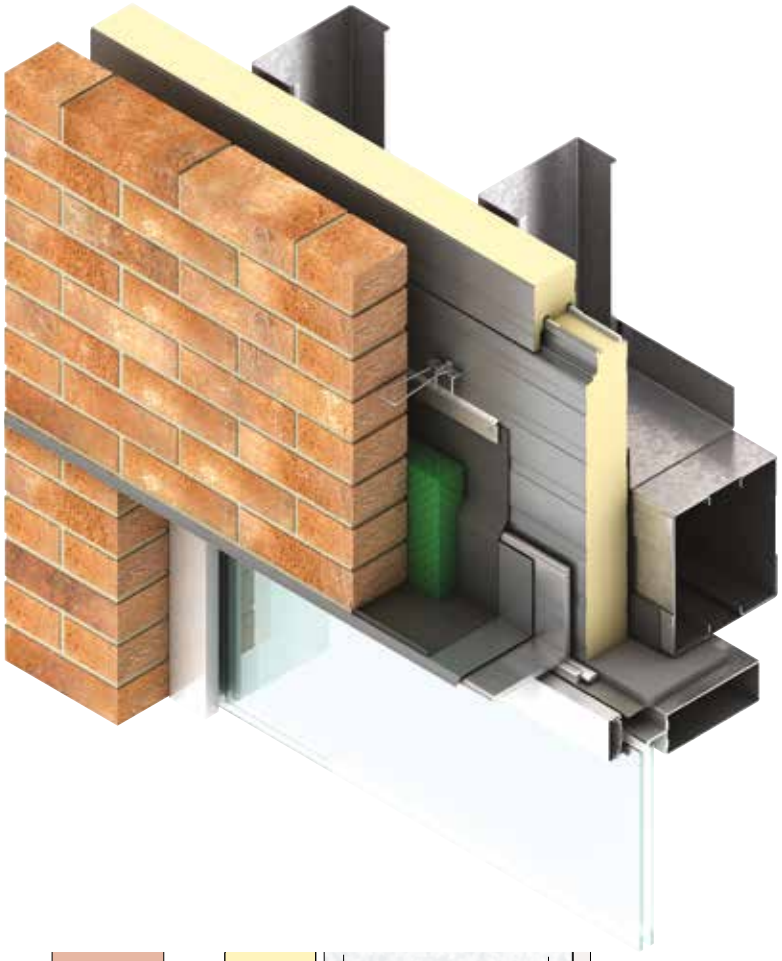


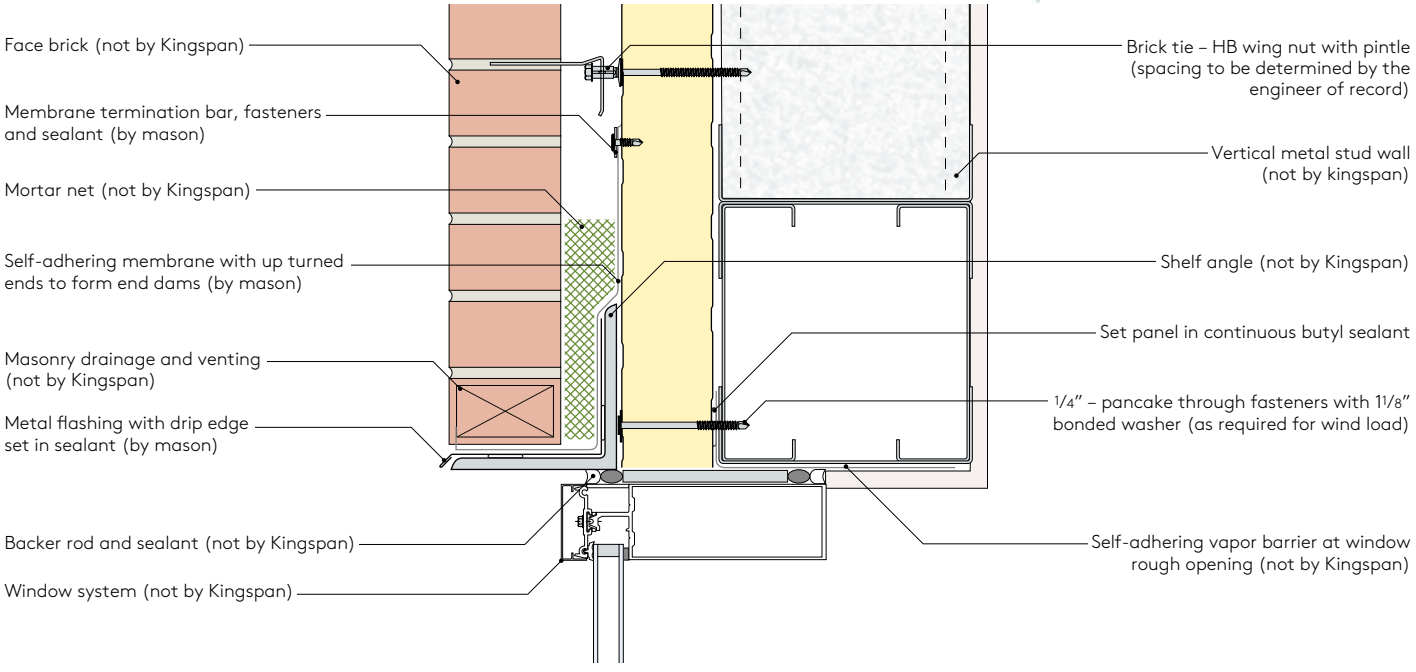
Construction Details: Horizontal

Engaged Panel – Brick Rainscreen



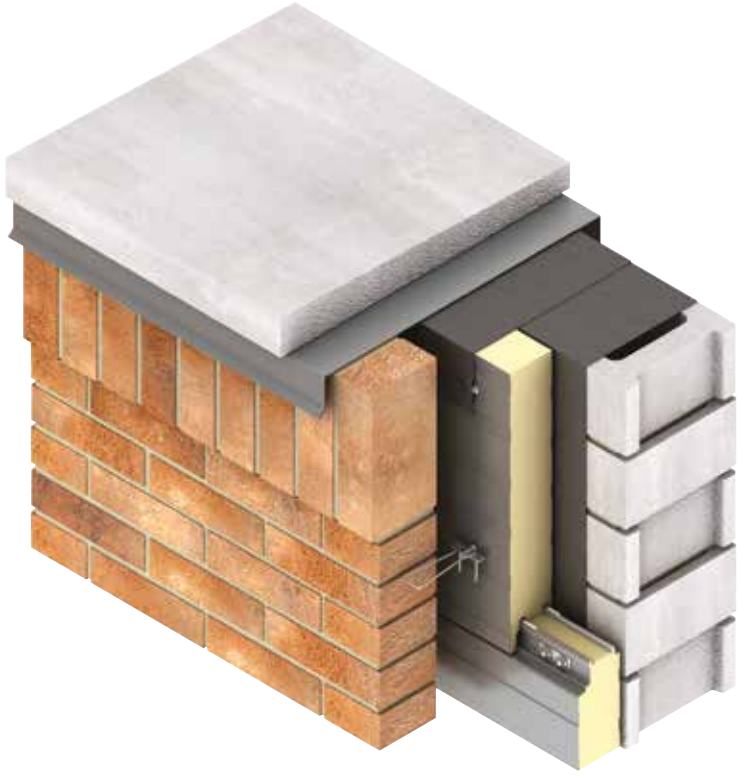
Framed Opening – Brick Rainscreen

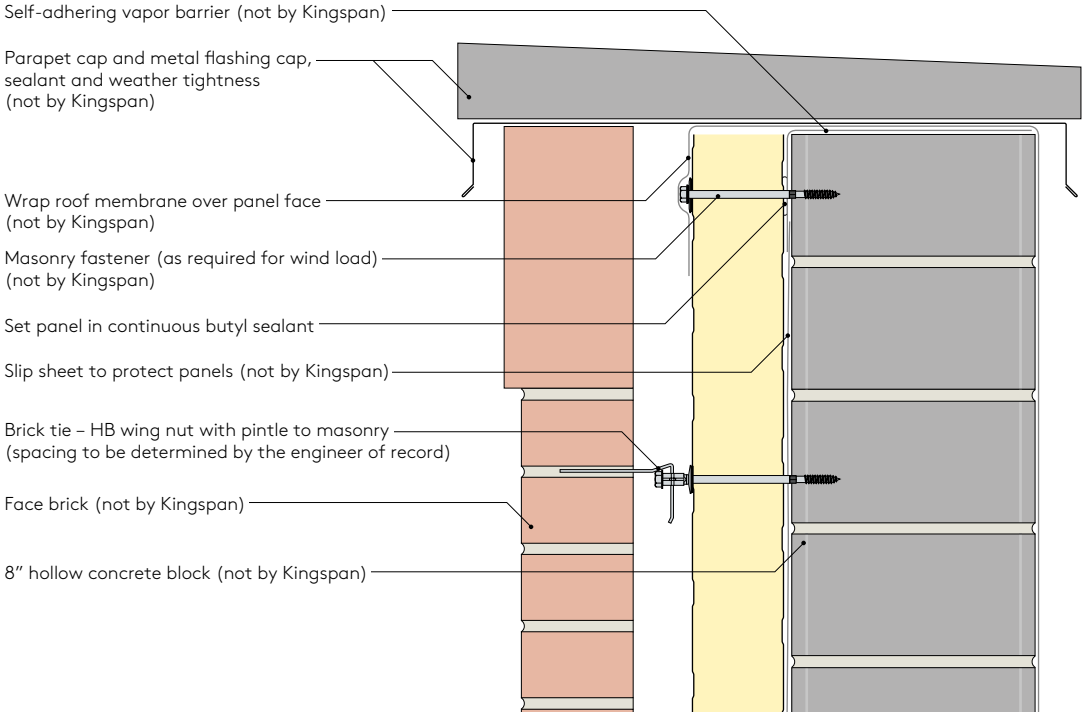




Construction Details: Horizontal

Framed Opening – Brick Rainscreen



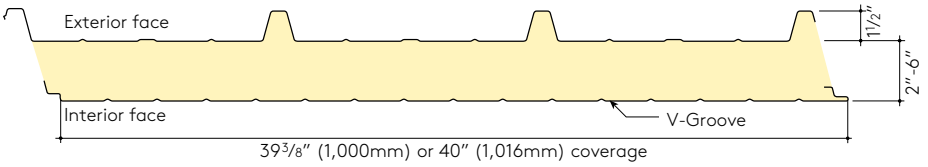


Euclid Corridor Senior Housing,
Cleveland, OH.

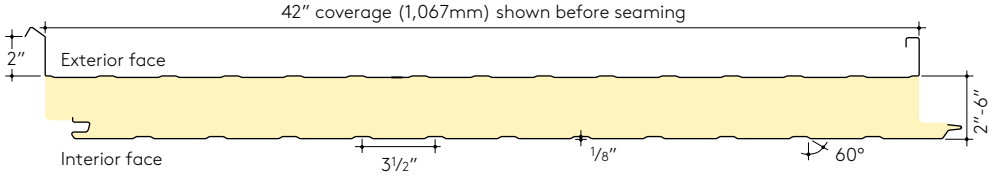
Construction Details: Roof

Panel Profiles

High Rib



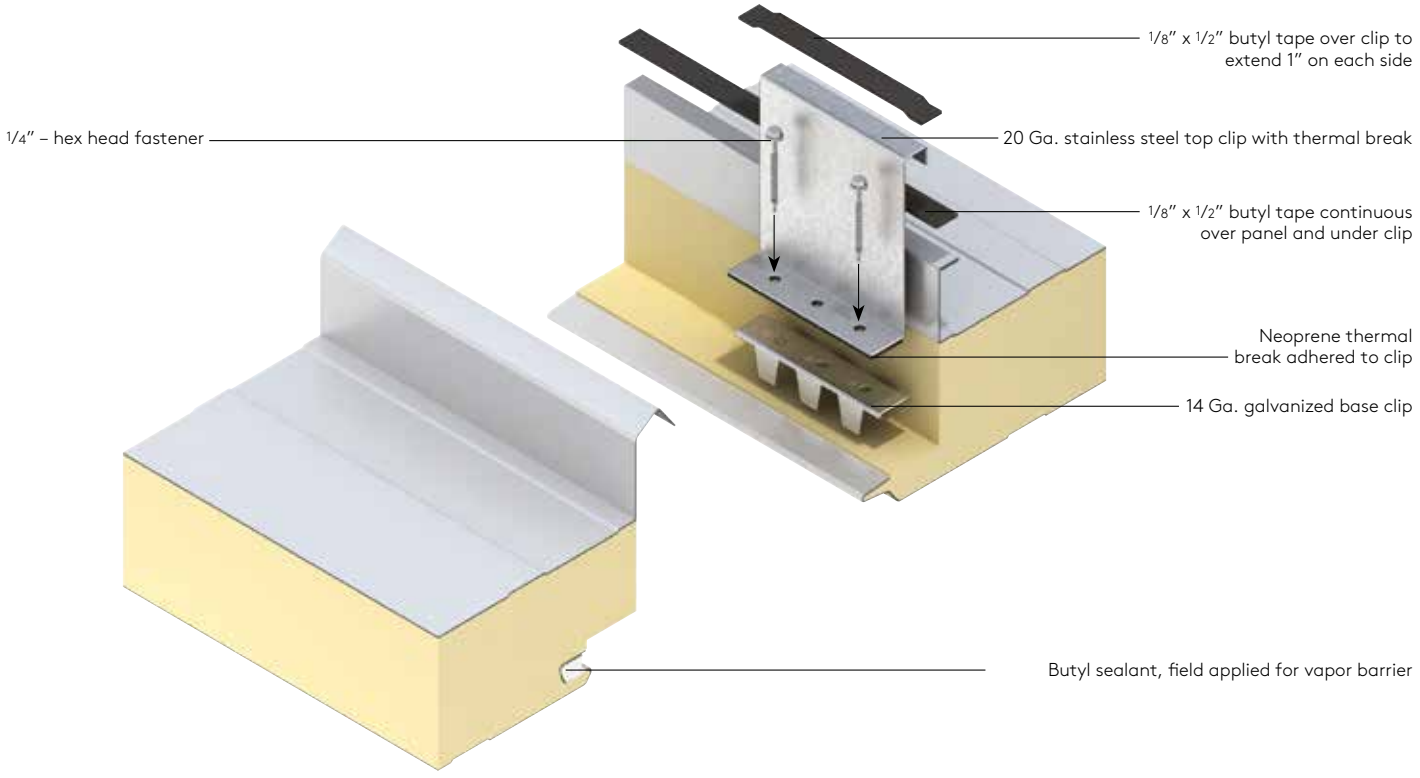
KingZip™

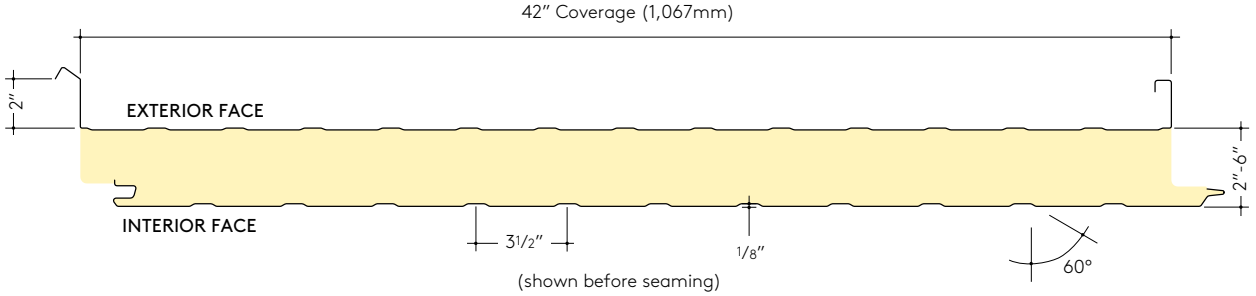


Adelaide Convention Centre,
Adelaide, Australia.

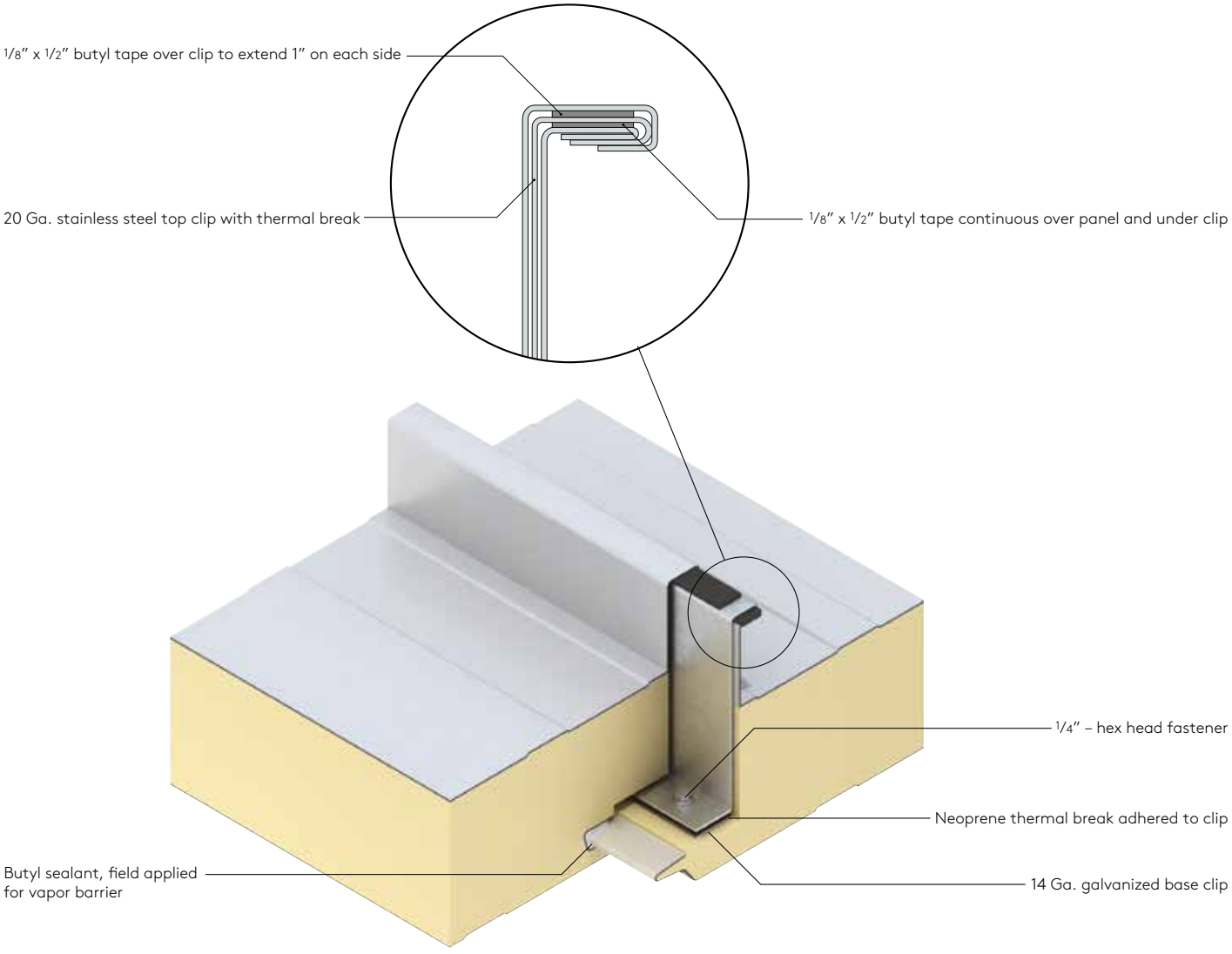
Construction Details: Roof

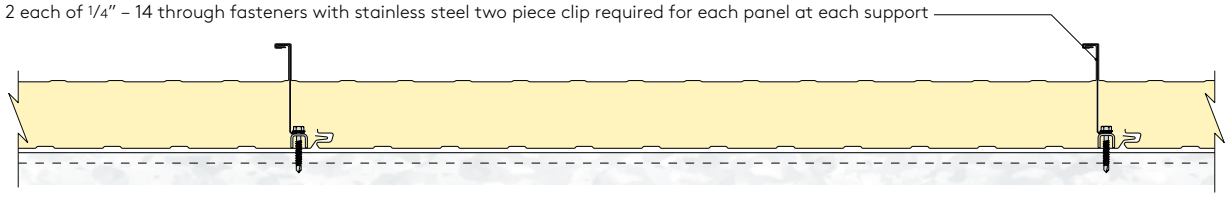
KingZip™ Side Lap





KingZip™ Side Lap

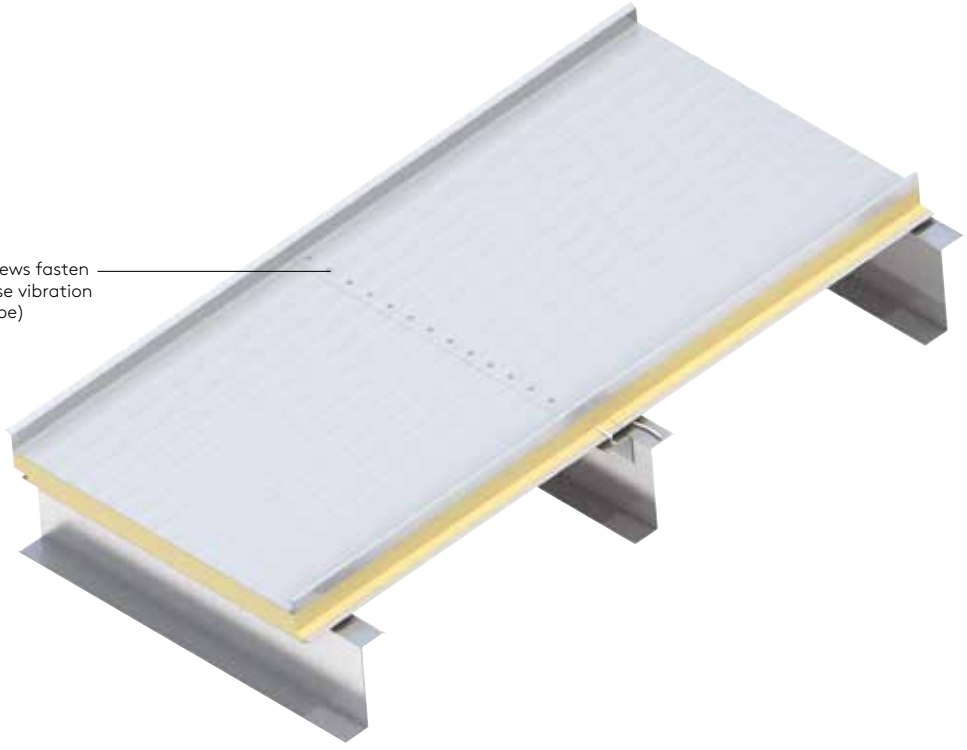


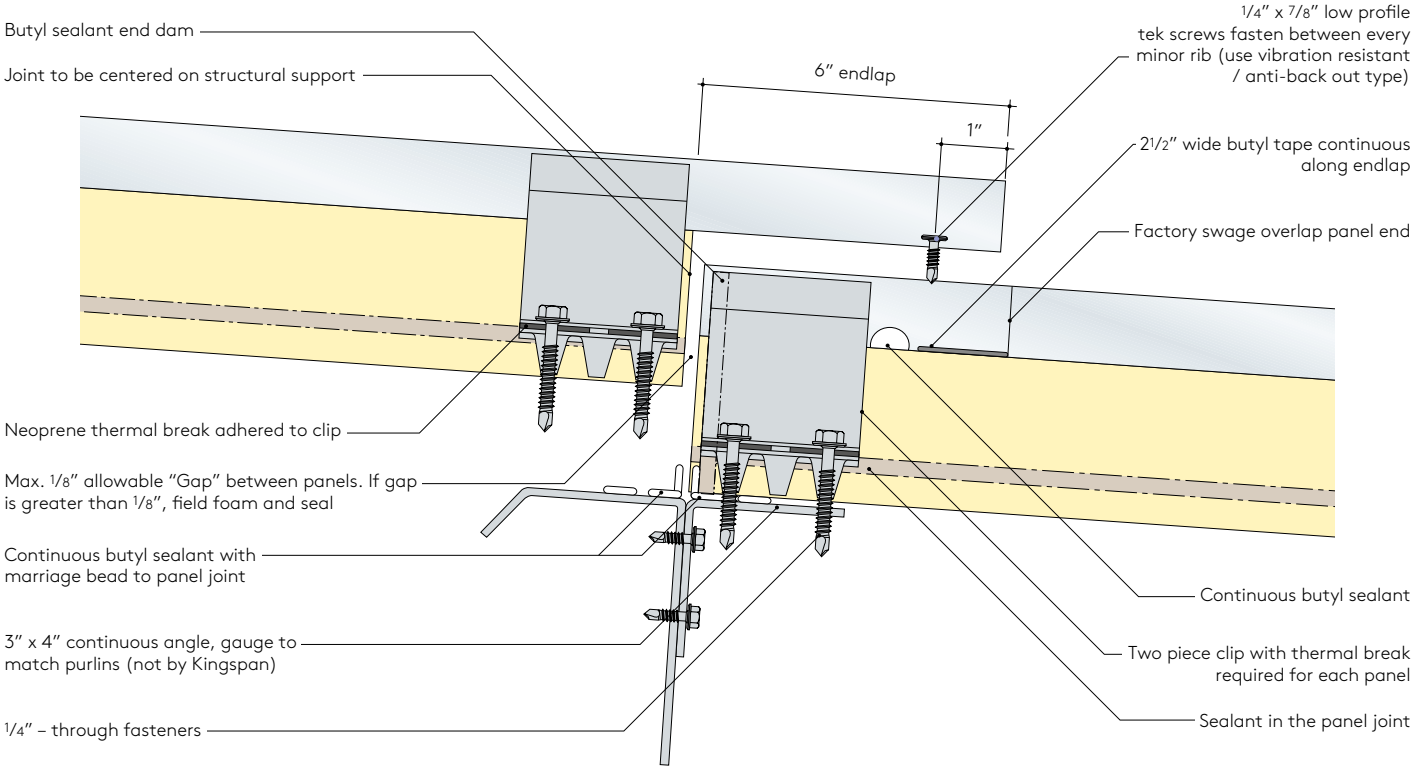


(shown after seaming)

Construction Details: Roof

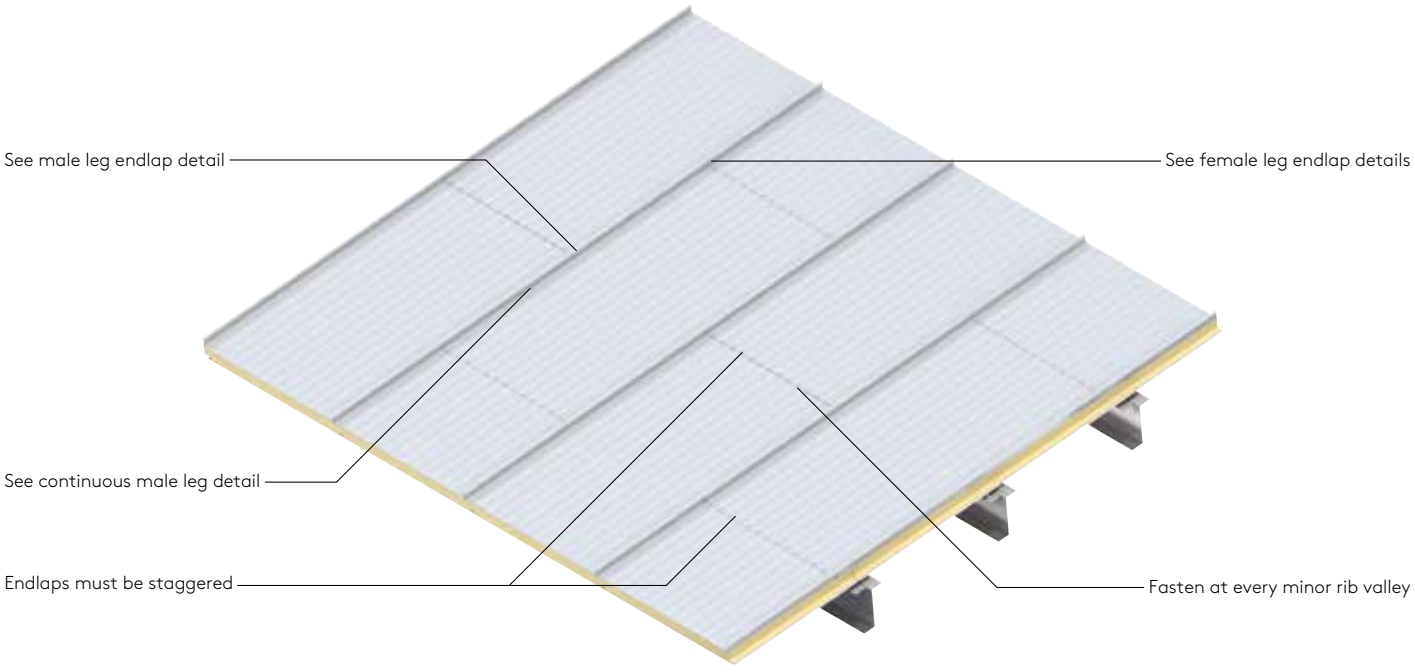
KingZip™ End Lap



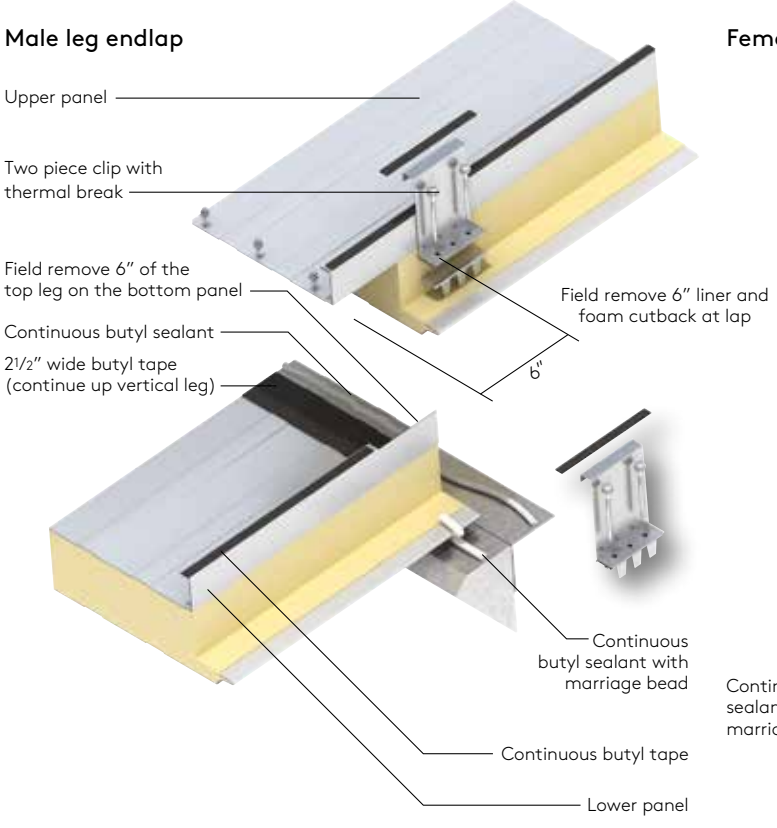


Note: Min. 5" wide support at each endlap for proper panel attachment.

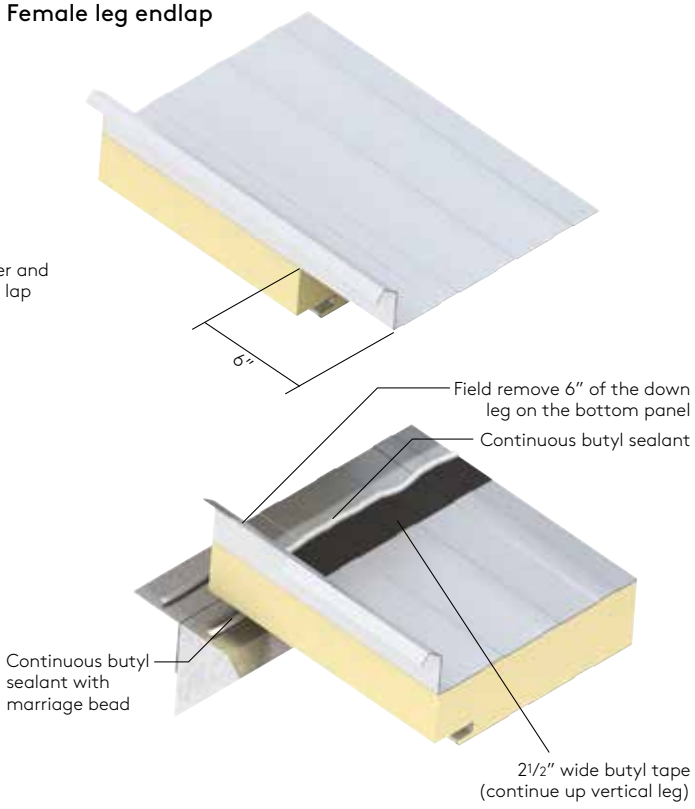
KingZip™ Staggered Endlap Assembly



Male leg endlap

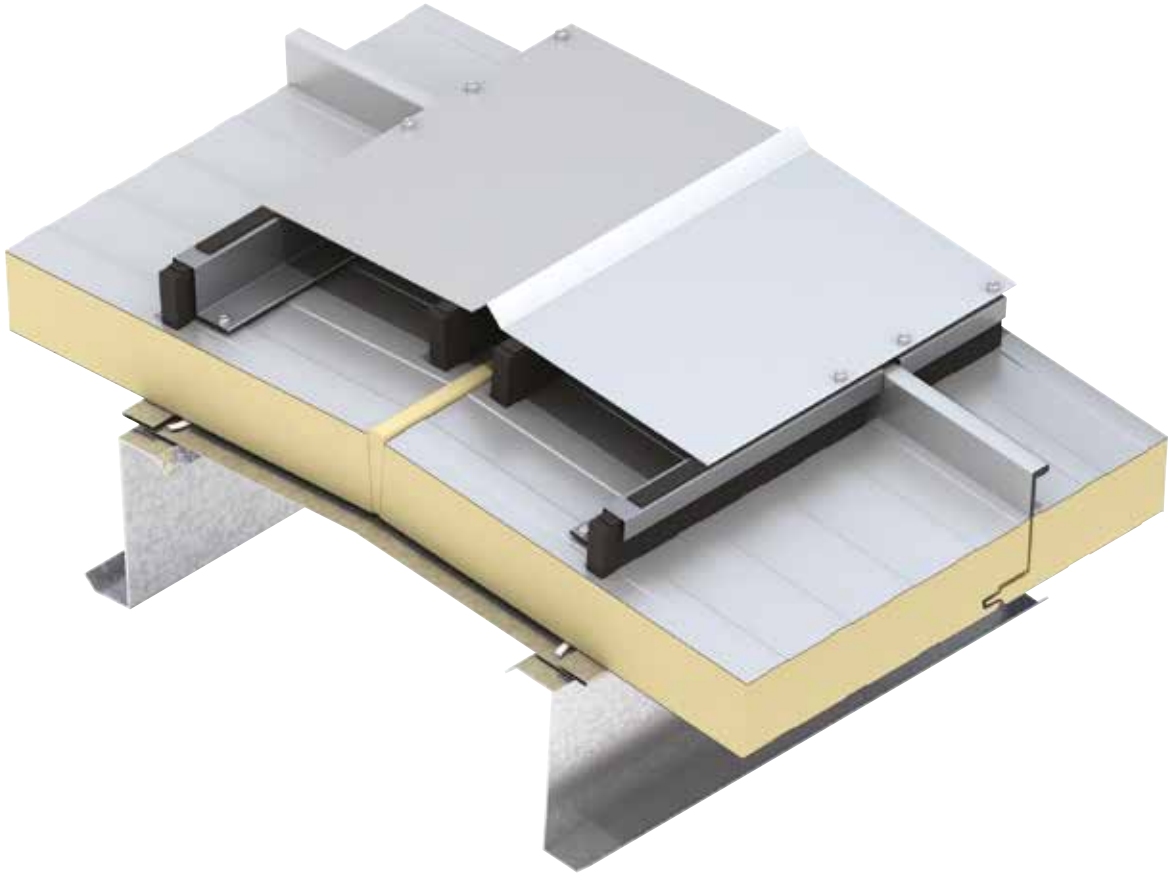


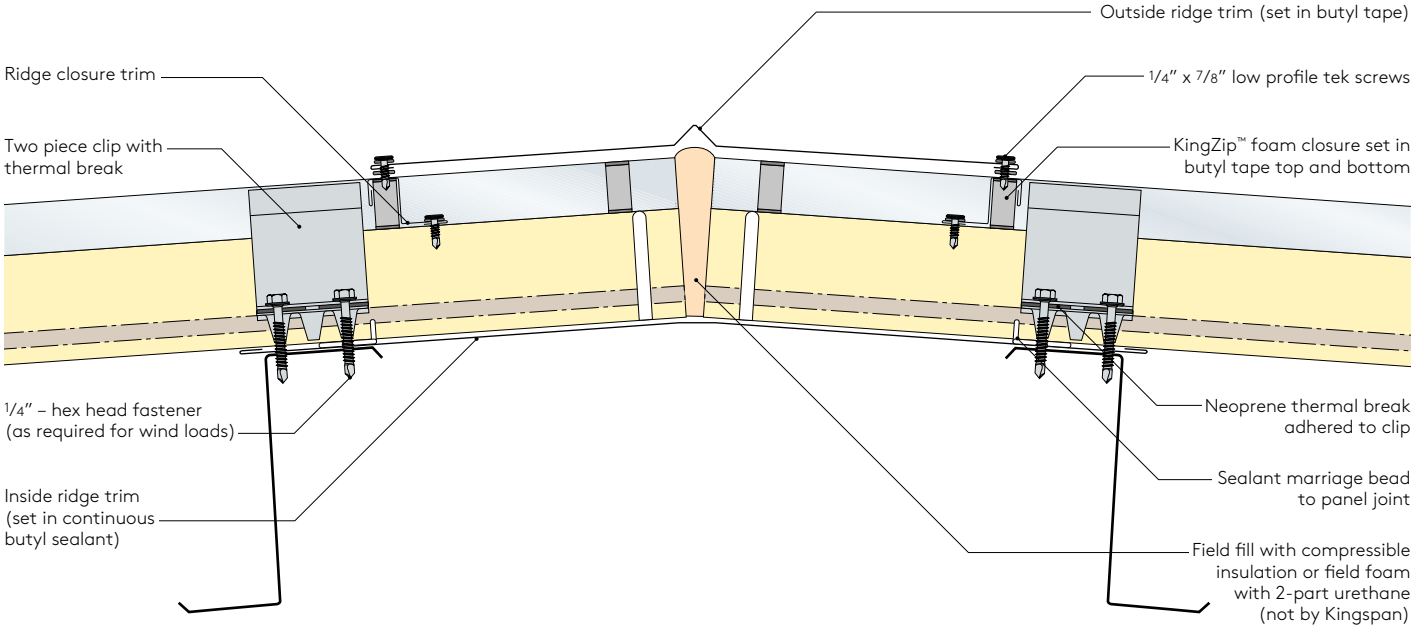
Female leg endlap



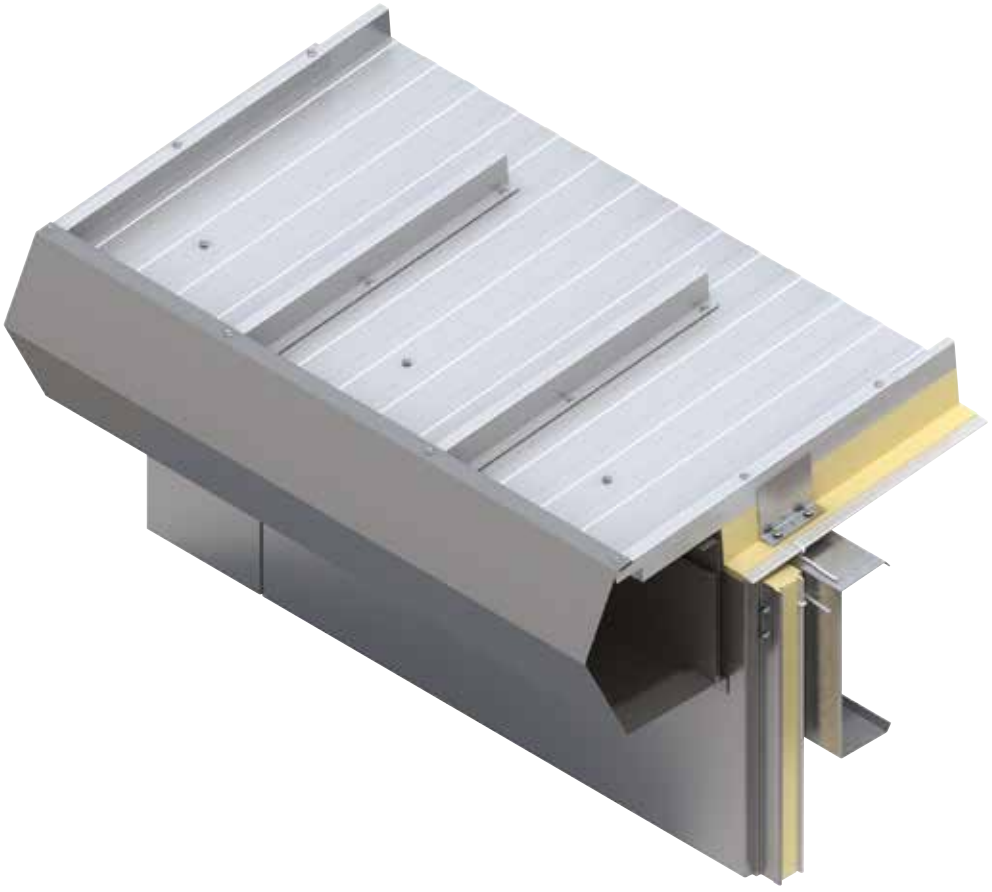
Construction Details: Roof

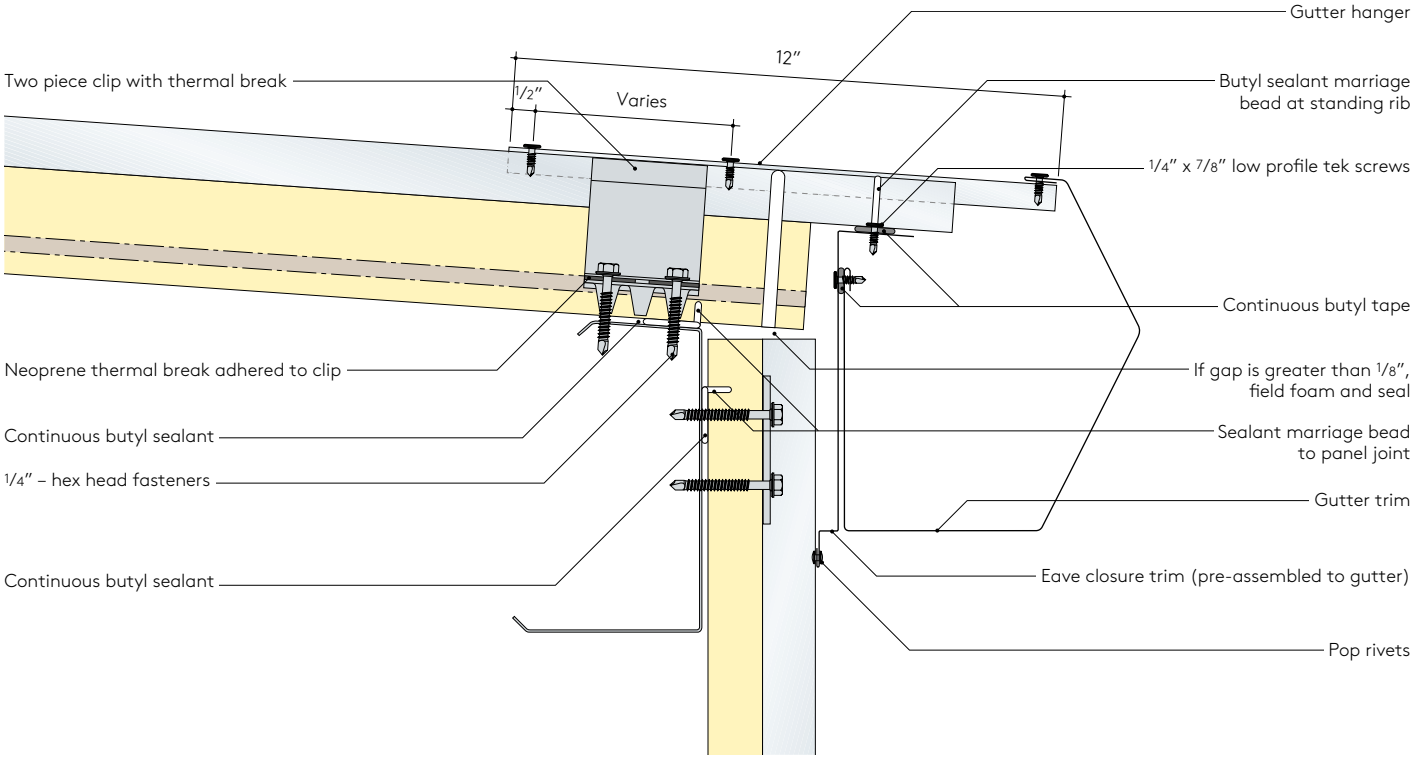
KingZip™ Ridge





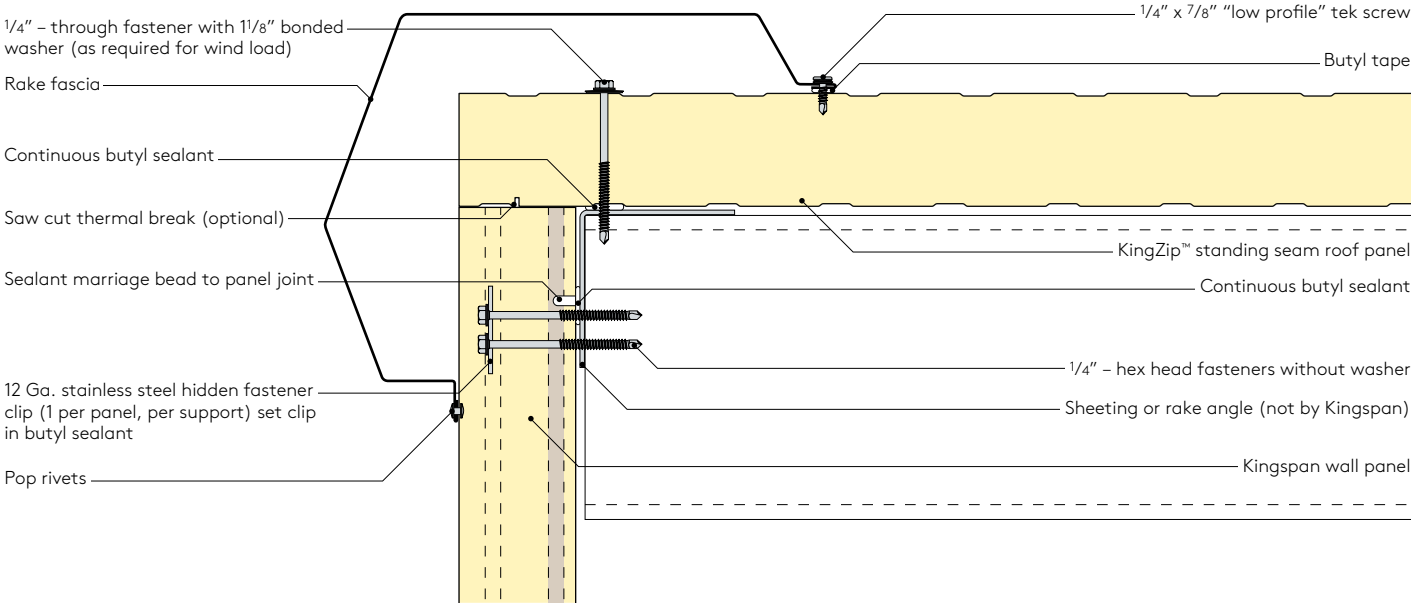
KingZip™ Eave with Gutter



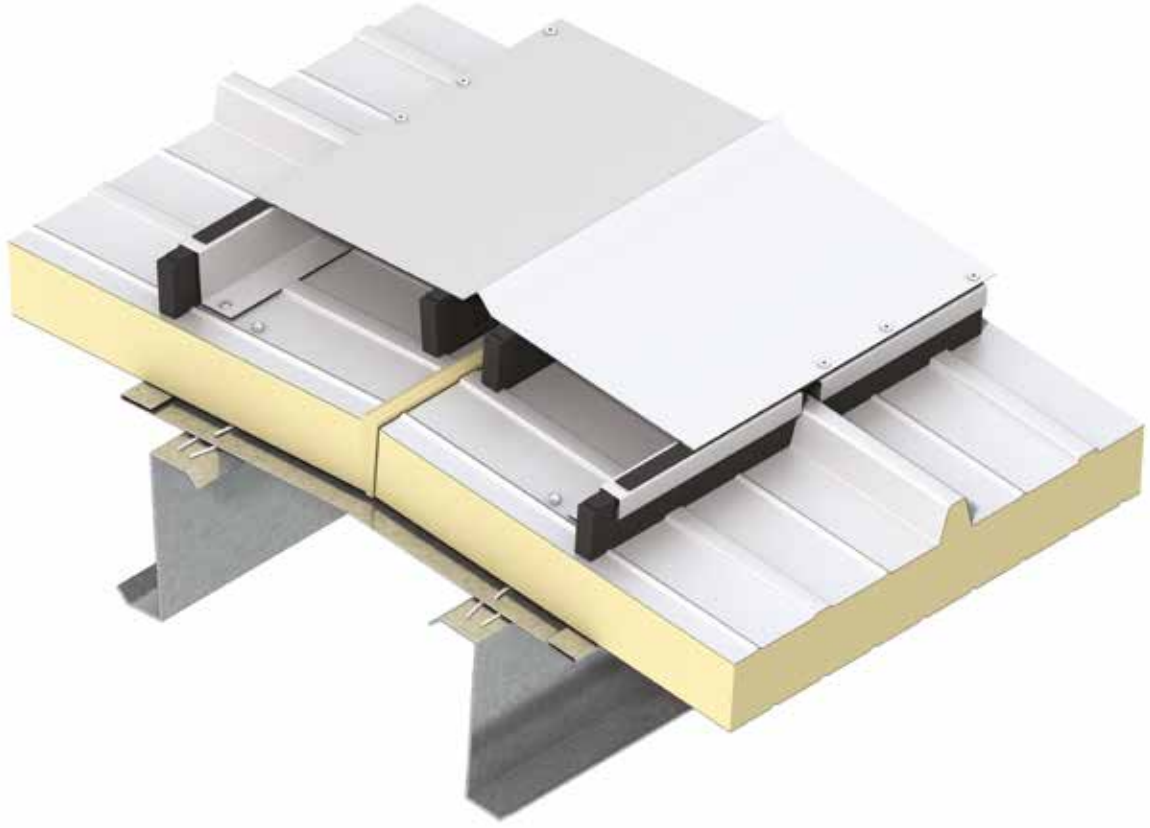


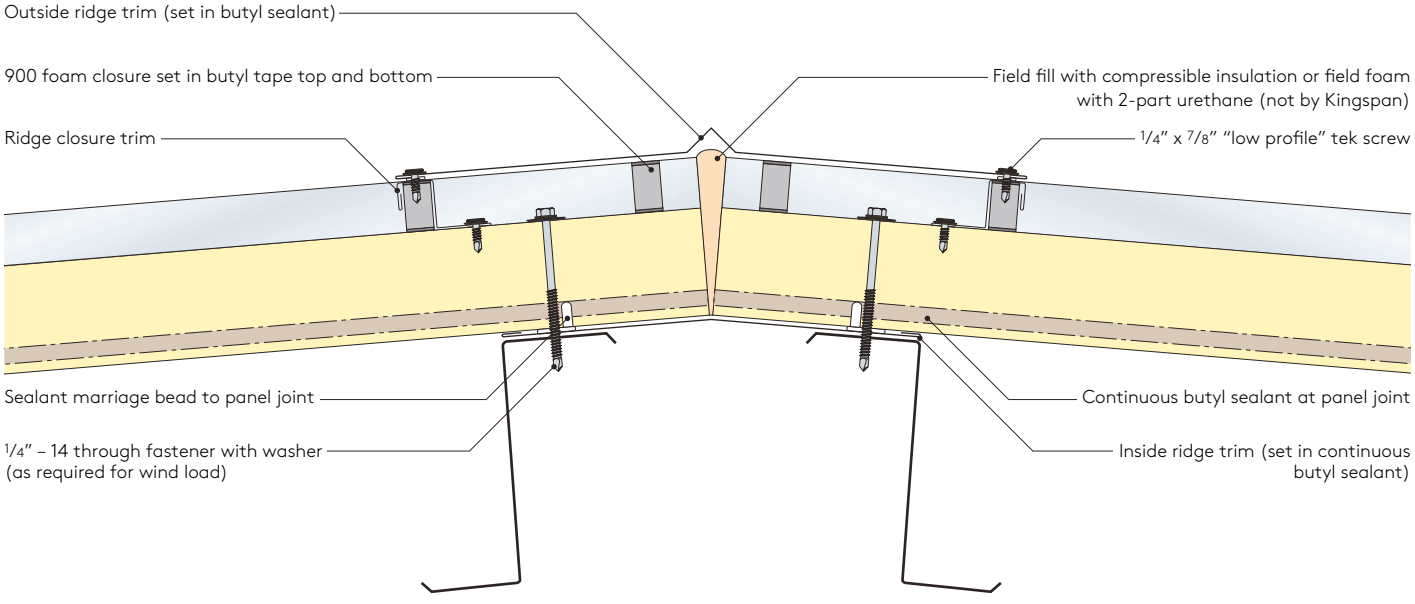
Construction Details: Roof

KingZip™ Rake



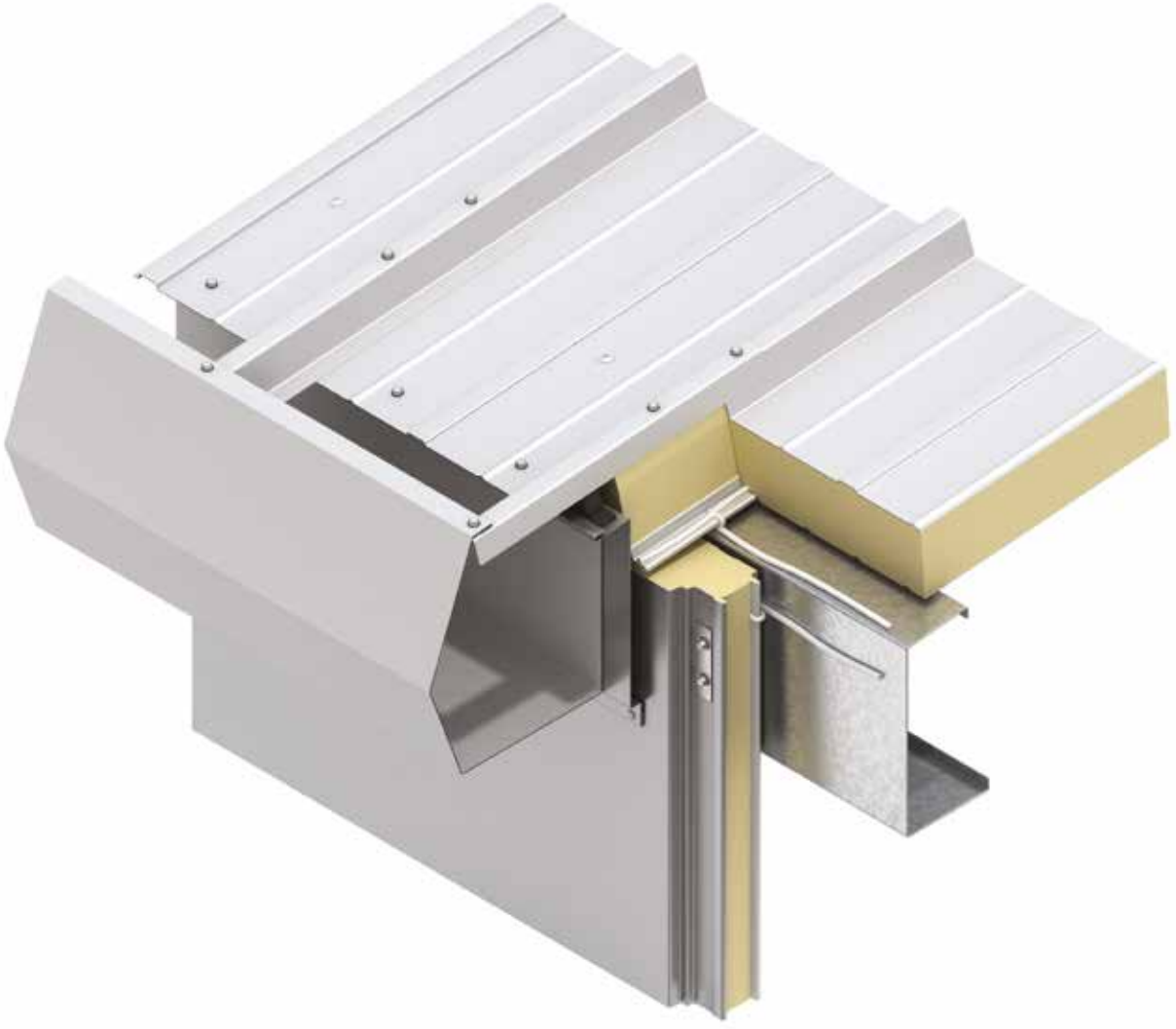
900 Series Ridge

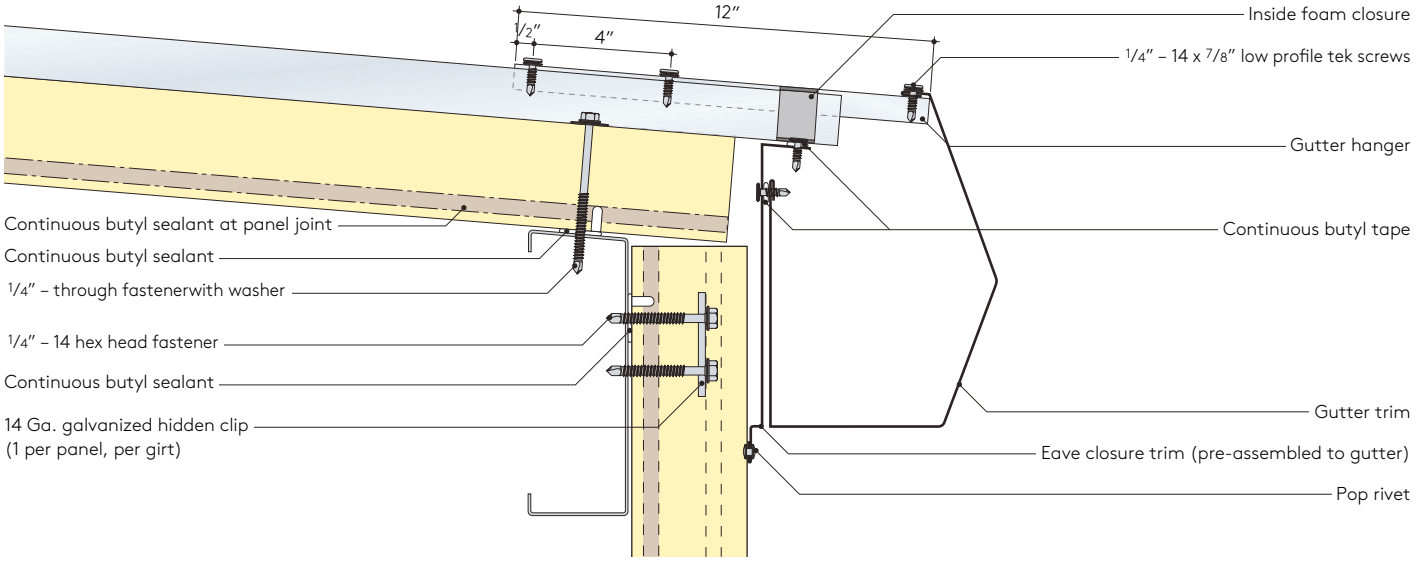




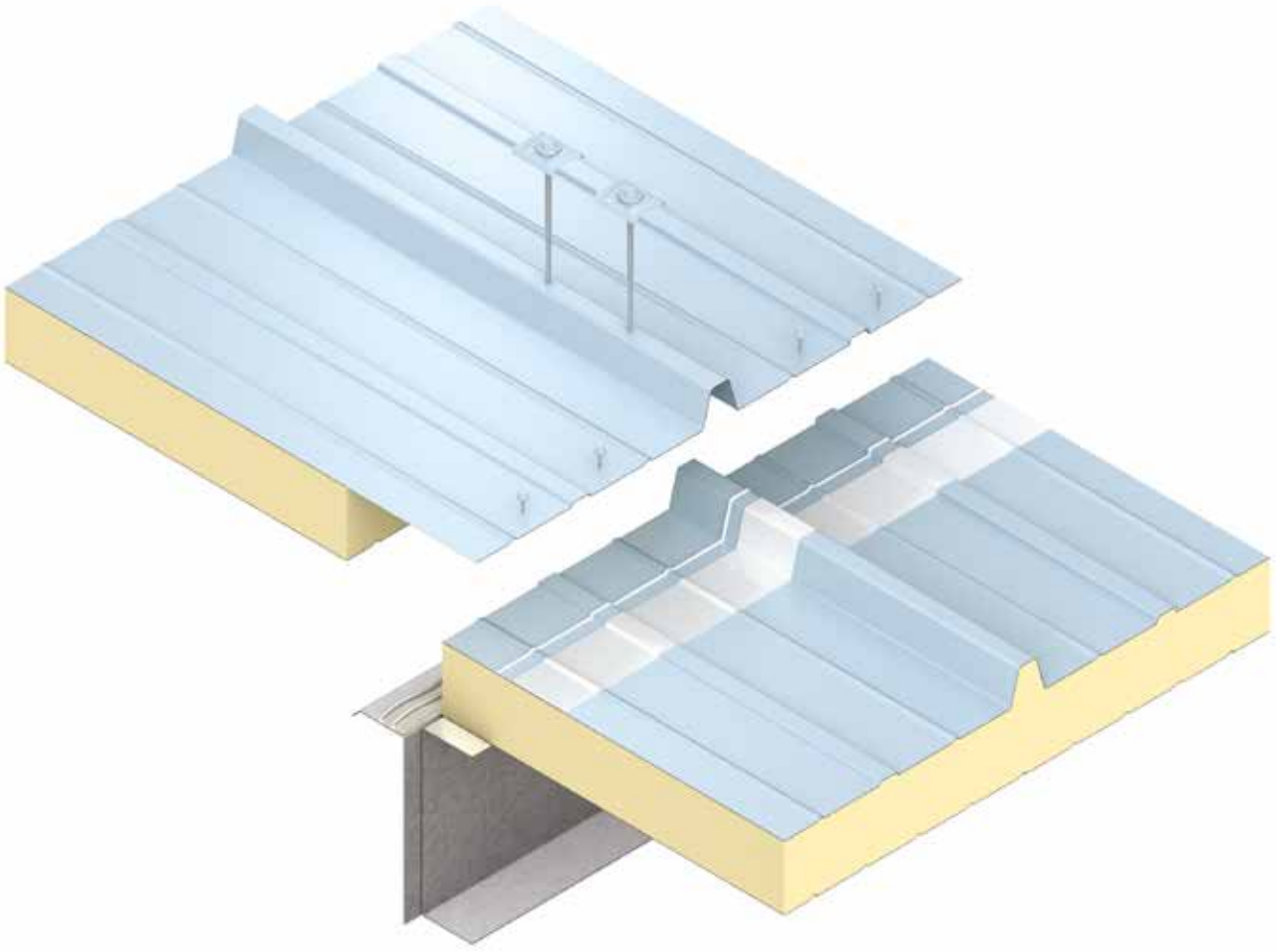
Construction Details: Roof

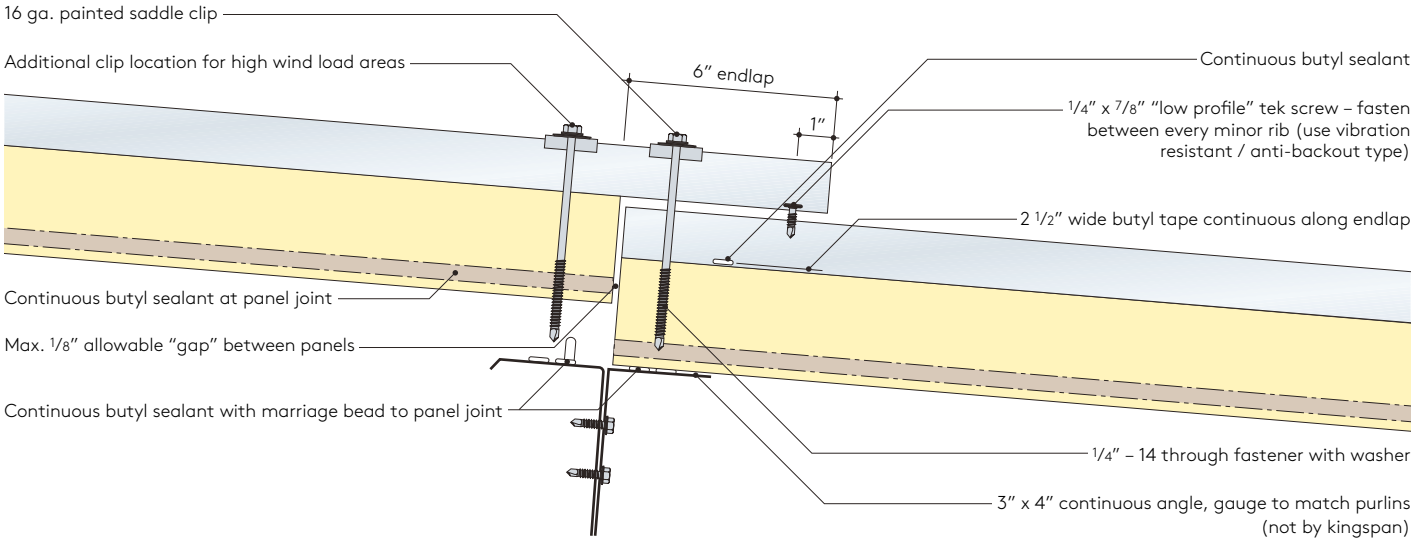
900 Series Low Eave with Gutter





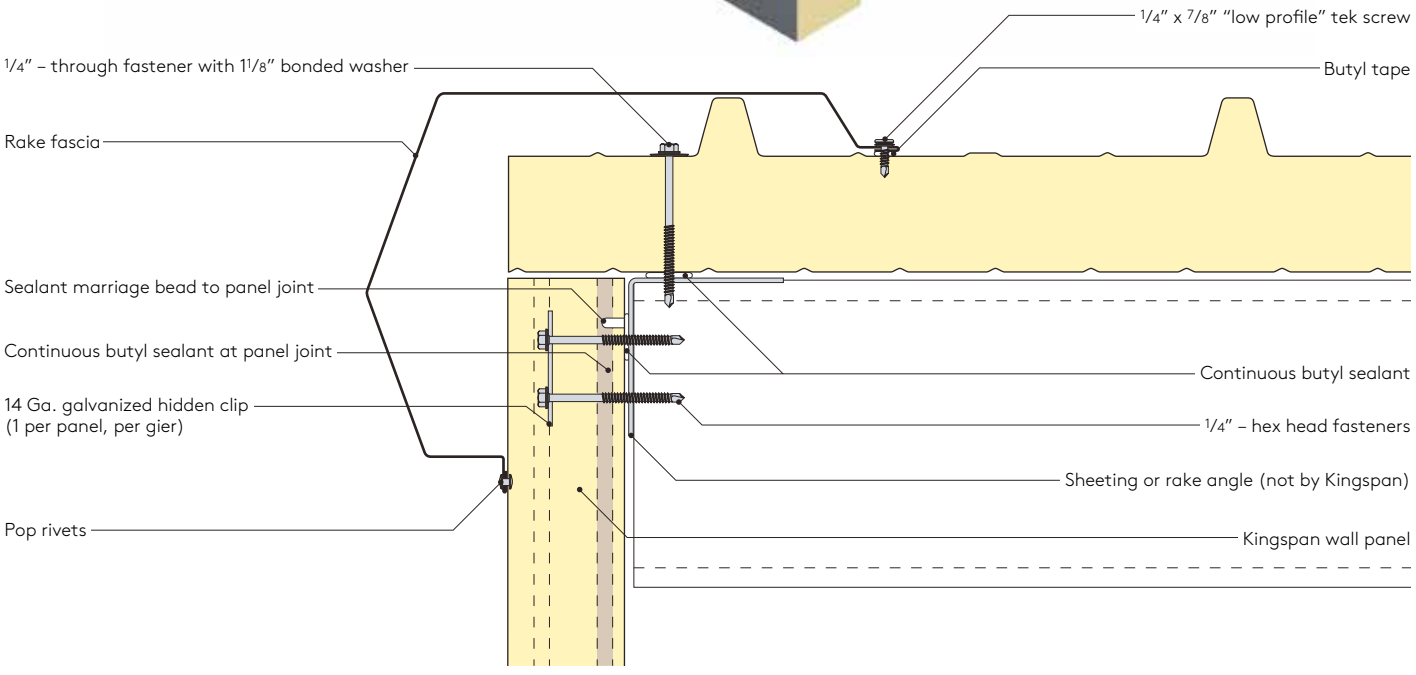
900 Series Endlap





Construction Details: Roof

900 Series Rake



Paraparaumu College,
Wellington, NZ.

Accessories

Kingpsan recognizes that accessory components can provide the vital finishing touch to any project. We can supply various accessories from trims, insulated gutters, and roof components to unique architectural features, where clean lines and quality finishing can enhance the aesthetics and performance of any project.

Extensive fabrications experience, investment in the latest technology and R&D means that Kingspan Insulated Panels has the ability to provide a wide range of components and accessories to meet even the most demanding project requirements.

Salem State University Finess Center, Salem, MA.

Aluminium Extrusions

Kingspan provides an extensive range of standard and custom ancillary components, which can be used to enhance the architectural imagery of the building.

Product Specifications

- ◇ Fully integrated with insulated metal panel systems
- ◇ Pre-painted aluminum
- ◇ Available in a range of lengths
- ◇ Factory assembled

Base extrusion

Concealed base extrusion

Double gasket concealed base extrusion

Soffit extrusion

2-piece endwall extrusion

2-piece outside corner extrusion

2-piece inside corner extrusion

Arrowhead outside corner extrusion

Sill extrusion

2-piece vertical joint extrusion

Arrowhead inside extrusion

Horizontal stack joint extrusion

Concealed soffit extrusion

Integrated coping

Base extrusion splice plate

4″ reveal for 2″ panel

Factory Broken Trims

Accessories and trims are an important part of any project. Not only can they add to the aesthetic appeal of the end build, but it is important that they perform well. From quickly removing rainwater to weatherproofing joints, accessories are a vital part of any project.

Product Specifications

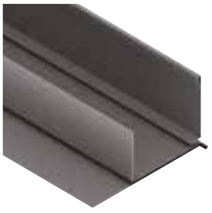
- ◇ Fully integrated with insulated metal panel systems
- ◇ Pre-painted AZ50 Galvalume or G90 Galvanized
- ◇ Available in a range of lengths
- ◇ Factory assembled
- ◇ Available in a range of coatings

Base drip flashing

Base cover flashing

Parapet flashing

Window sill flashing



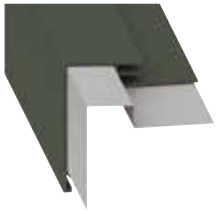
Window / door head flashing

Jamb trim flashing

Internal corner flashing

Corner flashing lap strip

Wall corner flashing



Parapet trim – press broken

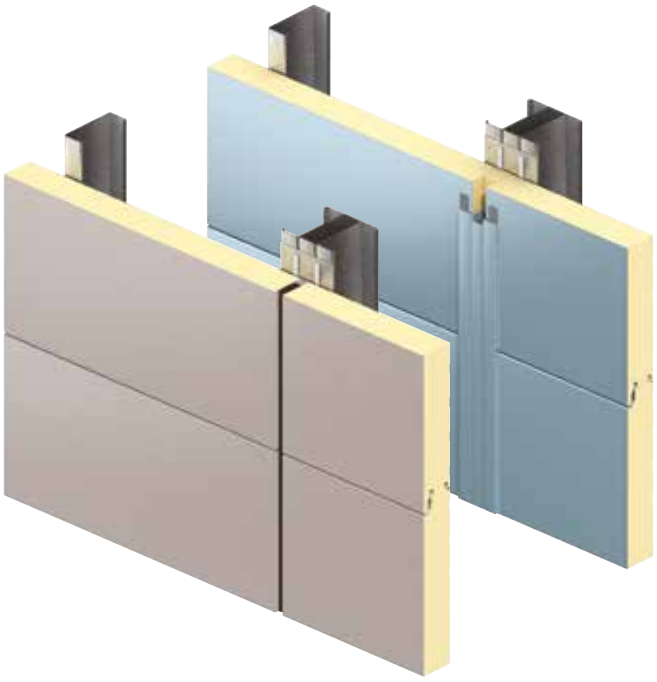
Wall corner flashing – hidden fasteners

Top Hats and Trimless End Gaskets

Top hat sections, recessed or flush, are designed to blend in with panel profiles.

Product Specifications

- ◇ Fully integrated with Kingspan Insulated Metal Panel systems
- ◇ Pre-painted aluminum top hat extrusions
- ◇ Available in a range of lengths
- ◇ Available in a range of coatings



Vertical top hat extrusion – flush for non-trimless end

Vertical top hat extrusion – recessed

Vertical top hat extrusion – flush

Santoprene® rubber gasket (VJ-1)

Santoprene® rubber gasket (VJ-2)

Santoprene® rubber gasket (VJ-5)

"Trims provide the finishing touch to a building envelope. From simple functional trims which protect joints and cut edges to attractive corner coverings, the trims range combines functionality and performance with true aesthetics."


NOW
HIRING

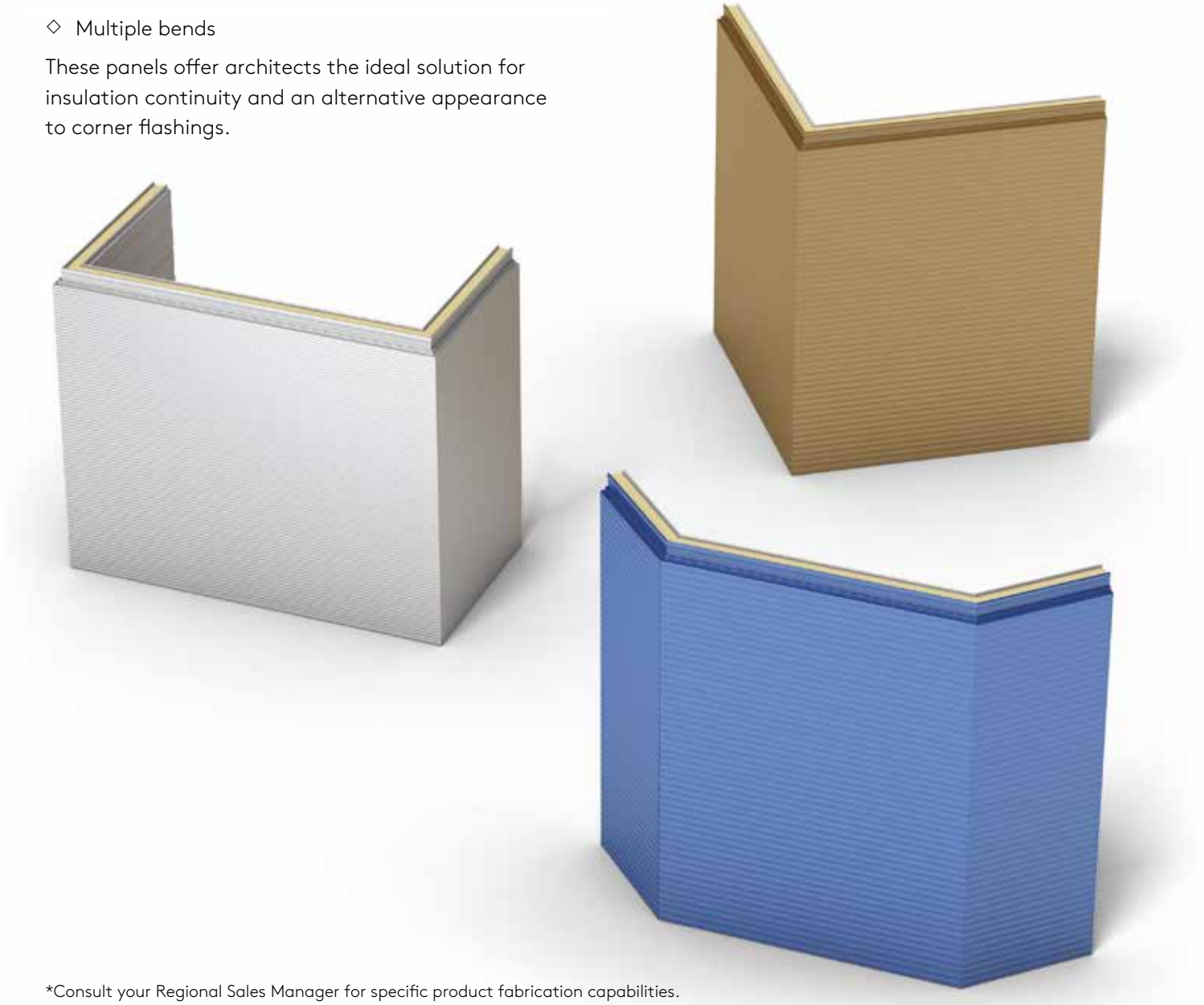
Custom Panel Fabrication

Factory Pre-formed Corners

Custom pre-formed corners are essential to the aesthetics of a building. Internal and external, vertical and horizontal units are available in the following options*:

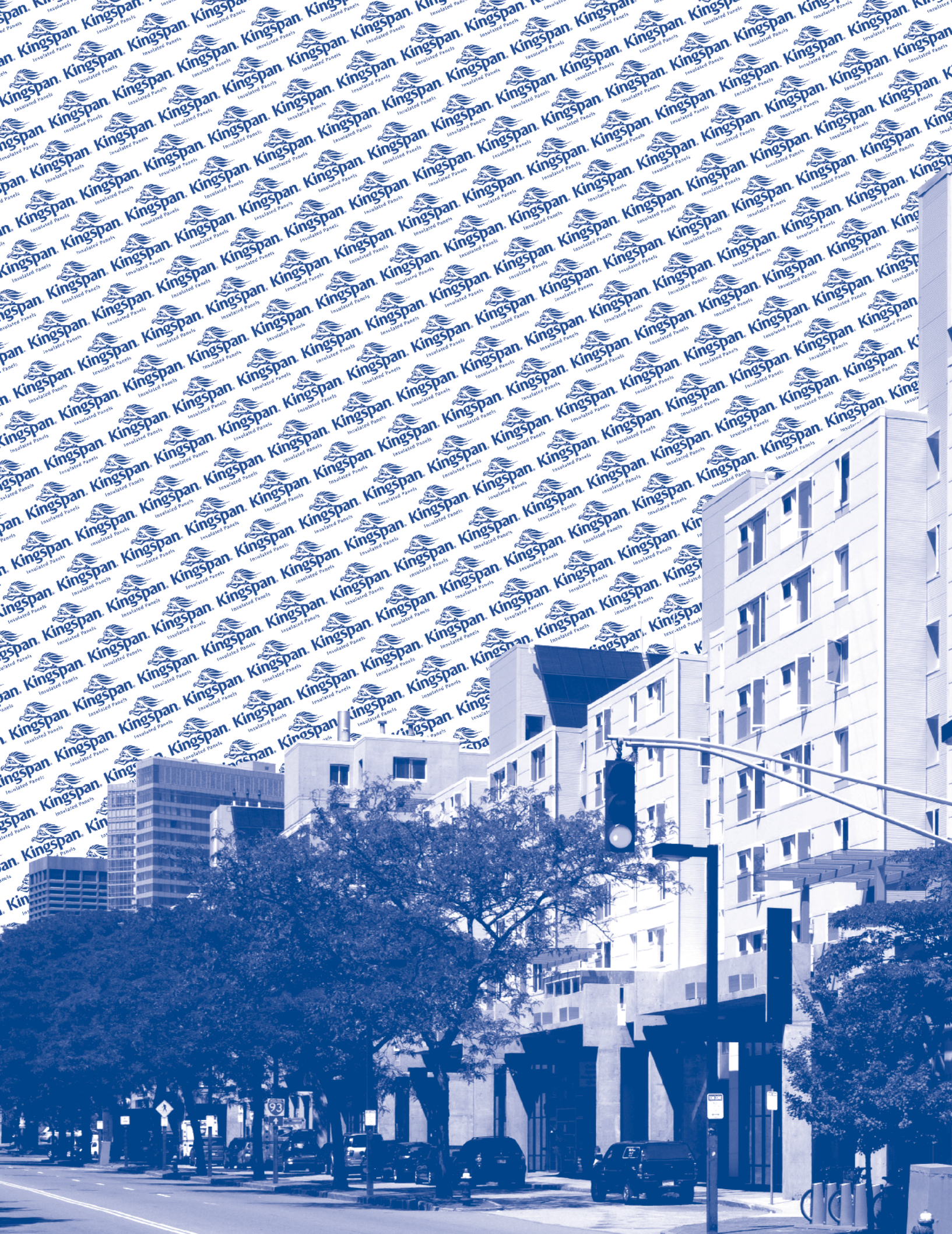
- ◇ Corner extrusions
- ◇ Trimless corners
- ◇ Pre-formed corners
- ◇ Multiple bends

These panels offer architects the ideal solution for insulation continuity and an alternative appearance to corner flashings.



*Consult your Regional Sales Manager for specific product fabrication capabilities.

Portland Community College, Portland, OR.

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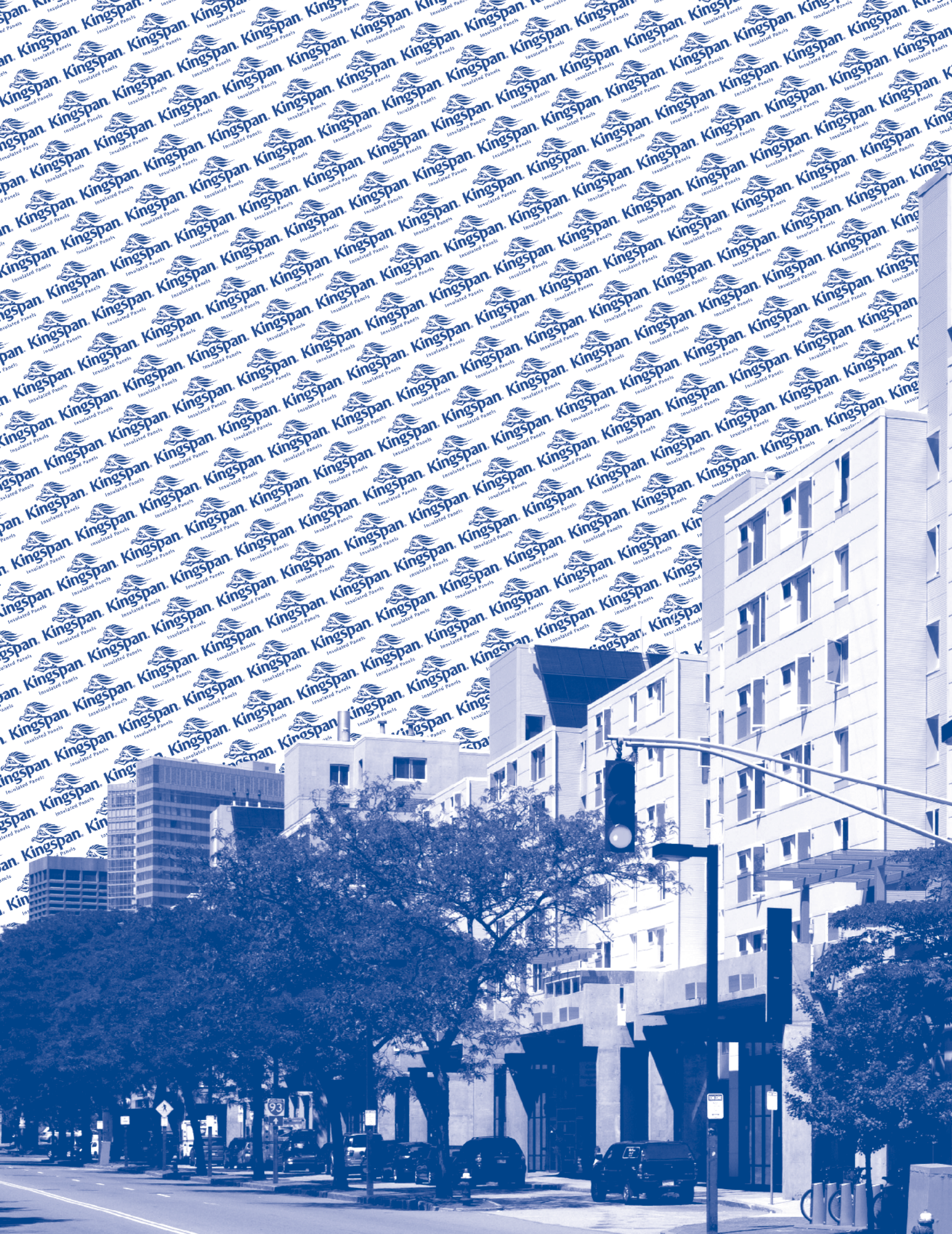
E.BERKELEY ST
LT JEREMIAH W SULLIVAN
SQUARE



Kingspan®
Insulated Panels

Kingspan Insulated Panels North America

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June 2017