Product Portfolio

Systems and Solutions Guide

Wall Panels / Roof Panels / Accessories

















Kingspan

QuadCore® Technology Your Global Partner Products at a Glance Performance Benefits Life Cycle Assessment **VOC Testing**

KarrierPanel®

Wall Panel Systems

KS Series Azteco™ KS Series Shadowline KS Series Mini Micro-Rib KS Series Micro-Rib 16 KS Series Mini-Wave 20 KS Vektra™ KS Series Granitstone®

> Optimo® 29 Vale™ K-Roc™ HF Series

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Roof Panel Systems

KingRib® 3 / KingRib® 5 38 KingSeam® 39



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"Together we have the opportunity to make our built environments more energy efficient, attractive, adaptable, environmentally sensitive and productive. The way we build can be more effective and reach higher standards than ever before.

We can make our buildings really work for us; consuming and generating energy smartly to become real investments in our future."

Gene M. Murtagh, CEO, Kingspan Group.

Higher Building Performance with Kingspan

It's all in the gray cells

QuadCore® Technology is Kingspan's next generation of self-blended hybrid insulation core. Across the world of insulated panels, this innovation with its distinctive gray microcells powers the industry's highest combined performance:

- Exceptional thermal efficiency
- Superior fire protection
- Unmatched health & wellness certification
- 30-year thermal warranty

QuadCore® Technology, together with our end-to-end services and whole building design know-how, takes Kingspan buildings to a higher level of lifetime performance, and delivers the ultimate protection for our partners, their buildings, and the environment for future generations.





Exceptional Thermal Efficiency

QuadCore® Technology is certified as one of the most thermally efficient closed-cell insulation cores on the market.

Lifetime performance and value benefits

- The highly efficient R-value of R-8.0 per inch has the potential to reduce HVAC size, and lower both energy consumption and carbon emissions.
- QuadCore® Technology is a more streamlined solution relative to other insulation materials with associated benefits in interior space optimization, for specific transport, and ease of handling during construction.

Superior Fire Protection

The hybrid nature of QuadCore® Technology delivers a range of improvements in fire performance which surpass all other insulated panel systems incorporating closed-cell insulation materials.

Lifetime performance and value benefits

- For any building owner that wants the best protection against the impact of fire, the unique low smoke characteristics of QuadCore® Technology provide the optimum solution.
- QuadCore® Technology also delivers improved fire resistance ratings leading to more costeffective installations due to economies in steelwork and fixing, in certain applications.

3

Unmatched Health & Wellness Certification

The improved thermal performance of QuadCore[®] Technology helps to optimize resource efficiency. It is also CFC, HCFC, HFC free and has a very low Global Warming potential.

Lifetime performance and value benefits

- C2C Certified Material Health Certificate™ Silver
- GREENGUARD Gold certified
- Environmental Product Declaration (EPD)





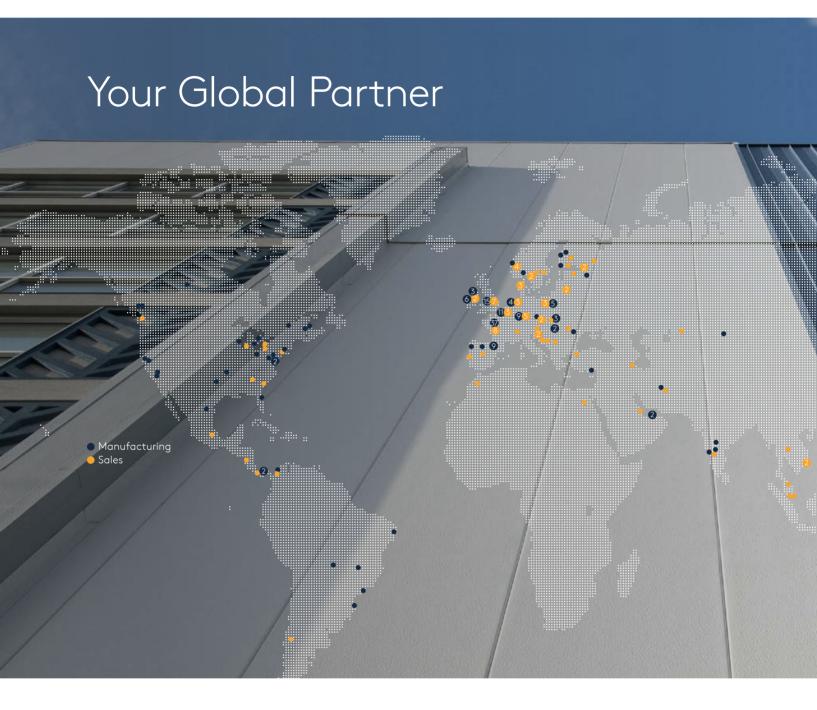


C2C Certified Material Health Certificate™ is a trademark of the Cradle to Cradle Products Innovation Institute.

4

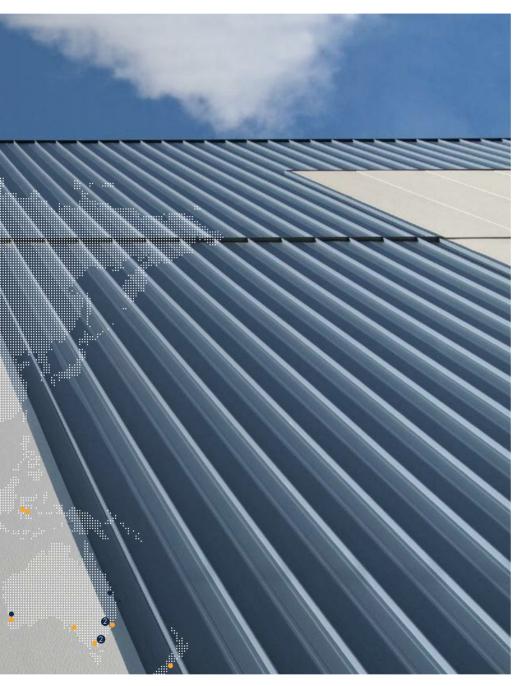
30-year Thermal Warranty

The inimitable science behind QuadCore® Technology and comprehensive independent third-party testing has delivered the industry an unparalleled 30-year thermal performance warranty.



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

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.



How we operate

212+

Global manufacturing facilities

22,000+

Employees

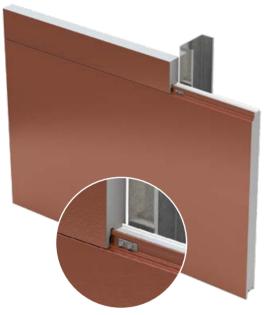
- Management controls
- Quality systems
- Responsible supply chain partnerships

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, daylighting and ventilation systems, integrated PV and structural steel solutions.

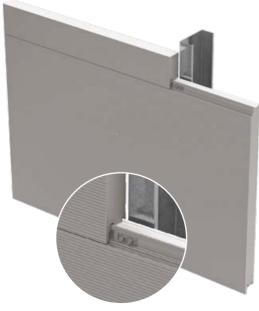
Together with the learnings from our ongoing research into better building design, these enhanced Kingspan envelopes will take our built environment to the next era of efficiency and wellbeing.

Products at a Glance

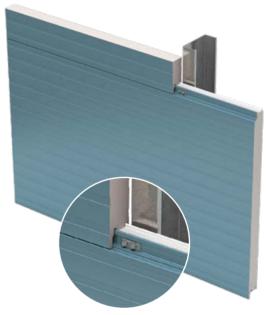
Wall – Vertical and Horizontal Application



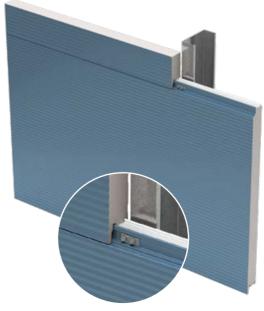
KS Azteco™



KS Mini Micro-Rib

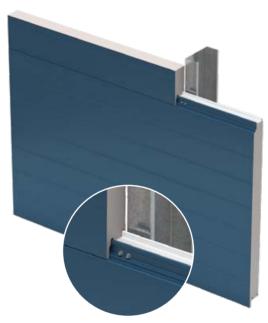


KS Shadowline



KS Micro-Rib

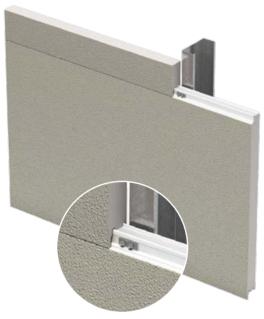




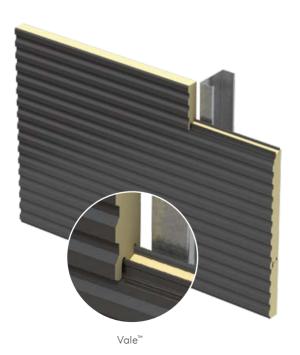
KS Vektra™

Products at a Glance

Wall – Vertical and Horizontal Application



KS Granitstone®





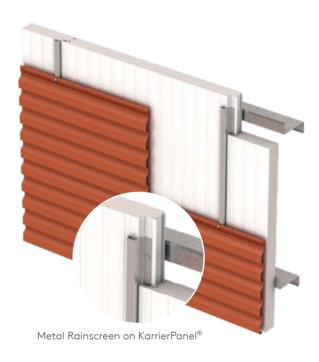




K-Roc HF

Wall with Facade





Products at a Glance

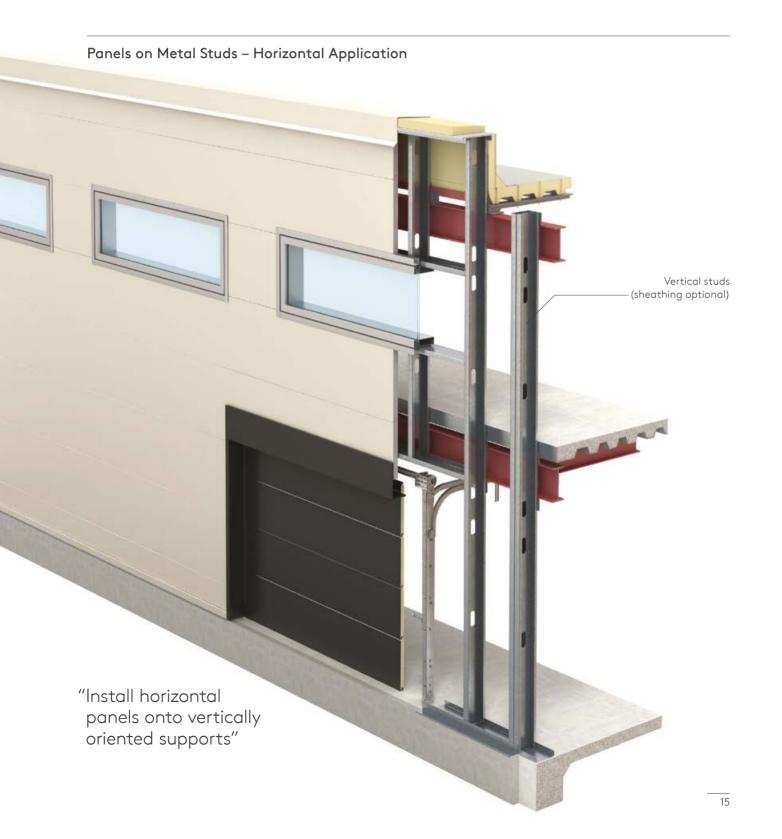






Products at a Glance



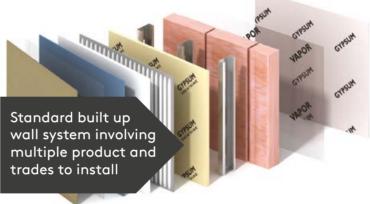


Performance Benefits

Build Speed

Wall Assembly Installation





Number of Components
3
7-8
6
11
7
3-6





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 save \$175,000 profit in this time as the building is open for business and revenue is generated.

Construction Schedule









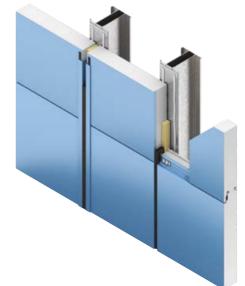


Design Flexibility and Aesthetic Appeal

Kingspan's insulated roof and wall panels offer designers a comprehensive range of building solutions for vertical and horizontal wall applications.

Available in multiple profiles, finishes and color options, trimless ends and cover widths, insulated panels provide customized building design and creative freedom.

The panels are easily integrated with traditional construction methods and building systems.



Performance Benefits Thermal Performance

Kingspan insulated wall systems offer superior R-values with unparalleled thermal performance during service life, all built-in to a single off-site, factory assembled insulated panel.

High R-Value

Kingspan insulated panels' insulating cores provide superior thermal performance with tested R-values of 7.2* per inch. 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 foam-to-foam contact, which provides an unbroken thermal shield against heat transfer.

*QuadCore® approx. R-8/in at 75F mean per C518.

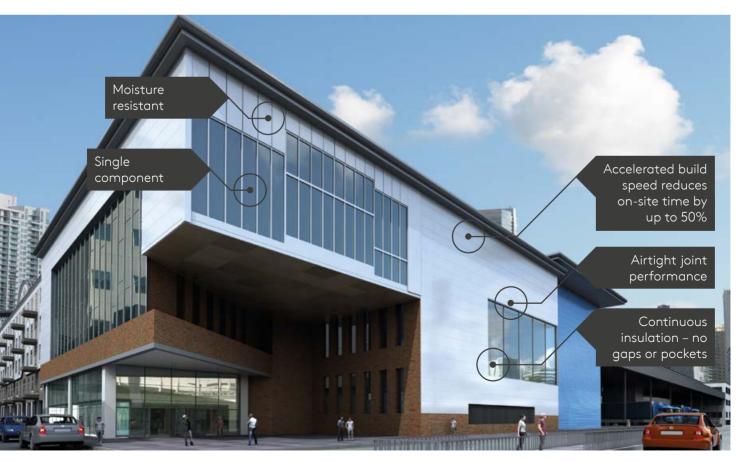
Superior Airtightness and Weathertightness

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.

Kingspan Shadowline Insulated Metal Wall Panel



Direction of heat flow





Life Cycle Assessment (LCA)

SCS Certified FPD

Applies to KS Azteco, KS Shadowline, KS Micro-Rib, KS Mini Micro-Rib, KS Mini-Wave, KS Vektra, KS Granitstone, Optimo, K-Roc HF Series and KarrierPanel.



What is an EPD? An Environmental Product Declaration (EPD) is

affects the environment.

What is an LCA?

Life-cycle assessment (LCA, also known as life-cycle analysis and cradle-to-grave analysis) is a technique to assess environmental impacts associated with all the stages of a product's life from raw material extraction through materials processing, manufacture, distribution, use, repair and maintenance, and disposal or recycling.

what's the relationship between an LCA and an EPD?

An Environmental Product
Declaration (EPD) is a summary
of the data collected in the Life
Cycle Assessment (LCA).

Does Kingspan have EPDs?

Yes, Kingspan Insulated Panels
North America created the first
of its kind cradle-to-grave ISOcompliant EPD in September of 2011
for a select range of our products.
Since that time Kingspan has
issued multiple revisions
to document our
journey of continues
improvement

What's the purpose of an EPD?

An EPD tells the life cycle story of a product in a single, written report, focusing on information about a product's environmental impacts, such as global warming potential, smog creation, ozone depletion, and water pollution. An EPD can also include other product impacts such as land use changes, potential toxicity risks, as well as corporate environmental initiatives that are of particular interest to the discloser.

Is an EPD a rating?

No, EPDs do not rank products, and
the existence of an EPD for a product does
not indicate that environmental performance criteria
have been met. EPDs are simply a disclosure tool that helps
purchasers better understand a product's sustainable qualities and
environmental repercussions so they can make more informed
product selections.

Kingspan has EPDs which are third-party certified for KS Series, KS Granitstone, Optimo , K-Roc HF Series and KarrierPanel. These are part of our greater effort for transparency and sustainability.

VOC Testing

UL GREENGUARD Gold

Applies to all products powered by QuadCore Technology.



Why is it important?

Because it's an independent third-party certification that tells architects and building professionals that the product has been tested and certified for VOCs. It also helps provide confidence in an increasingly "green washed" marketplace.

What is GREENGUARD Gold certification?

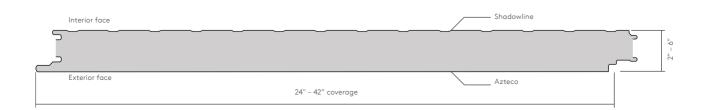
Simply put, GREENGUARD Gold
Certification ensures that a product has
met some of the world's most rigorous and
comprehensive standards for low emissions of
volatile organic compounds (VOCs) into
ndoor air. The program screens over 360
VOCs and total chemical emissions
plus ensures compliance with
California's CDPH Standard

Does Kingspan have GREENGUARD Gold?

Yes, Kingspan is the only metal panel manufacturer in North America to deliver GREENGUARD Gold Certified products. We have GREENGUARD Gold Certification across all current QuadCore® product sets.

Kingspan has always believed in leading the industry in innovation and third-party certification. Pursuing the GREENGUARD Gold stamp has been an initiative to show that we can provide products that are good for not just the built environment, but also the human environment.

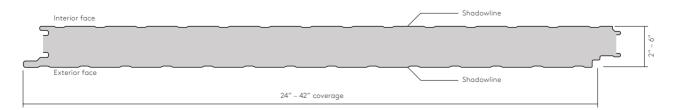




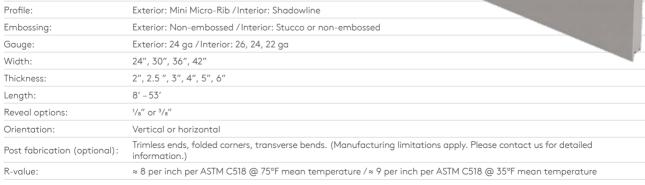
 \approx 8 per inch per ASTM C518 @ 75°F mean temperature / \approx 9 per inch per ASTM C518 @ 35°F mean temperature

R-value:











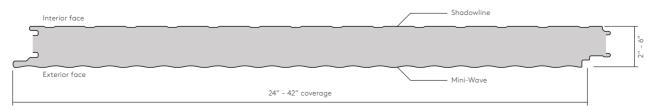




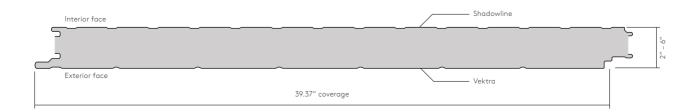
pprox 8 per inch per ASTM C518 @ 75°F mean temperature / pprox 9 per inch per ASTM C518 @ 35°F mean temperature

R-value:

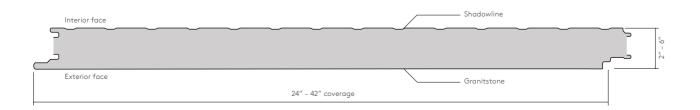




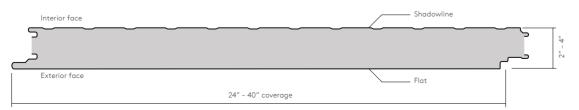












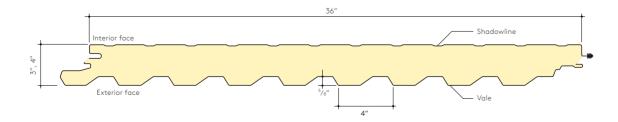
Vale™

The Vale $^{\text{m}}$ wall system delivers a $^5/8''$ deep ribbed profile for wall applications. The asymmetrical profile is designed for horizontal or vertical application.

Vale is suitable for new and retrofit applications across the commercial and industrial market sectors.

Insulation Core:	PIR
Profile:	Exterior: Vale / Interior: Flat
Embossing:	Exterior: Stucco or non-embossed / Interior: Non-embossed
Gauge:	Exterior: 22 ga / Interior: 24, 22 ga
Width:	36"
Thickness:	3", 4"
Length:	2' -24'
Reveal options:	N/A
Orientation:	Vertical or horizontal
Post fabrication:	Ends caps, transverse bends, (Manufacturina limitations apply, Please contact us for detailed information.)

				al Performance ean temperature	
R-value:	Thickness	R-Value	Thickness	R-Value	
	3"	16	3"	17	
	4"	22	4"	24	





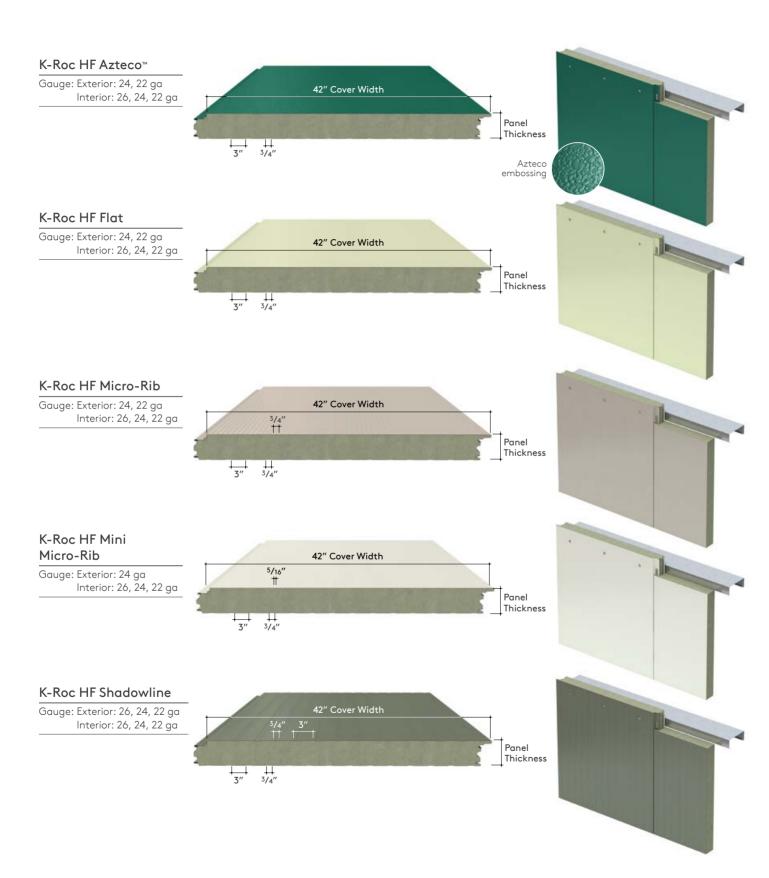




For superior fire protection K-Roc HF Series panels are an excellent choice. The 42" cover width of K-Roc HF allows for fast, easy installation.

Note: In certain light duty structures, unique hidden fastener details may be available depending on spans, structural loads and climatic conditions (please contact Kingspan Technical Services for detailed advice prior to specification or bid).

Insulation Core:	Mineral fiber		
Profile:	Exterior: Azteco™, Flat, Micro-Rib, Mini Micro-Rib, Shadowline Interior: Shadowline		
Embossing:	Exterior: Stucco or non-embossed (Azteco™ profile only available with Azteco™ embossing) Interior: Stucco or non-embossed		
Gauge:	See individual panels		
Width:	42"		
Thickness:	4", 6", 8"		
Length:	8' - 48'		
Reveal options:	1/8"		
Orientation:	Walls: Vertical or horizontal Ceilings		
Post fabrication:	N/A		
R-value:	4.0 per inch per ASTM C518 @ 75°F mean temperature		

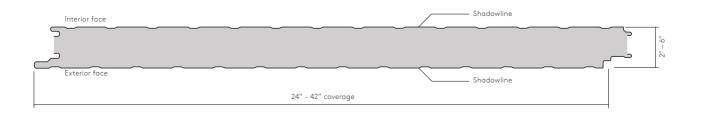




KarrierPanel® is a cost effective universal barrier wall alternative solution to traditional multi-component wall systems.

Comprising of a KS Series panel and integrated rail, KarrierPanel® is the ideal barrier wall to support secondary non-combustible rainscreen systems such as brick or metal façades.

Insulation Core:	QuadCore® Technology		
Profile:	Exterior: Shadowline, Flat / Interior: Shadowline		
Embossing:	Exterior: Stucco or non-embossed /Interior: Stucco or non-embossed		
Gauge:	Exterior: 26, 24, 22 ga / Interior: 26, 24, 22 ga		
Width:	24", 30", 36", 40", 42"		
Thickness:	2", 2.5", 3", 4", 5", 6"		
Length:	8' - 53'		
Reveal options:	³/ø" to accommodate rail		
Orientation:	Vertical or horizontal		
Post fabrication:	N/A		
R-value:	≈ 8 per inch per ASTM C518 @ 75°F mean temperature /≈ 9 per inch per ASTM C518 @ 35°F mean temperature		







Design Flexibility

KarrierPanel® can support a range of rainscreen finishes to compliment any architectural scheme.









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 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, 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 G90 galvanized, 50 KSI steel. Available in various lengths with a 1, 2 and 3 inch bearing surface.

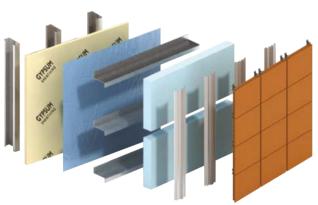


Benefits of the KarrierPanel® Wall System Vs Traditional Built-up Construction:

- The single component KarrierPanel® wall system 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.

Build Speed

KarrierPanel® as a single component system increases speed of build, minimizes delays and the need for multiple trades.



Typical multi-part façade system

- Faster close-in and dry-in for reduced building costs.
- The single component 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.



KarrierPanel® System with Metal Single Skin Rainscreen



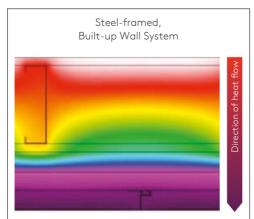
Scan this to watch a time lapse installation comparison video

See how much time the KarrierPanel system can save.

Thermal Performance

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

Vs

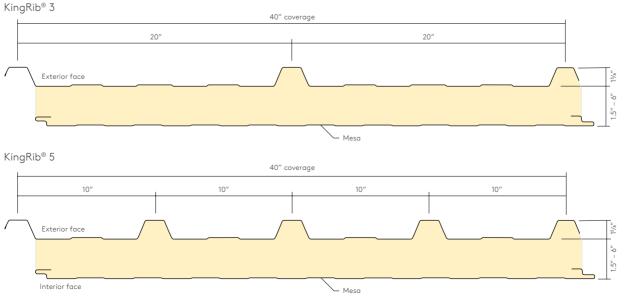


Vs



KingRib® 3 / KingRib® 5



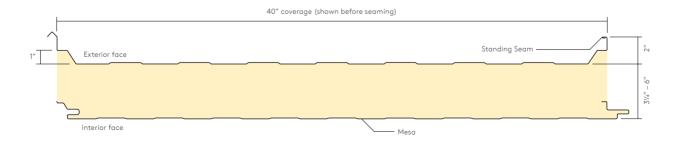


KingSeam®

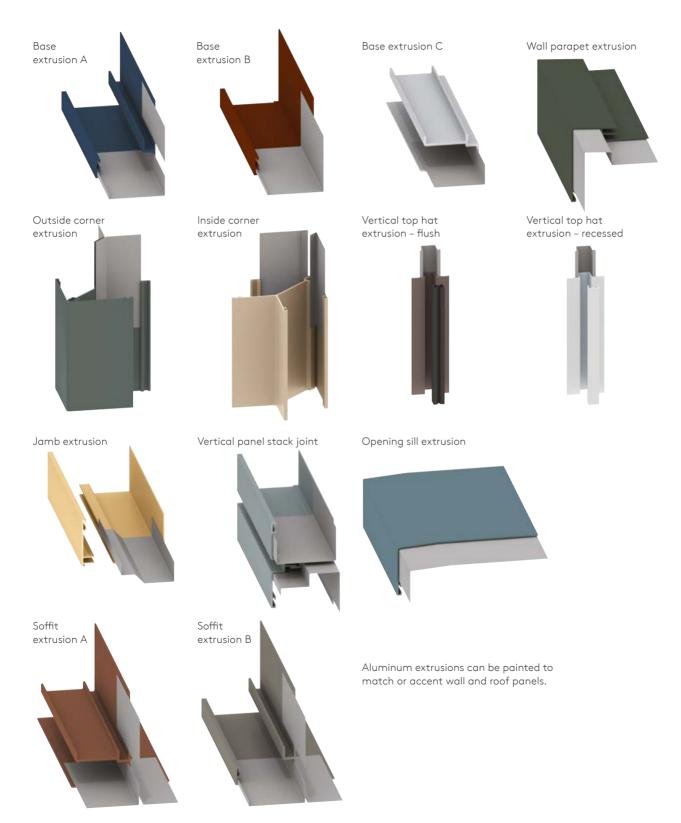
KingSeam® insulated standing seam roof panels are designed to offer design flexibility and aesthetics combined with high R-values and unparalleled service life performance. Ideal for new and retrofit applications across a wide variaety of building sectors.



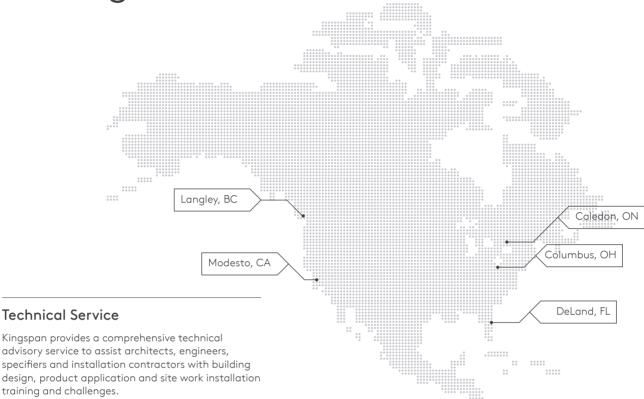
Profile:	Exterior: Mesa with Trapezoidal Ribs / Interior: Mesa
Embossing:	Exterior: Non-embossed / Interior: Stucco or non-embossed
Gauge:	Exterior: 26 ga Standard (24, 22 ga optional) /Interior: 26 ga Standard (24, 22 ga optional)
Width:	40"
Thickness:	3.25", 4", 5", 6"
Length:	8′ –50′ (please contact your Kingspan Regional Sales Manager or Kingspan Technical Services for detailed limitations on specific lengths)
Post fabrication (optional):	Cutbacks
R-value:	pprox 7.1 per inch per ASTM C518 @ 75°F mean temperature / $pprox$ 8.1 per inch per ASTM C518 @ 35°F mean temperature



Aluminum Extrusions



Testing and Services



Energy Service

Kingspan offers a performance energy modelling service on select projects to help design teams understand scenarios contributing to optimizing the energy efficiency of insulated metal panel assemblies based on meeting or exceeding ASHRAE 90.1 requirements.

Customer Service

Our dedicated team provides focused customer service for all pre and post-order administration, delivery scheduling, and installer support, ensuring a seamless coordinated customer experience.

Marketing Support

Our marketing team aims to provide a fast turnaround on standard sample and literature requests, eliminating delays with planning and client approval of material, so that your project begins on time.

Additional marketing support is provided through the use of project case studies.

Field Service Support

Kingspan's Field Service Engineering Team offer customers free contractor training on the installation of new and existing products, site inspection services as well as advice on mechanical handling solutions.

Sales Team

Our regionally based sales team can provide assistance on any project from the design stage through to site installation.

Find your local sales rep on our website www.kingspanpanels.com

Email Us

Technical services: technical.NA@kingspanpanels.com Installation seminars: installation@kingspanpanels.com samples.NA@kingspan.com

Follow Kingspan on:











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

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.

Flurothane Coastal PVDF Colors

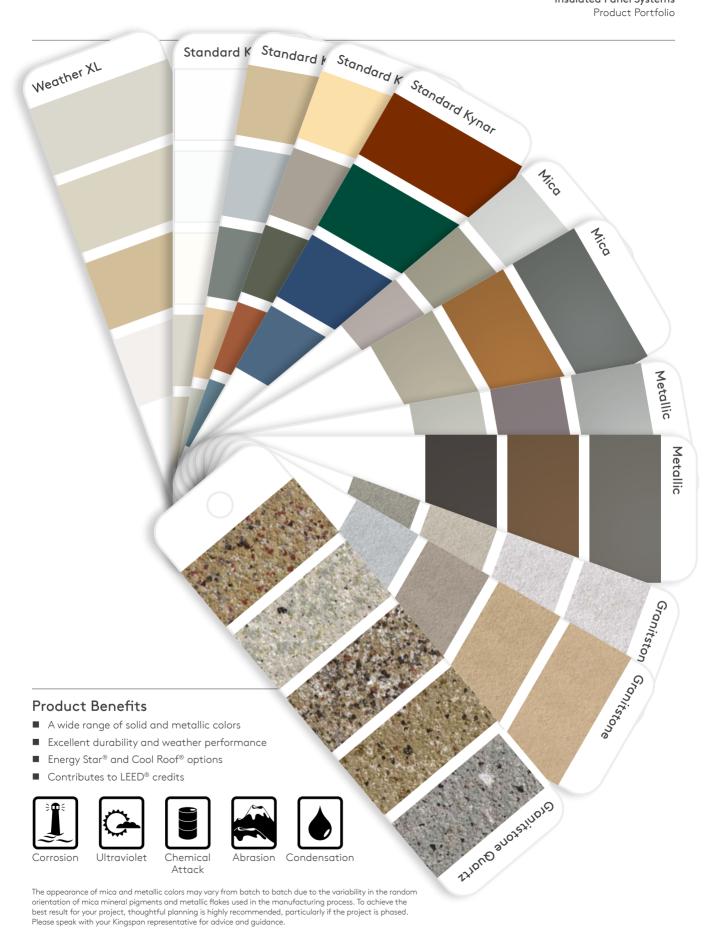
This is a premium Fluoropolymer (PVDF) system developed for use in the most extreme coastal environments (less than 1500 feet from the coastline). The unique aspect about this system is the innovative thick film primer. This is field-proven and provides a high performance exterior finish delivering outstanding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

Warranties

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

- *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.





Projects









Projects





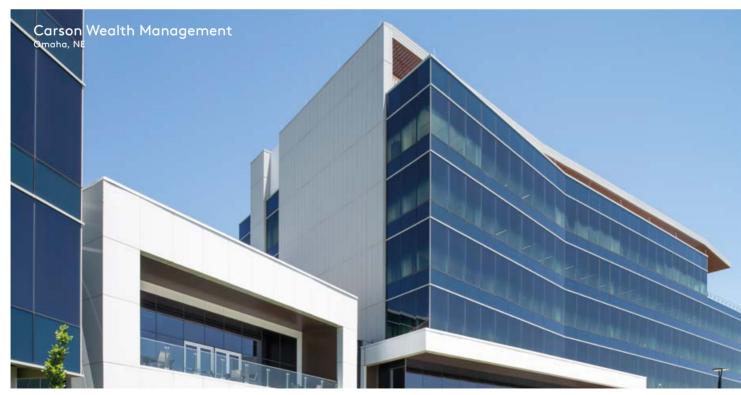


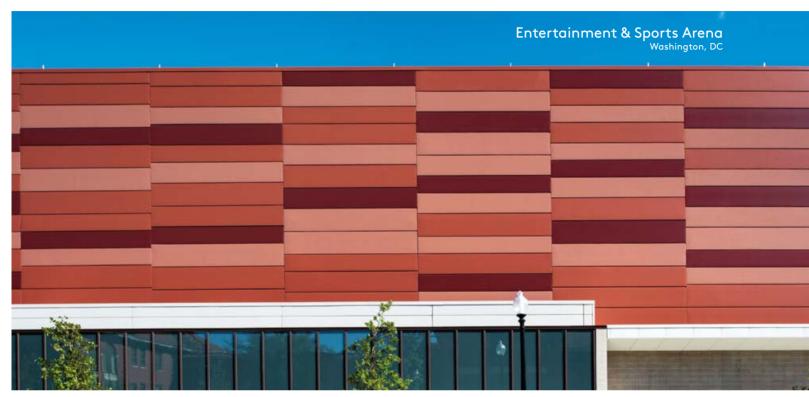




Projects









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)
- Low maintenance (due to robust construction and superior weather resilience)
- Comfort (due to more natural daylight, improved temperature regulation and excellent acoustics)
- Aesthetics



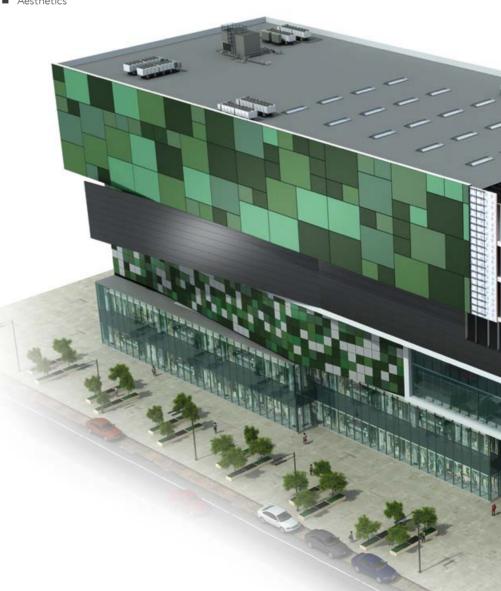
Kingspan Insulated Panels & Façades



Kingspan Insulation Boards

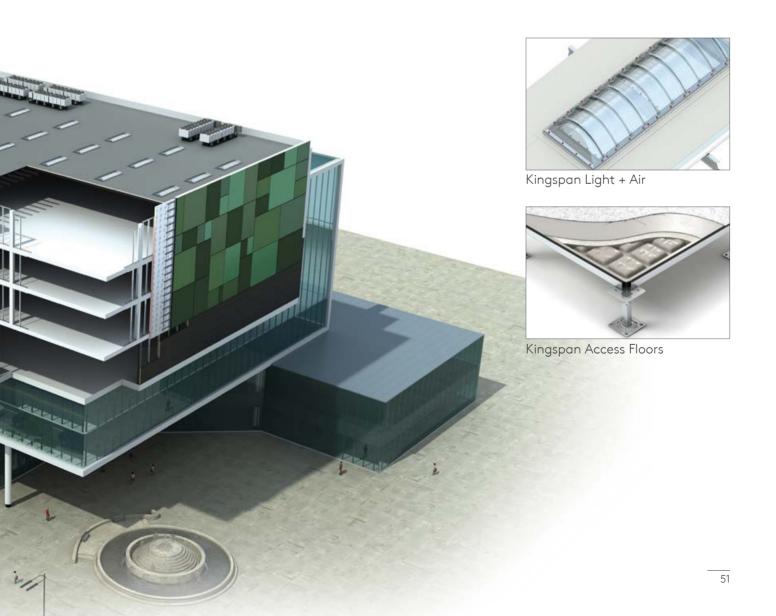


Kingspan Industrial Insulation



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



Contact Details

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

To ensure you are viewing the most recent and accurate product information, please visit www.kingspanpanels.us or www.kingspanpanels.ca.

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