

Architectural Insulated
Metal Panel Systems
North America

Product Portfolio

Systems and Solutions Guide

Architectural Wall Panels



BENCHMARK™

**MIZZOU
FOOTBALL**

University of Missouri
Stephens Indoor Facility
Columbus, MO

Product: Designwall 2000
Architect: HOK

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Kingspan

Make Your Mark
Your Global Partner
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Scan here for the most
up to date version of
this brochure

"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.

On the Cover: Gilbert Place at Virginia Tech Blacksburg, VA
Products: QuadCore® KarrierPanel®, QuadCore® Designwall 4000, Designwall 2000
Architect: Hanbury Architects



MAKE YOUR MARK

Kingspan BENCHMARK architectural wall panels are the premier choice for architects looking for insulated panels and facades.

Make your Mark with tailor-made, one-of-a-kind façade architectural wall designs in a variety of custom finishes and sizes and an extended color range. Striking aesthetics and design flexibility combined with advanced thermal performance and energy efficiency, Kingspan BENCHMARK architectural wall systems are your next building solution.

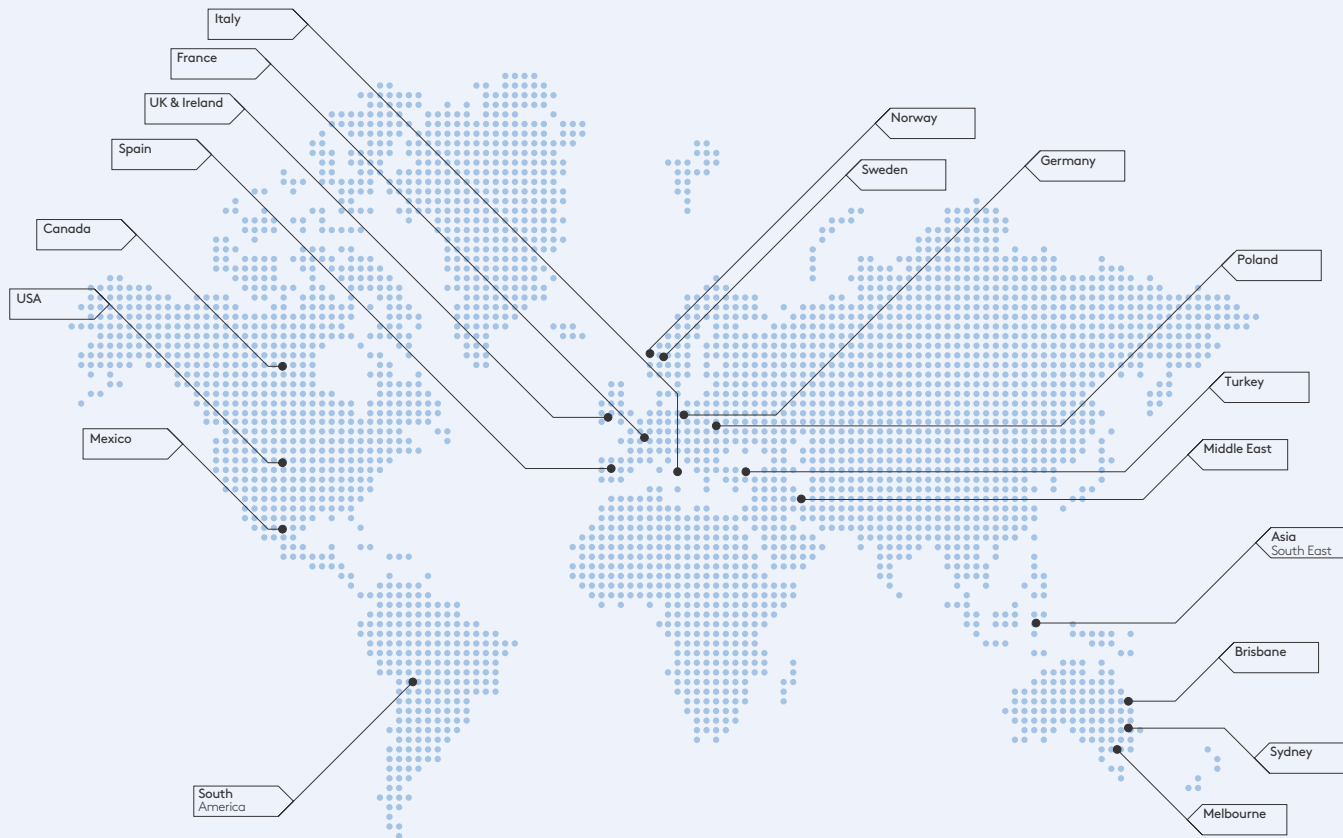
SFO Consolidated
Administration Office
San Francisco, CA



Explore more
Creative Freedom to
Make Your Mark

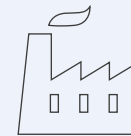
Your Global Partner

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



80+
countries

212+
manufacturing
sites worldwide



22,000+
employees
worldwide



Planet Passionate

Planet Passionate is Kingspan's ambitious 10-year global sustainability programme that aims to impact three big global issues:

- **Climate change**
- **Circularity**
- **Protection of our natural world**

By setting ourselves challenging targets in the areas of energy, carbon, circularity and water, we aim to make significant advances in the sustainability of both our business operations and our products.

By being Planet Passionate in our operations we aim to:



Contribute to the world's renewable energy mix



Accelerate the shift to zero emission cars and reduce air pollution



Divert waste from landfill and keep materials in the economy



Reduce carbon emissions (including in our value chain)



Provide upcycling solutions for consumer plastic waste



Conserve precious water



Help to clean our oceans and protect wildlife

By being Planet Passionate our products will be:



Manufactured using **renewable energy** and harvested rainwater



Manufactured in **zero waste** facilities



Packaged in **recyclable** materials



Lower in **embodied carbon**



Containing **recycled materials** and recycled production waste



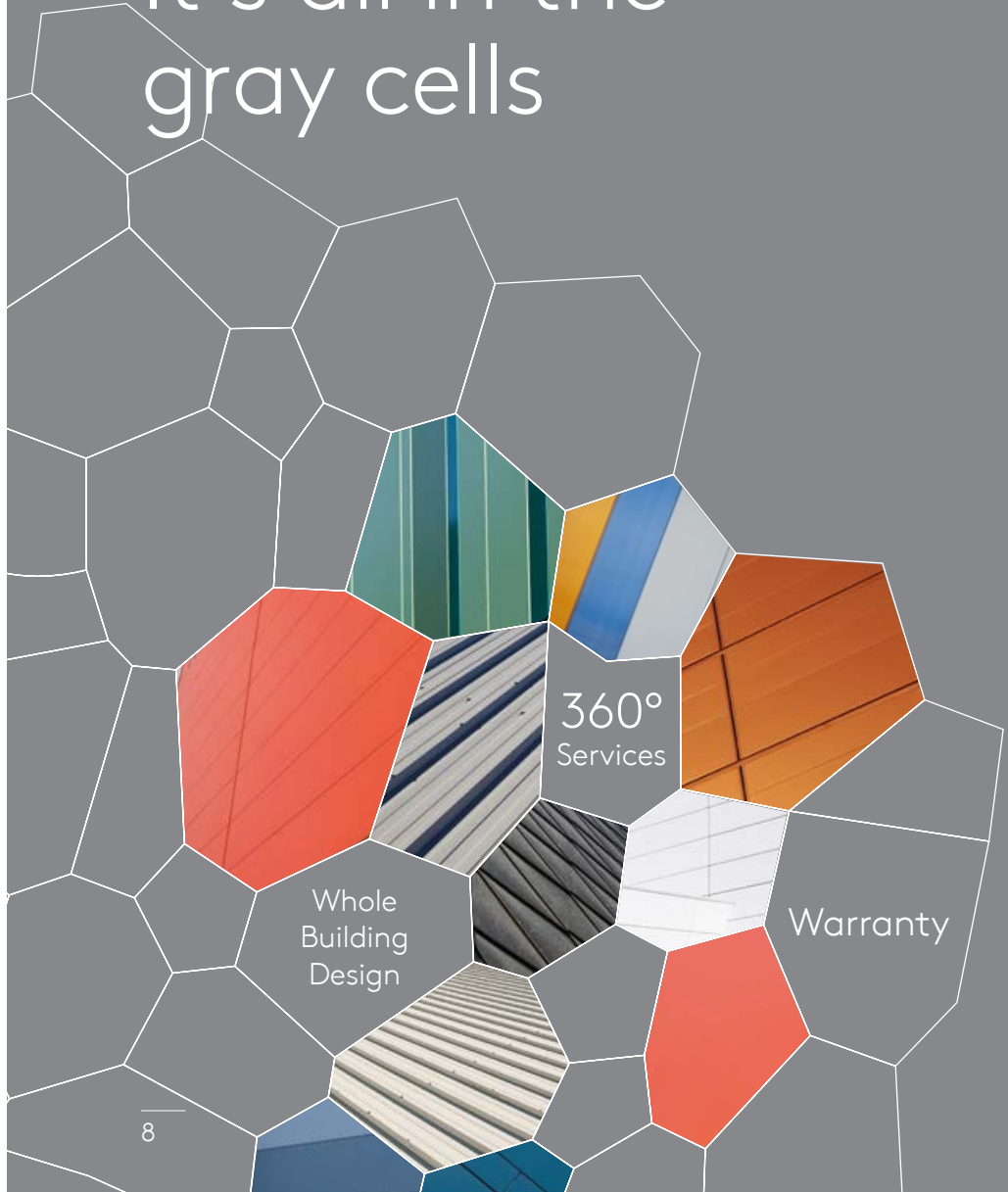
Our new Sustainability Resource Center addresses sustainability in the building products industry, helping to educate industry professionals including architects, specifiers, general contractors and owners. The Sustainability Resource Center offers a range of resources developed by industry experts that address four leading environmental concerns: carbon, energy, circularity and water.



Learn More

Higher Building Performance with Kingspan

It's all in the gray cells



QuadCore® for Designwall 4000 and KarrierPanel

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.

POWERED BY
QuadCore®
TECHNOLOGY

1

Exceptional Thermal Efficiency

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

2

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 cost-effective 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

- GREENGUARD Gold certified



SCS Certified EPD
Applies to Designwall 4000.

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.



QuadCore® B for Designwall 2000 and Designwall R-Series panels

In addition to legendary QuadCore® Technology, Kingspan now offers QuadCore® B for a selection of Designwall products. The proprietary formulation of QuadCore® B delivers 10% better R-values than our PIR-based Designwall range, and complex architectural applications for customization meeting intricate design requirements not possible with panels manufactured using a continuous production method.

Precured and structurally bonded, QuadCore® B panels do not carry the same features as QuadCore® Technology, while still meeting building code and industry testing requirements, and capturing your architectural vision.

Note: QuadCore® B does not carry the same attributes, properties, or health and wellness certification as QuadCore®.

Architectural Insulated Metal Panel Systems

Commercial & Offices

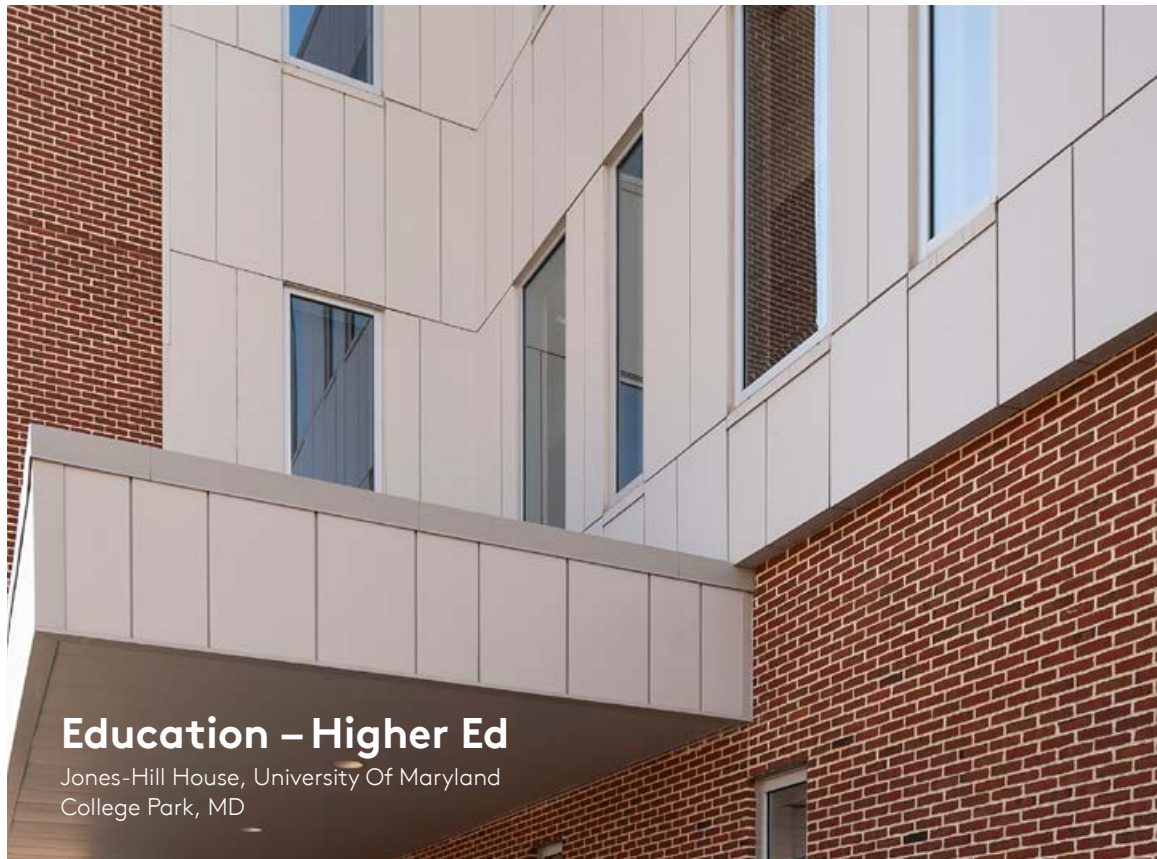
CODE Building, Charlottesville, VA

Distribution Centers

E-Commerce Centre, Tracy, CA

Community and Heritage

The Gathering Church, St. Louis, MO



Education – Higher Ed

Jones-Hill House, University Of Maryland
College Park, MD



Education – K-12

Mandeville High School, Mandeville, LA



Product Portfolio

Healthcare

Muscogee (Creek) Nation
Community Hospital, Okemah, OK

Architectural Insulated Metal Panel Systems

Infrastructure & Airports

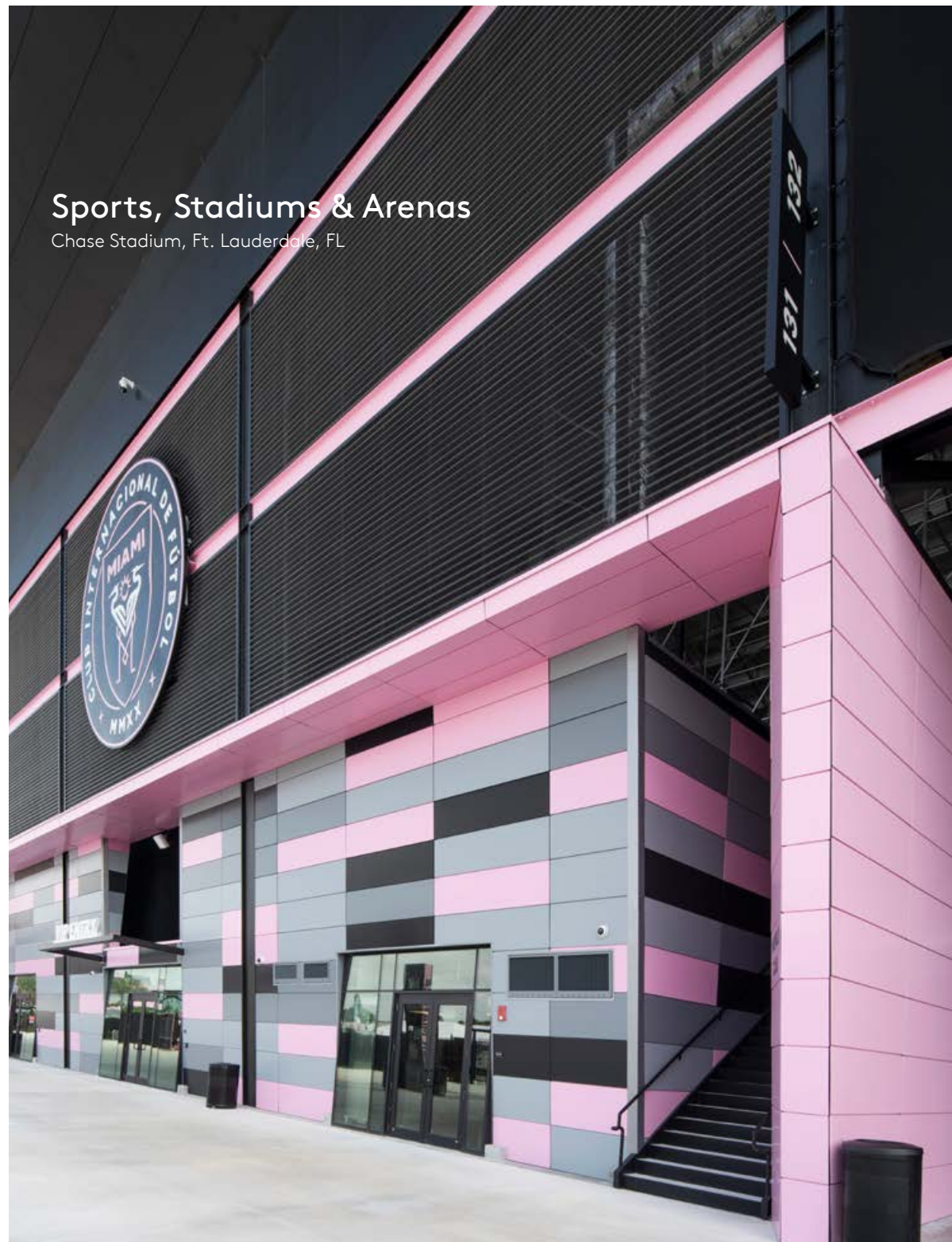
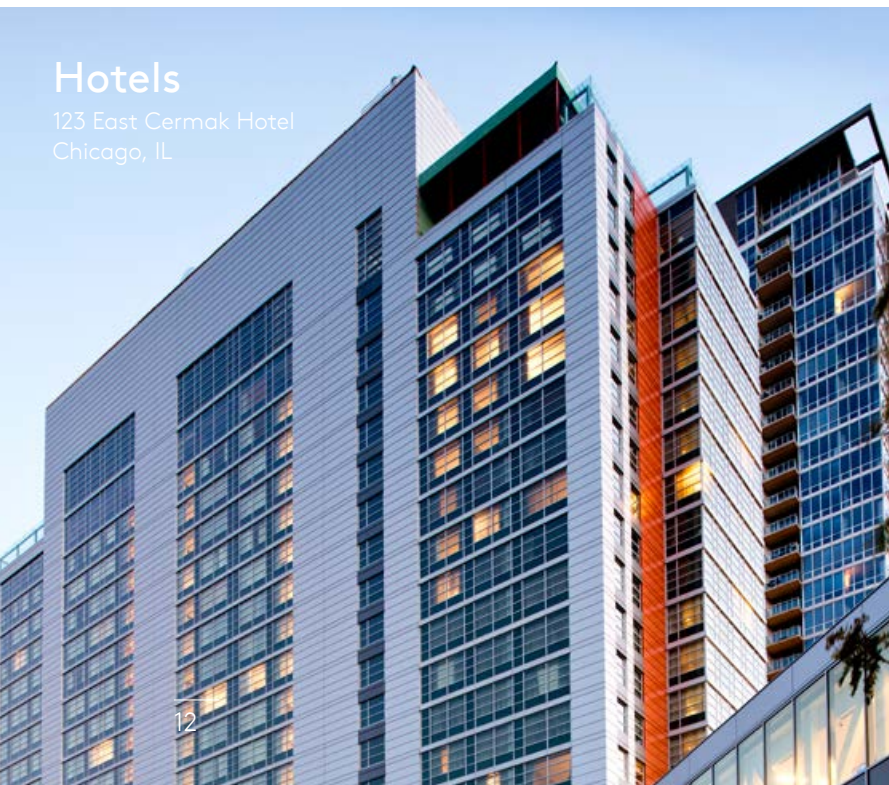
SFO Consolidated Administration Office
San Francisco, CA

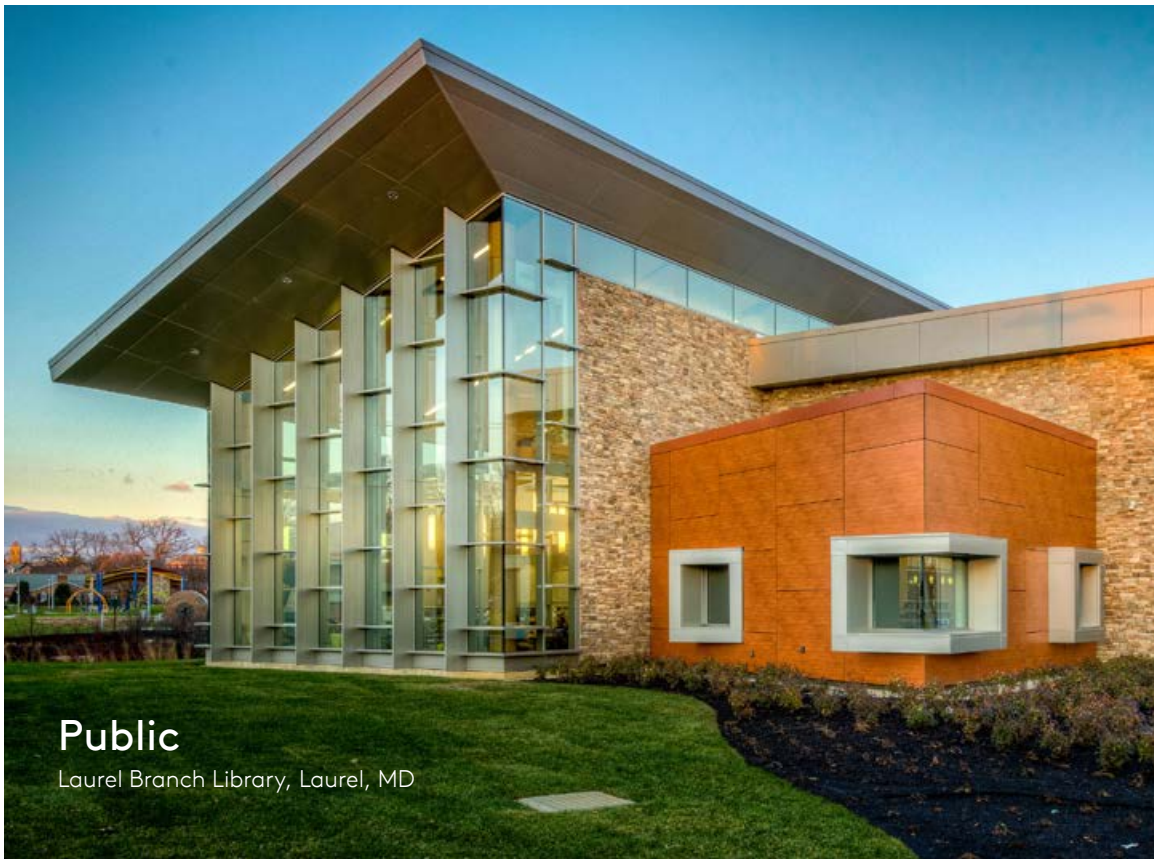
Hotels

123 East Cermak Hotel
Chicago, IL

Sports, Stadiums & Arenas

Chase Stadium, Ft. Lauderdale, FL





Public

Laurel Branch Library, Laurel, MD



Retail

100 West 125th Street, Brooklyn, NY



Product Portfolio

Multi-Family

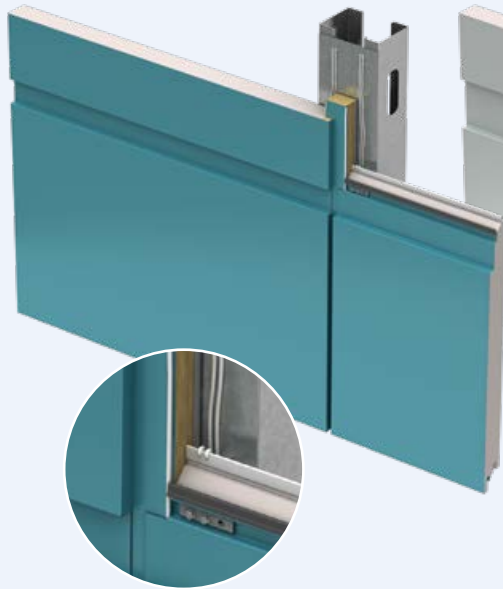
808 Memorial Drive Apartments, Cambridge, MA



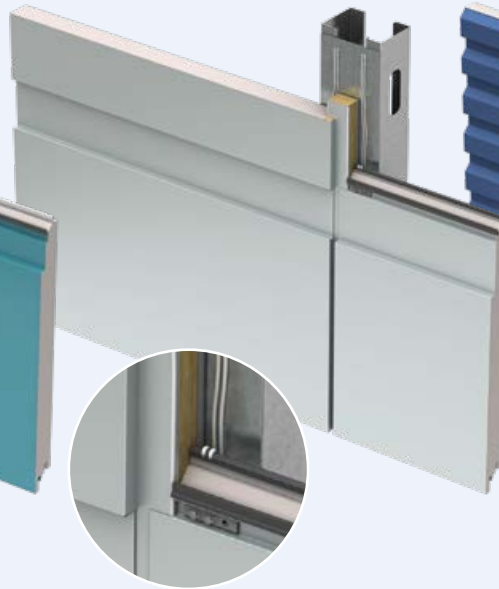
Please scan here
for more project
inspiration

Products at a Glance

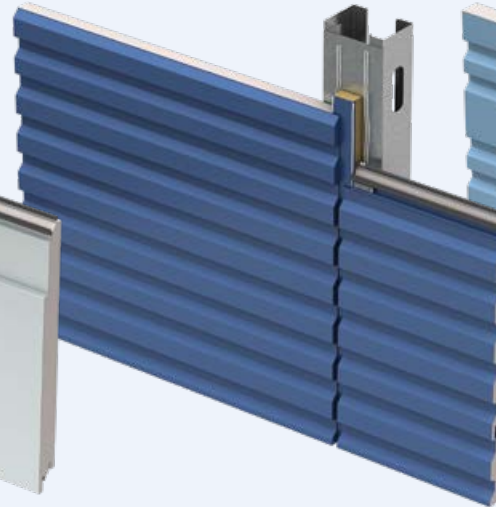
QuadCore® Designwall 4000



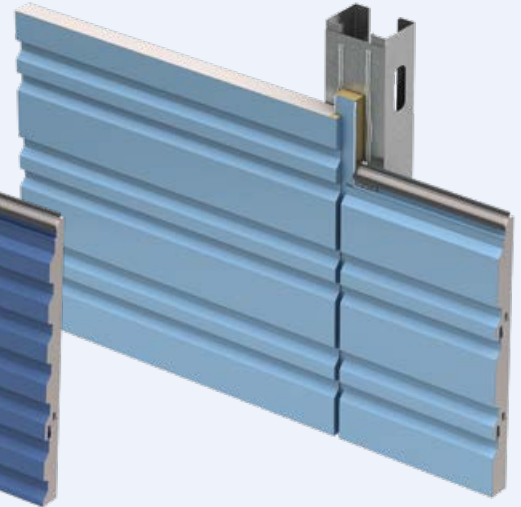
QuadCore® B Designwall 2000



QuadCore® B Designwall 2000R

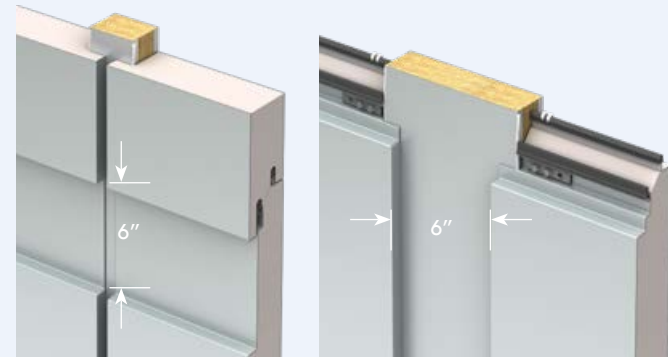


QuadCore® B Designwall 2000R-459



Variable Reveals

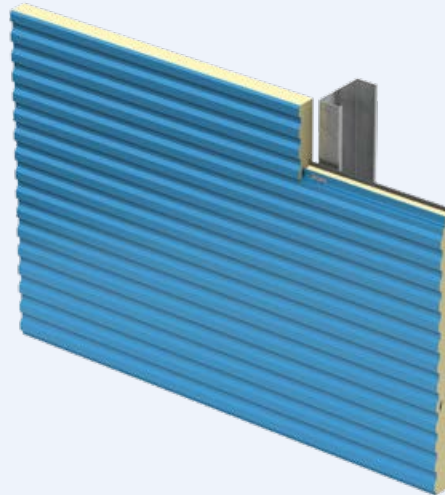
- Various reveal heights are available for a custom linear appearance.
- Reveal height range : 1/16", 1/2", 1", 2", 3", 4", 5" and 6" dependent on panel selection.



Interchangeable Panel Options

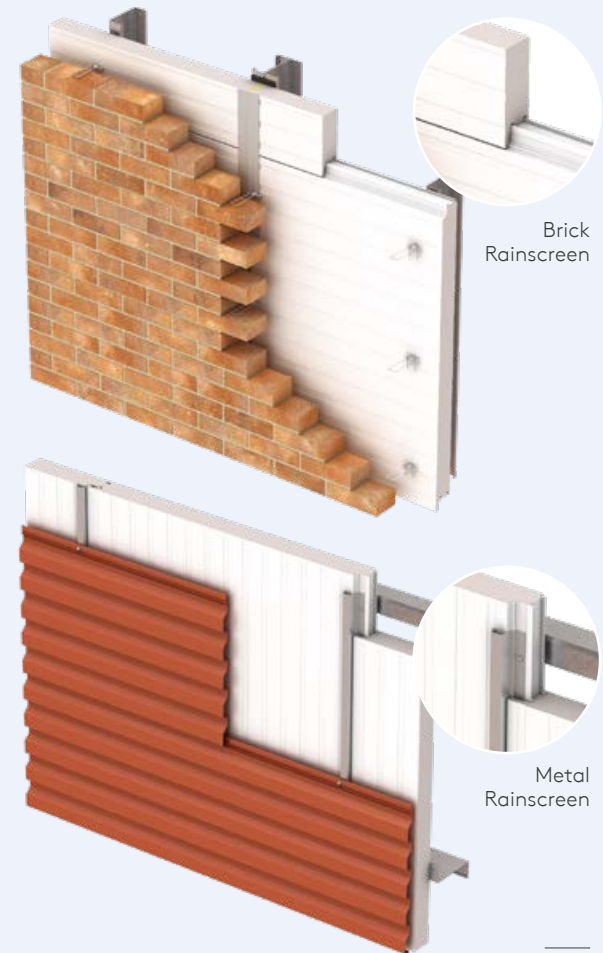


Vale™



Learn More

QuadCore® KarrierPanel® (universal barrier wall solution)



Brick
Rainscreen

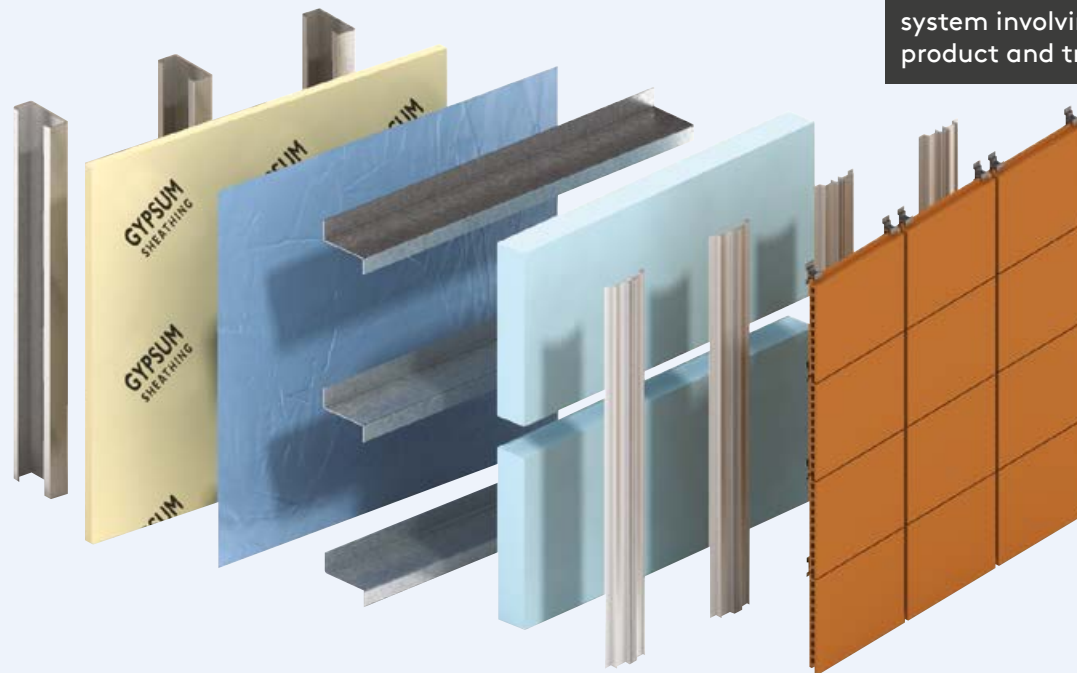
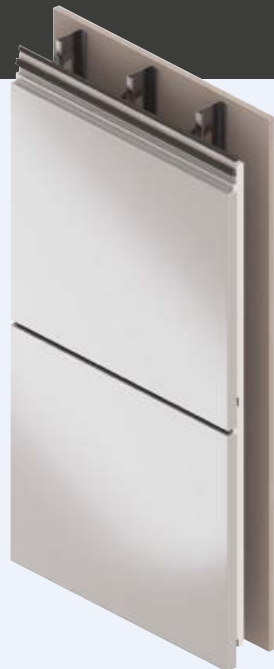
Metal
Rainscreen

Performance Benefits

Build Speed

Wall Assembly Installation

Water, air, vapor and thermal control layers all in one system creating the ideal barrier wall installed efficiently by one contractor



Standard built up wall system involving multiple product and trades to install

Wall Assembly with Interior Finish	Number of Components
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

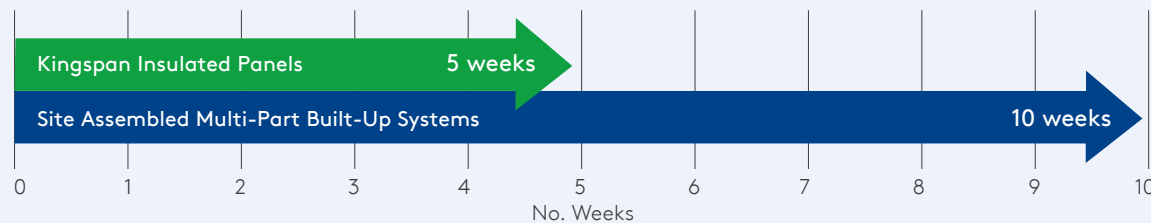
Case Study

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



Area – 100,000ft²

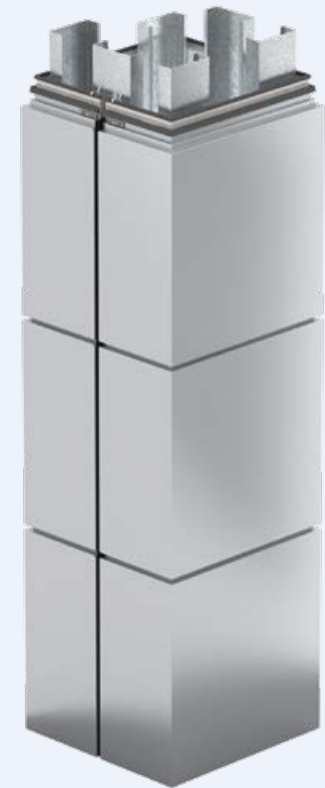


Design Flexibility and Aesthetic Appeal

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

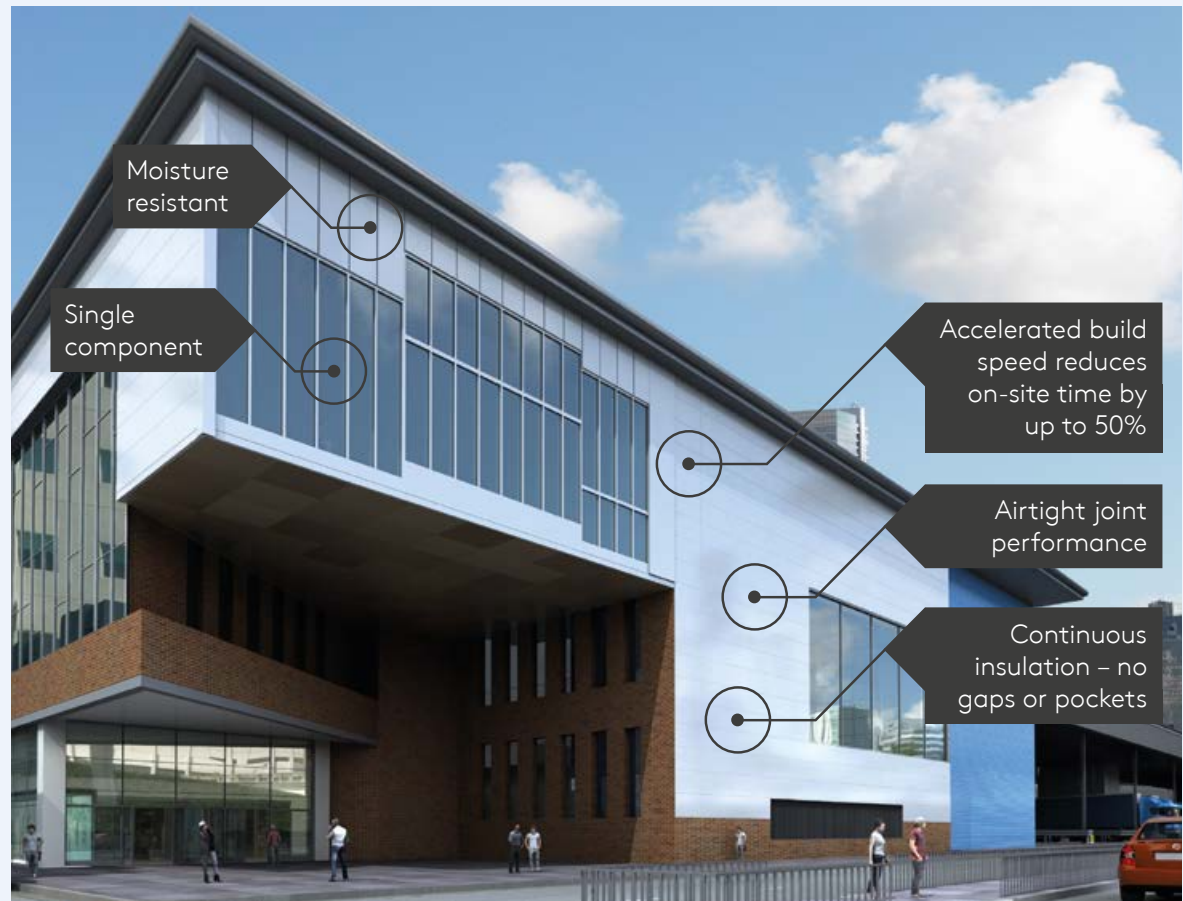
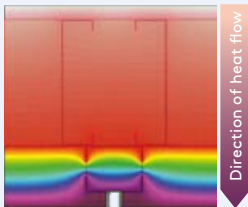
Kingspan insulated panels' insulating cores provide superior thermal performance with tested R-values of 7.2* per inch. Most importantly, the insulation is on the exterior of the building structure to provide the best possible thermal envelope by reducing thermal bridging typical of cavity wall systems. 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.

Designwall vertical joint
block spline





Architectural Insulated Metal Panel Systems



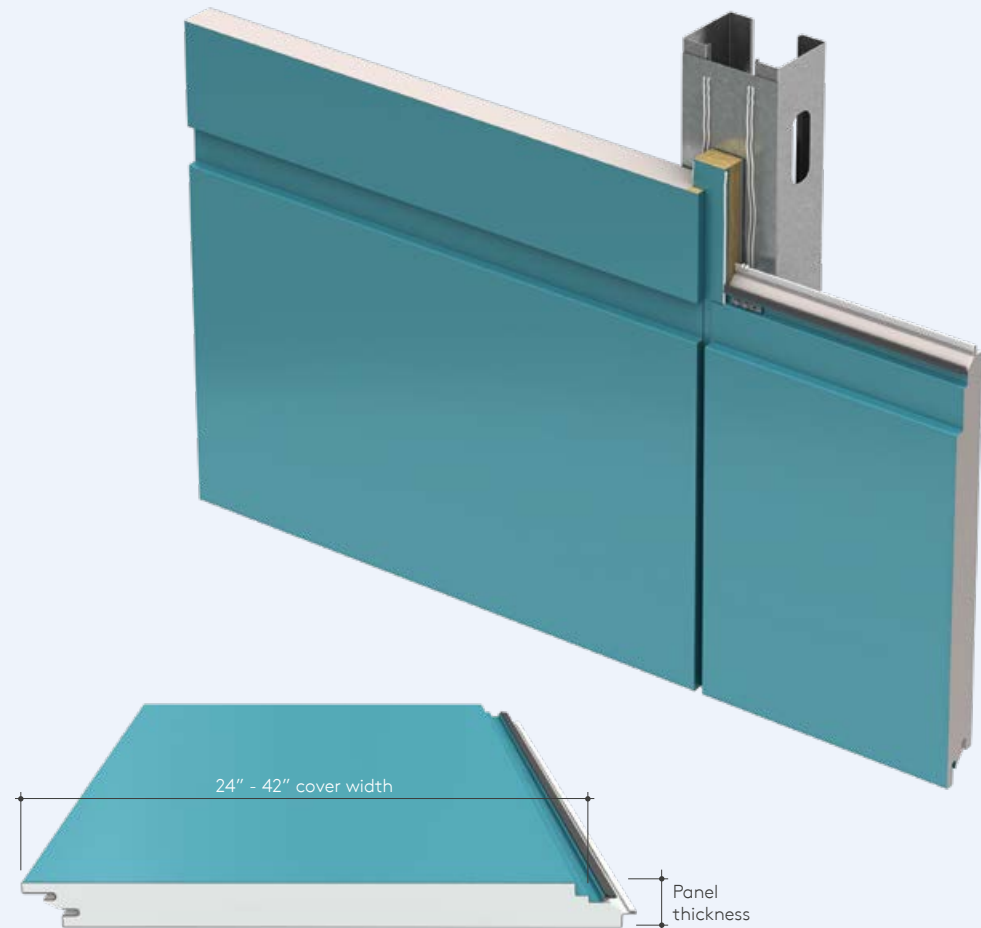
QuadCore®
Designwall 4000



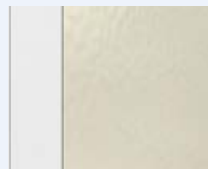
QuadCore® Designwall 4000 is the go-to choice for large scale projects. Available in either embossed or non-embossed, Designwall 4000 is uniquely equipped for finest design ingenuity.

Product Specifications

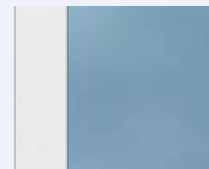
Insulation Core	QuadCore® Technology
Profile	Exterior: Flat Interior: Flat
Embossing	Exterior: Stucco or non-embossed Interior: Stucco or non-embossed
Gauge	Exterior: 22, 20 ga Interior: 24, 22 ga
Width	24" - 42" (1/2" increments)
Thickness	2", 2.5", 3", 4"
Length	2' - 24'
Reveal Options	1/8", 1/2", 1", 2", 3"
Orientation	Vertical or horizontal
Post Fabrication	Transverse bend, trimless end (manufacturing limitations apply. Please contact us for detailed information.)
R-Value	≈ 8 per inch per ASTM C518 @ 75°F ≈ 9 per inch per ASTM C518 @ 35°F
Production method	Continuous production line



Stucco embossed



Non-embossed



Architectural Insulated Metal Panel Systems



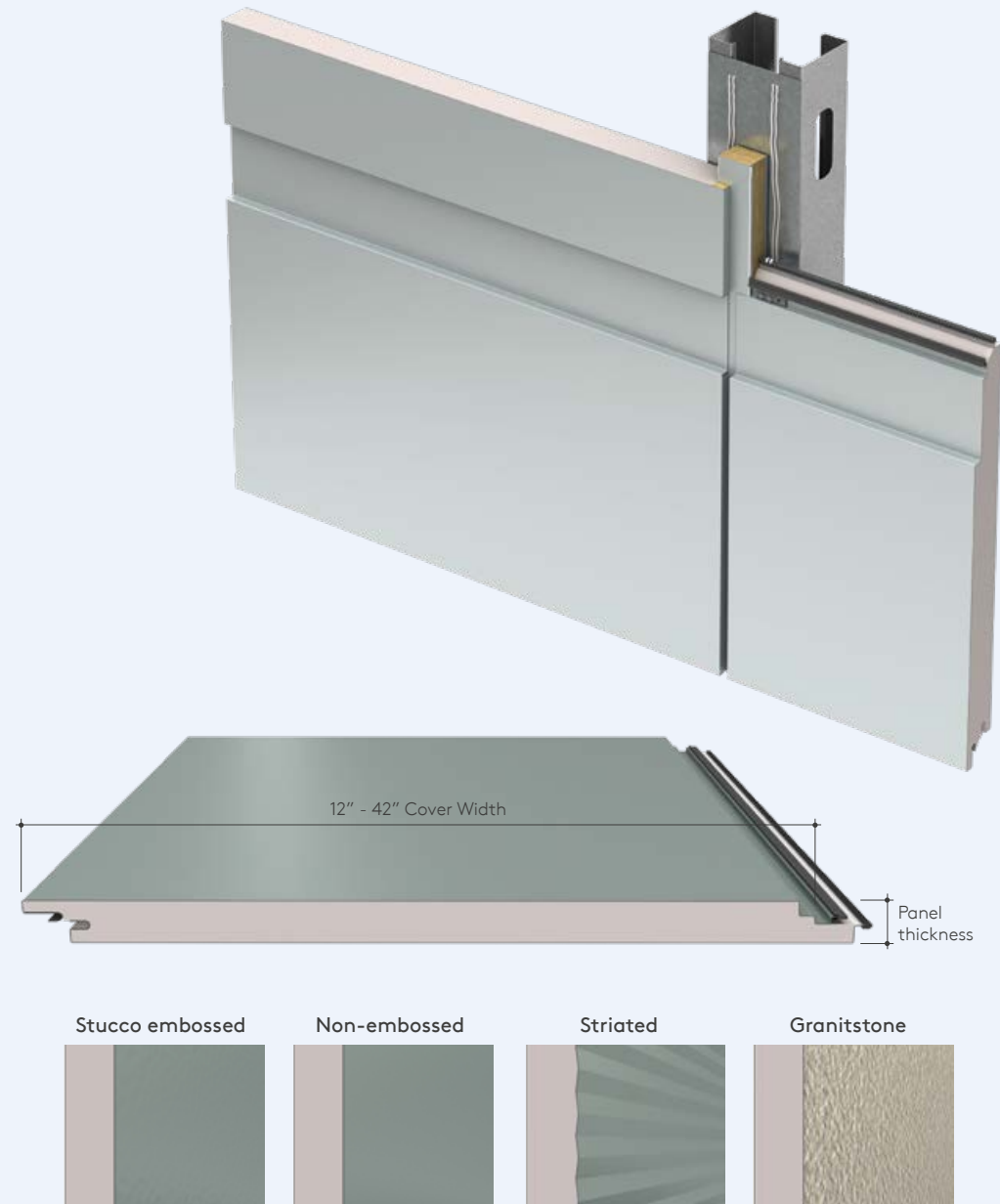
QuadCore® B
Designwall 2000



The ultimate in design flexibility, Designwall 2000 with QuadCore® B allows for complete creative freedom. With horizontal and vertical application capability, the Designwall 2000 joint provides maximum thermal efficiency while creating a double barrier against air and water penetration. Custom widths and finishes make Designwall 2000 the perfect fit for any project.

Product Specifications

Insulation Core	QuadCore® B Technology			
Profile	Exterior: Flat smooth, flat with granitstone or striated Interior: Flat smooth			
Embossing	Exterior: Stucco or non-embossed Interior: Stucco or non-embossed			
Gauge	Exterior: 22, 20 ga Interior: 24, 22, 20 ga			
Width	12" - 42" (1/8" increments)			
Thickness	2", 2.5", 3", 4"			
Length	Embossed, Striated, GS - 30' (if wider than 40", max length darker colors 10', lighter colors 14') Smooth steel - 24' (if wider than 40", max length darker colors 10', lighter colors 14')			
Reveal Options	1/16", 1/2", 1", 2", 3", 4", 5", 6"			
Orientation	Vertical or horizontal (for detailed installation conditions, please contact us for more information.)			
Post Fabrication	Longitudinal bend, transverse bend, trimless end, bevelled end, full end wrap and modified edges (manufacturing limitations apply)			
R-Value	Thermal Performance			
	at 75°F mean temperature		at 35°F mean temperature	
	Thickness	R-Value	Thickness	R-Value
	2.0"	12.8	2.0"	14.2
	2.5"	16.0	2.5"	17.8
	3.0"	19.2	3.0"	21.3
	4.0"	25.6	4.0"	28.4
Production method	Structurally bonded			



Architectural Insulated Metal Panel Systems

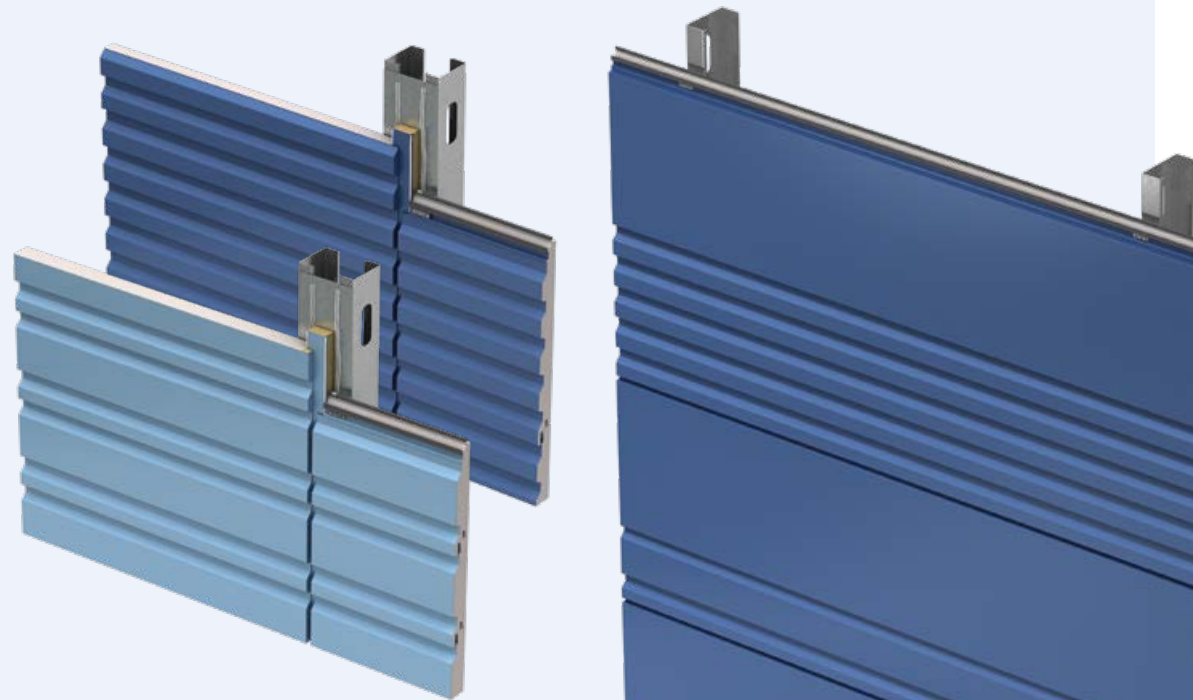
QuadCore® B Designwall R Series



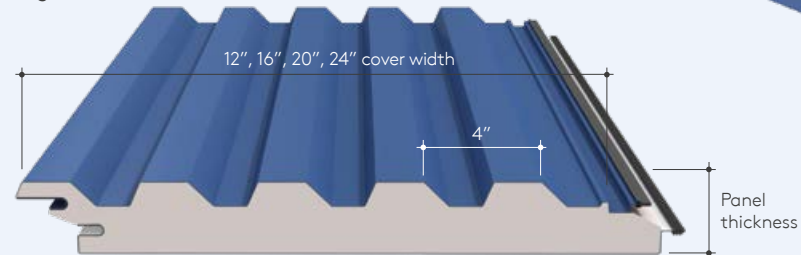
Designwall R Series powered by QuadCore® B is a profiled, accented version of Designwall 2000 with ribs at 7/8" deep. Available in two different profile spacings, this unique panel provides design options in achieving accented lines on an elevation. The R Series panels add a bold, profiled look to commercial construction. Designwall R Series directly engages with the same thickness panels of Designwall 2000 or Designwall 4000.

Product Specifications

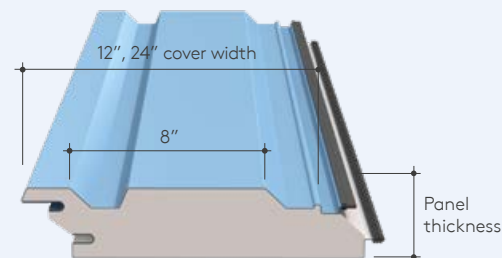
Insulation Core	QuadCore® B Technology			
Profile	Exterior: Ribbed Flat smooth Interior: Flat smooth			
Embossing	Exterior: Stucco or non-embossed Interior: Stucco or non-embossed			
Gauge	Exterior: 22 ga Interior: 24, 22 ga			
Width	2000R: 12", 16", 20", 24" 2000R-459: 12", 24"			
Thickness	2.5", 3", 4"			
Length	2' – 24'			
Reveal Options	NA			
Orientation	Vertical or horizontal			
Post Fabrication	Transverse bend, end caps (manufacturing limitations apply. Please contact us for detailed information.)			
R-Value	Thermal Performance			
	at 75°F mean temperature		at 35°F mean temperature	
	Thickness	R-Value	Thickness	R-Value
	2.5"	10.4	2.5"	11.5
	3.0"	13.6	3.0"	15.1
	4.0"	20.0	4.0"	22.2
Production method	Structurally bonded			



Designwall 2000R



Designwall 2000R-459



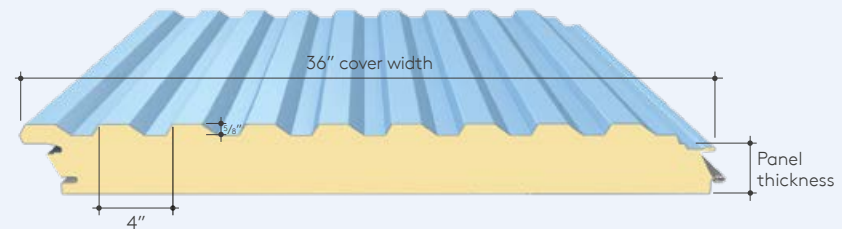
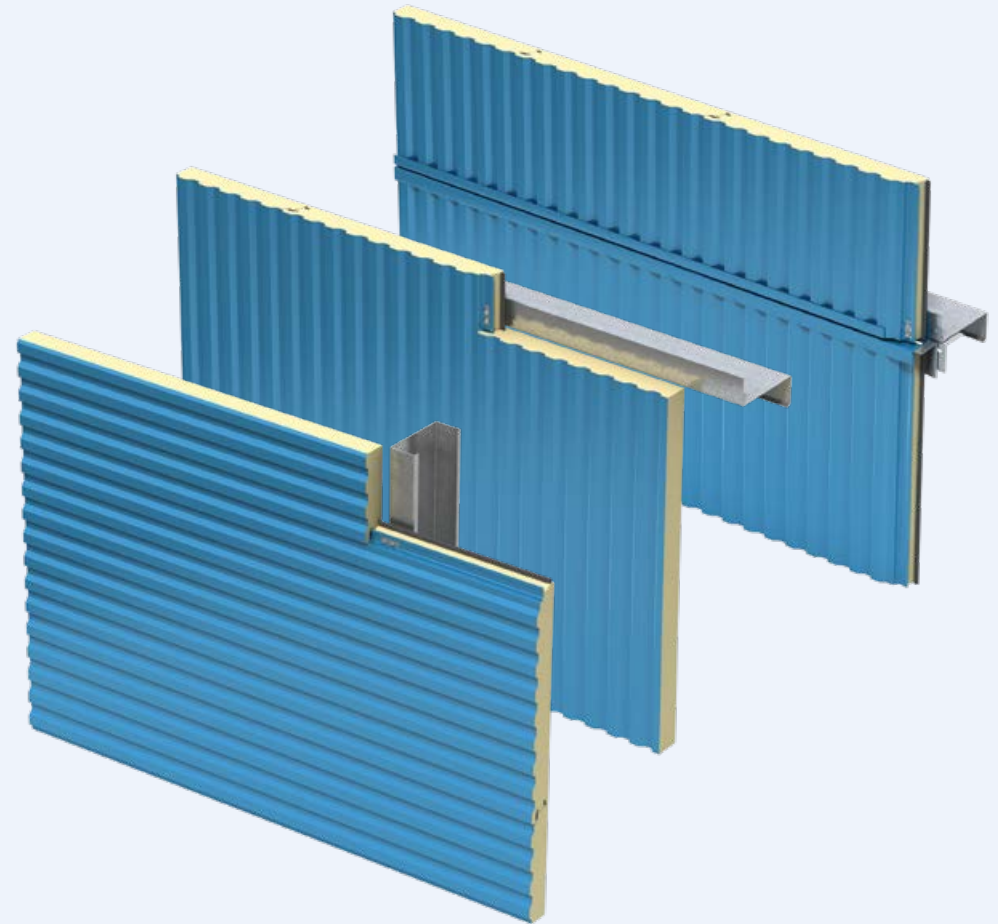
Vale™

Architectural Insulated Metal Panel

Vale 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 architectural applications across the commercial and industrial market sectors. The bold ribbed profile of the Vale panel is well-suited for architectural accents of an elevation, but it can equally be applied to entire wall sections of a design. Vale also features a unique panel joinery.

Product Specifications

Insulation Core	PIR																				
Production method	Discontinuous foam-in-place																				
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	Transverse bent corners																				
R-value	<table><tr><th colspan="4">Thermal Performance</th></tr><tr><th colspan="2">at 75°F mean temperature</th><th colspan="2">at 35°F mean temperature</th></tr><tr><th>Thickness</th><th>R-Value</th><th>Thickness</th><th>R-Value</th></tr><tr><td>3.0"</td><td>16</td><td>3.0"</td><td>17</td></tr><tr><td>4.0"</td><td>22</td><td>4.0"</td><td>24</td></tr></table>	Thermal Performance				at 75°F mean temperature		at 35°F mean temperature		Thickness	R-Value	Thickness	R-Value	3.0"	16	3.0"	17	4.0"	22	4.0"	24
Thermal Performance																					
at 75°F mean temperature		at 35°F mean temperature																			
Thickness	R-Value	Thickness	R-Value																		
3.0"	16	3.0"	17																		
4.0"	22	4.0"	24																		



Virginia Tech

Gilbert Place Blacksburg, VA



Custom Panel Applications

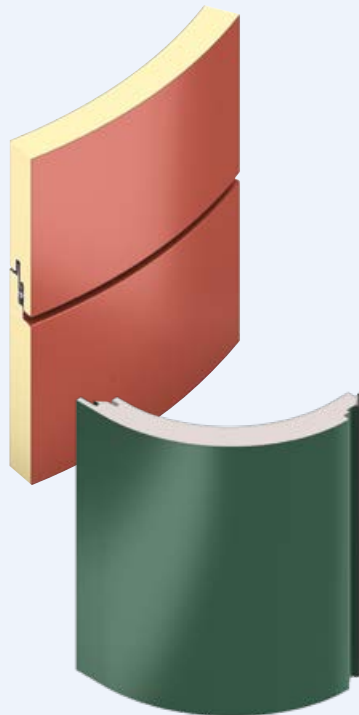
Pre-Formed Corners

- No on-site fabrication
- Radius corners
- Trimless corners
- Preformed corners
- Multiple bends



Radius Options

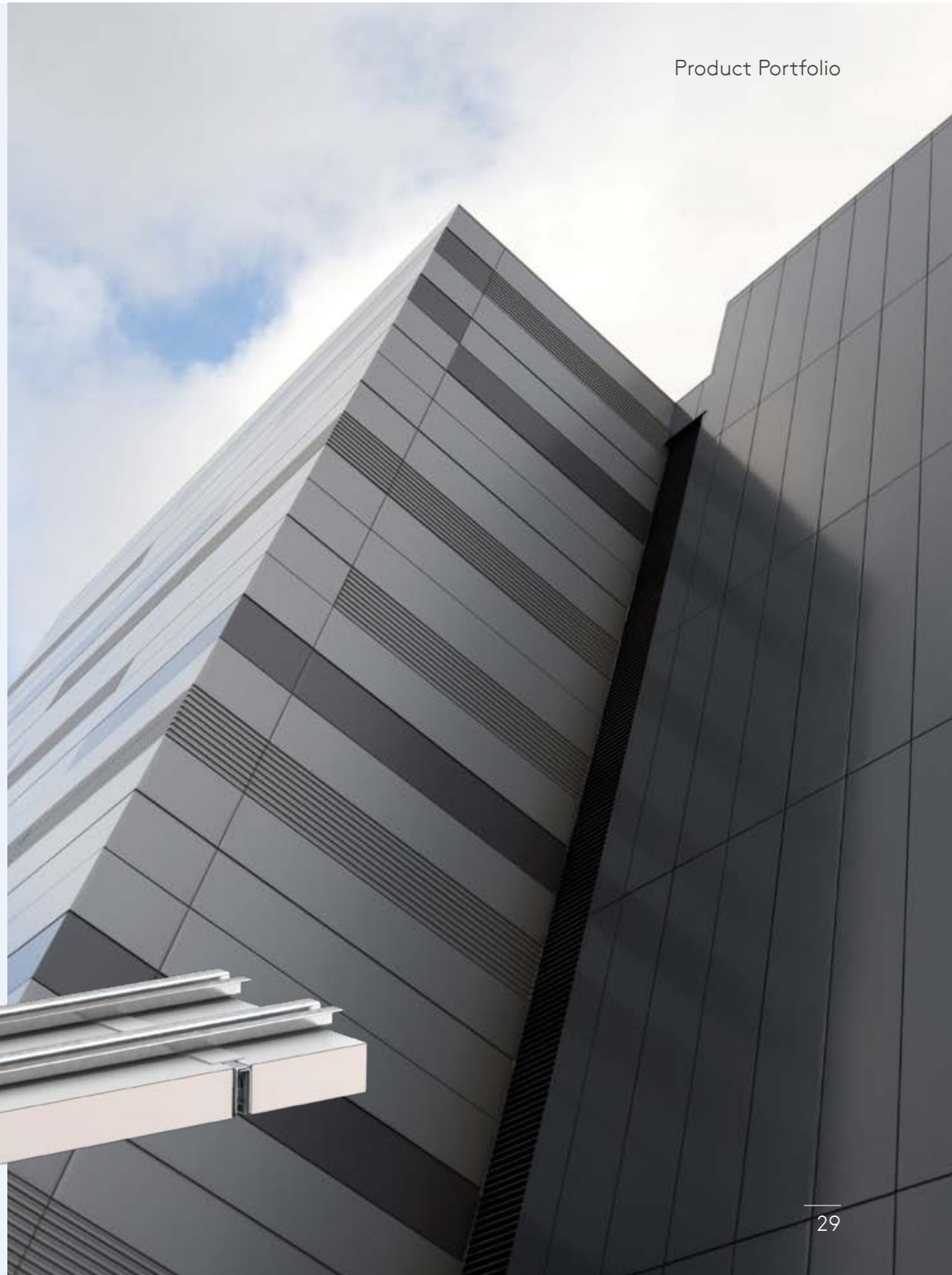
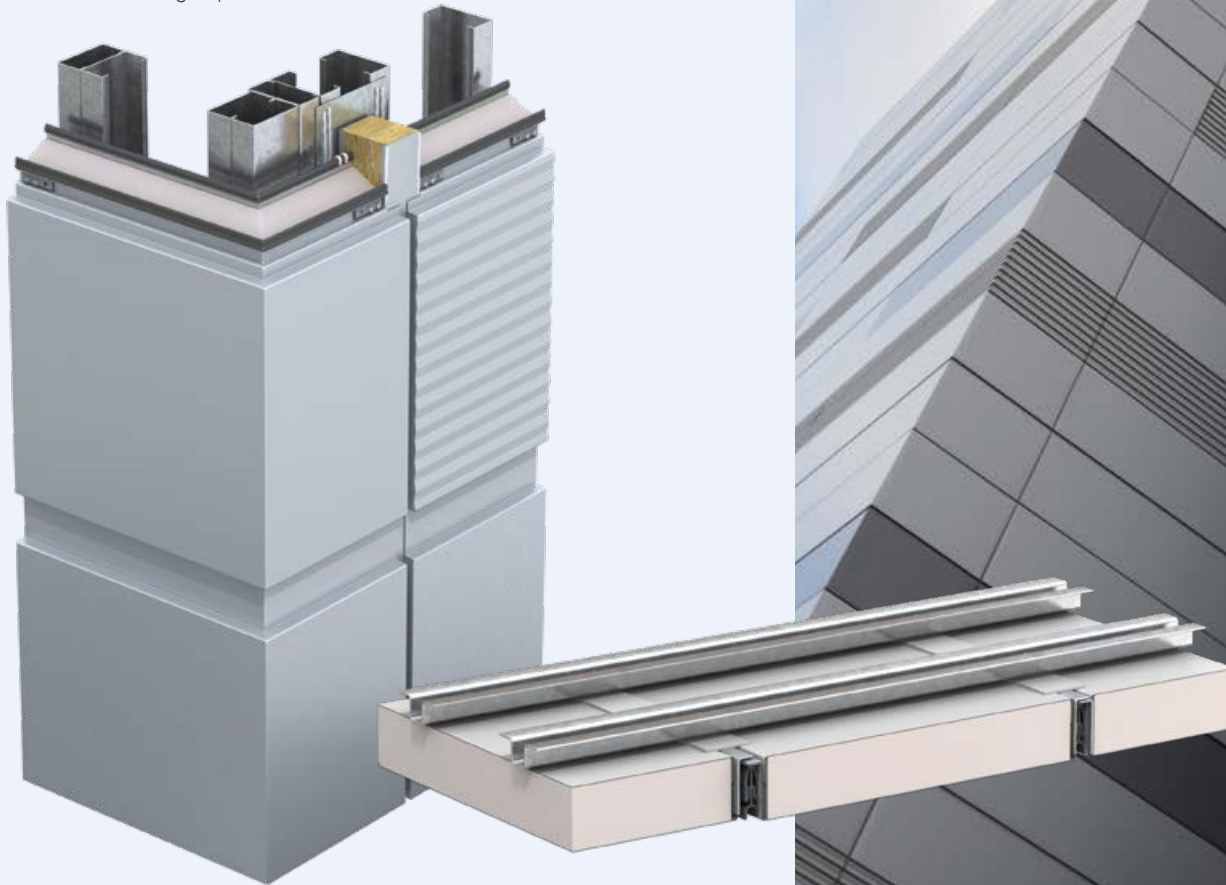
- Horizontal radius panels
- Vertical panels with elliptical curved radius
- Segmented panels



Unique Project Considerations

Integrated Profiles

- Flexibility for unique design
- Multiple profiles and color options
- Modified edge options



Architectural Insulated Metal Panel Systems



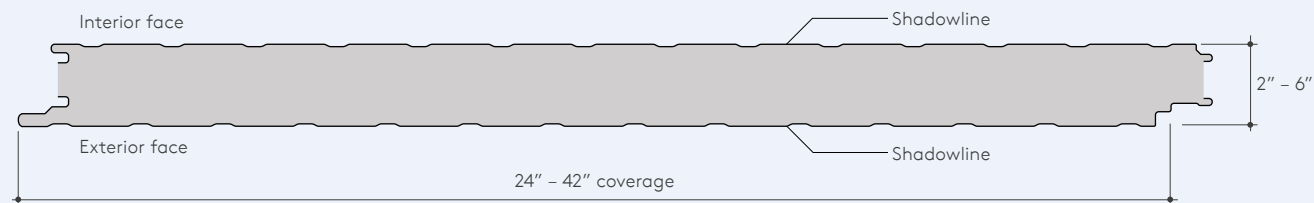
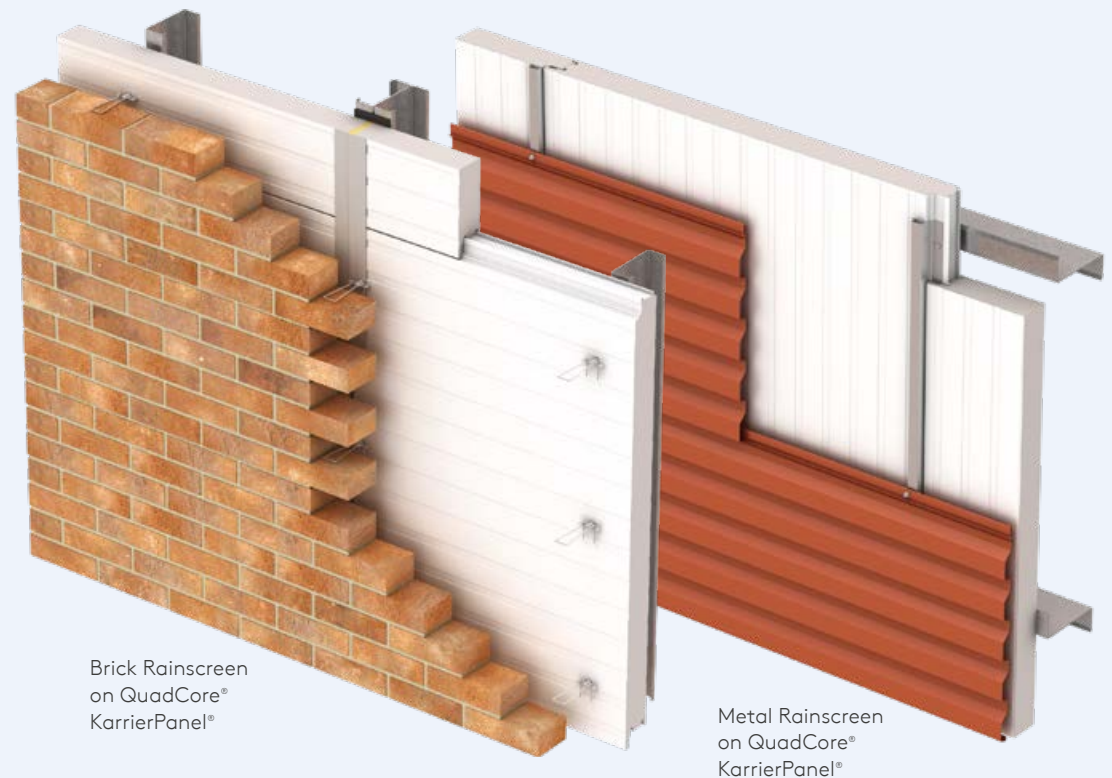
QuadCore®
KarrierPanel®



QuadCore® 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, QuadCore® KarrierPanel® is the ideal barrier wall to support secondary non-combustible rainscreen systems such as brick or metal façades.

Product Specifications

Insulation Core	QuadCore® Technology
Profile	Exterior: Shadowline, Micro-Rib, Mini Micro-Rib, Mini-Wave, Azteco™, or 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	3/8" to accommodate rail
Orientation	Vertical or horizontal
Post Fabrication	N/A



to watch Traditional
Multi-Component Wall Build
vs. Kingspan QuadCore®
KarrierPanel® video

QuadCore® KarrierPanel®

Unique KarrierRail

QuadCore® 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 QuadCore® 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.

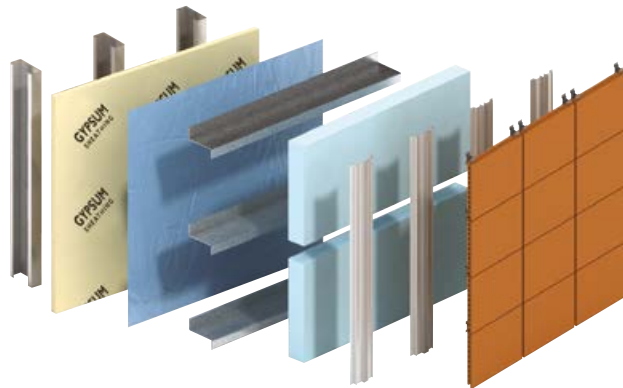


Benefits of the QuadCore® KarrierPanel® Wall System Vs Traditional Built-up Construction:

- The single component QuadCore® 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, allows for visual inspection and testing.
- Results in quicker ROI.

Build Speed

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



Typical multi-part façade system

Vs



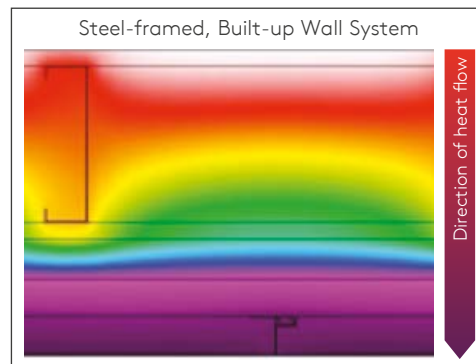
1 Single Component QuadCore® KarrierPanel® Wall System

QuadCore® KarrierPanel® System with Metal Single Skin Rainscreen

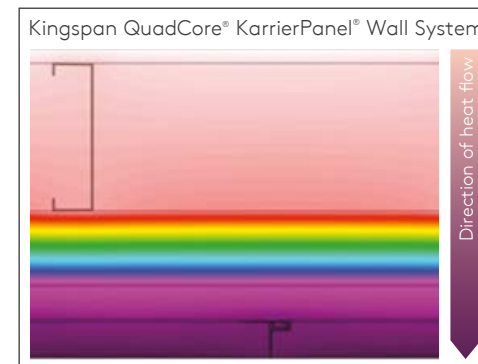
- Faster close-in and dry-in for reduced building costs.
- The single component system results in less labor time on-site and construction waste.
- Reduces delays in construction experienced with scheduling multiple trades.
- Increase in build speed allows faster project completion and reduces business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

Thermal Performance

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



Vs



to watch Traditional Multi-Component Wall Build vs. Kingspan QuadCore® KarrierPanel® video

Architectural Insulated Metal Panel Systems

Colors and Coatings



Kingspan BENCHMARK architectural wall panels are available in a variety of high- performance coatings and colors. We offer a full spectrum of vibrant colors for every color scheme and coatings that provide long-life protection, color and gloss retention. Make your Mark and bring another dimension to your building with Color.

Add form, function, identity and shape to your next building project. From multiple textures, micas and metallics, to our Specialty Finishes including Camos, Wood Grains, Weathered Zinc, Rusts and Coppers, just ask about our limitless possibilities.

MAKE YOUR MARK



Service and Support – An Integrated Approach

1. Concept Creation



We offer technical advice to make your design a reality, including design calculations, specifications, product application and integration assessment.

Our Business Development Team will work with design professionals to provide the best design solution.

2. Quotations



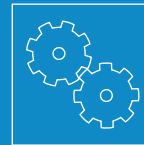
Our Regional Sales Managers and Estimating Team work closely with suppliers to provide a detailed quotation for your design including pricing and lead times.

3. Customer Approval and Order Placement



Our dedicated Customer Support Team is highly trained specifically on Kingspan's BENCHMARK products and provides focused customer service for all commercial pre- and post-order administration, delivery scheduling, and installer support, ensuring a seamless, coordinated customer experience.

4. Production



Once project drawings and details are approved, we rapidly create your order and submit it for production, keeping you updated on the progress.

Our streamlined process, using state-of-the-art automated manufacturing equipment, combined with our highly skilled and experienced staff, ensures consistently high quality and efficient production of your chosen solution.

5. Delivery



We work with you to quickly provide a professional delivery plan to suit your project needs. Our Customer Support Team will ensure deliveries are made on time, in full and in immaculate condition.

6. Field Service Support



Our Field Services Team provides off- and on-site installation training and support in order to guide our installers to deliver 'in-place' products that fulfill customers' requirements and expectations. We offer a site inspection service throughout the construction process as well as advice on mechanical handling solutions.

7. Completion and Handover



On completion, we will give you all the relevant documentation at handover of your project, including comprehensive warranty and maintenance manuals that ensure you get the best from Kingspan's BENCHMARK.

8. In-Use



Our service continues on after the project is complete. With proven performance for a long and durable service life, backed by our system warranty, you can rest assured you have chosen the ultimate cladding solution.





Contact Details

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For the product offering in other markets please contact your local sales representative or visit [our website](http://our.website).

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

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