A turning point in building design

BENCHMARK By Kingspan has partnered with market leading manufacturers to provide engineered façade systems, designed with the ability to support a wide range of options including ACM, ceramic tile, porcelain stone and thin-brick. In an endless choice of colors, providing a striking finish that will give buildings a modern, stylized appearance.
Introduction

Façade Systems

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These façade systems utilize the same advanced insulated panel technology that delivers a high performance building envelope, and at the same time reduces complexities in constructibility and design. Once our KarrierRail system has been installed, the building is fully weathertight, allowing internal fit-out to commence and removing the façade installation from the critical path.

When compared to traditional multi-component façade systems, BENCHMARK By Kingspan’s Engineered Façade Systems provide benefits in a number of areas.
Unique KarrierRail

KarrierPanel utilizes a unique, Kingspan designed rail. This stable and secure structural rail safely transmits positive and negative live and dead loads from the multiple façades through panel and rail fasteners to the structural supports behind the insulated panels.

Additional fasteners securing the exposed rail edge provide extra fastening capacity and stability to the rail. 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, ranging from brick to single skin metal.

**Product Specification**

| Profile          | Exterior: Shadowline 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 option    | ¾” to accommodate rail        |
| Orientation      | Vertical or horizontal        |
| Post fabrication | N/A                           |
| R-value          | ≈ 7.2 per inch per ASTM C518 @ 75°F  
|                  | ≈ 8.25 per inch per ASTM C518 @ 35°F |

**System Benefits**

- Totally thermally broken
- Meets ASHRAE 90.1
- Fast to install – ensures weathertightness as soon as installed
- Easy to integrate – flexibility for unique design
- Fully guaranteed – for total peace of mind
- Single sourced solution – consistency and less coordination

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 bearing surface to accommodate a variety of façade options.

![Kingspan KarrierPanel + Façade Options = BENCHMARK By Kingspan Engineered Façade System](image-url)
Customer Options

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.

Performance Testing and Approvals

Kingspan insulated panels meet specific building envelope performance criteria and requirements stipulated by US and Canadian building codes.

<table>
<thead>
<tr>
<th>Test</th>
<th>Procedure</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire</td>
<td>ASTM E84</td>
<td>Flame spread: &lt;25, smoke developed &lt;450</td>
</tr>
<tr>
<td></td>
<td>CAN/ULC-S102</td>
<td>Flame spread: 20, Smoke developed: 350 for panel with facings</td>
</tr>
<tr>
<td></td>
<td>CAN/ULC-S127</td>
<td>Flame spread: &lt;500 for foam core</td>
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<tr>
<td></td>
<td>NFPA 259</td>
<td>Tested for potential heat of building materials</td>
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<tr>
<td></td>
<td>NFPA 268</td>
<td>Passed: standard test method for determining ignitability of exterior wall assemblies using a radiant heat energy source</td>
</tr>
<tr>
<td></td>
<td>NFPA 285</td>
<td>Passed: standard fire test method for evaluation of fire propagation characteristics of exterior non-load-bearing wall assemblies containing combustible components</td>
</tr>
<tr>
<td>Structural</td>
<td>ASTM E72</td>
<td>Vacuum chamber tested. Panel load/span and deflection tables are available</td>
</tr>
<tr>
<td>Thermal Performance</td>
<td>ASTM C518</td>
<td>R-value per inch = 7.2 h.ft²°F/Btu.in</td>
</tr>
<tr>
<td>Air Infiltration</td>
<td>ASTM E283</td>
<td>0.003 CFM/ft² of panel area at 6.24 psf</td>
</tr>
<tr>
<td>Water pressure</td>
<td>ASTM E331</td>
<td>No uncontrolled water penetration at 20 psf differential</td>
</tr>
<tr>
<td></td>
<td>AAMA 501.1</td>
<td>Dynamic water pressure testing – no sign of water leakage at 15 psf</td>
</tr>
<tr>
<td>Fatigue Tests</td>
<td>Cyclic test to positive</td>
<td>The panels exceeded 2 million alternate cycles without failure or damage and negative wind loading to ± L/180 deflection</td>
</tr>
<tr>
<td>Bond Strength</td>
<td>ASTM D1623</td>
<td>Panels tested for tensile bond strength of metal to foam</td>
</tr>
</tbody>
</table>
|             | Sample placed in an autoclave device and pressurized to 2 PSI at 212 °F for 2½ hrs | No skin delamination with direct pull off pressure up to 1188 psf
Product Specification

BENCHMARK’s ACM and MCM façade systems provide a striking finish that gives buildings a modern stylized appearance which is virtually maintenance free.

ACM is a lightweight composite material, consisting of two aluminum cover sheets and a fire rated core. It is a simple and versatile product which delivers a weather resistant, unbreakable and shock resistant façade which is very easy to install.

ACM is available in a wide range of colors to provide your project with eye catching designs.

MCM (Metal Composite Material) consists of two metal cover sheets and a fire rated core. The commonly used metals are Zinc, Stainless Steel, or Copper, but other specialty metals are available.

MCM comes in a nearly limitless array of colors, finishes, reveals, and sizes to customize your building exactly to your design intent.
Façade systems are specifically designed for adaptability and performance.

Kynar-coated, powder-coated and epoxy paint systems, wood grains, prints and anodized finishes for aluminum products.

Natural finishes available: wood, mineral, granite, patina and stone paint.
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1. BENCHMARK By Kingspan Insulated Metal Panel (Barrier Wall)
2. BENCHMARK By Kingspan KarrierRail
3. Aluminum Composite Material (ACM) panel rout and return edge
4. Aluminum Composite Material (ACM) spline
5. Aluminum Composite Material (ACM) continuous extrusion
6. Aluminum Composite Material (ACM) clip

Color Coating Benefits
- Excellent corrosion resistance
- Maintenance free for up to 30 years
- Coating highly resistant to UV light
- Abrasion and impact resistant
Product Specification

BENCHMARK By Kingspan's Plate façade system provides a colorful range of options. Not just aesthetically pleasing, this building façade system has been engineered to be extremely durable and highly resistant to impact damage.

Also built with flexibility in mind, BENCHMARK By Kingspan’s Plate can easily be installed horizontally or vertically as well as integrated with traditional construction methods and building systems.
Designed and engineered for building code compliance and tested to industry standards
BENCHMARK By Kingspan’s Plate Façade System provides a colorful range of options.
- Variations in joint width, depth, pattern and materials
- True radius panels a design option
- All metallic materials available in this system
- All materials back-routed for clean, crisp fold lines
- Route reinforcement incorporated at all panel bend locations
- Shallow vs. deep full perimeter extrusion framework options
- Rivetless and concealed fastener options
- Clips installed on 2 sides of each panel

1. BENCHMARK By Kingspan Insulated Metal Panel (Barrier Wall)
2. BENCHMARK By Kingspan Karrier Rail
3. Plate Panel Rout and Return Edge
4. Plate Panel Spline
5. Plate Panel Continuous Extrusion
6. Plate Panel Clip

Color Coating Benefits
BENCHMARK By Kingspan provides a wide range of color options and finishes including:
- Custom color matching available
- Natural finishes available: wood, mineral, granite, patina and stone paint
- Kynar-coated, powder-coated and epoxy paint systems, wood grains, prints and anodized finishes for aluminum products
- Anodized, custom patinas and mechanical finishes for specialty metals
- Ability to withstand extreme temperatures and humidity removing geographic limitations

NOTE: The above colors are not a comprehensive list of the available colors and textures. To see the full color offering please reach out to your BENCHMARK By Kingspan representative.
Product Specification

BENCHMARK By Kingspan’s Extruded Plank Façade system is highly attractive, durable, and versatile in its applications, delivering a very modern finish while being able to integrate seamlessly with traditional architectural looks.

Plank is also available in 6 standard profiles each available in a wide range of colors, finishes, and sizes. This system has been designed to provide a quicker and easier installation process, with a simple clip fastening system allowing for rapid installation.

Custom designs are available

The truly unique aspect of Extruded Plank is the ability to design your own Plank specific to your project. This enables you to create a design that will be exclusive to your project for a truly one-of-a-kind aesthetic experience.
BENCHMARK Product Portfolio

Wave
Gull
Convex
Concave
Flat
Shark Fin
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BENCHMARK Product Portfolio

1. BENCHMARK By Kingspan Insulated Metal Panel (Barrier Wall)
2. BENCHMARK By Kingspan KarrierRail
3. BENCHMARK By Kingspan Extruded Plank Façade
4. BENCHMARK By Kingspan Extruded Plank Clip
5. Fastener
6. Subgirt secondary rail

Color Palette

You can create your own custom Plank
This is a feature that allows you to create a truly aesthetically unique building. This is a design that you won’t see recreated on any other building anywhere in the world.

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To see the full color offering please reach out to your BENCHMARK By Kingspan representative.
Thin Brick Façade System

Product Specification
BENCHMARK By Kingspan’s Thin Brick Façade Systems are a modern interpretation of a classic look utilizing eye catching finishes to create uniquely styled buildings. This façade system combines the classic and timeless brick appearance with the superior performance and durability of insulated metal panels.

Both the bricks and the mortar, are available in a wide range of colors, textures and finishes as well as the ability to match custom colors. BENCHMARK By Kingspan’s Thin Brick light weight system is faster and easier to install than a traditional brick system as well as decreasing a building’s overall demand for energy.
Bricks require no adhesives to be held in place

Bricks are produced in the same manner as traditional building brick

Horizontal and vertical application

Bricks are held in place by steel rails to form permanent mechanical bond

System Benefits

- Design flexibility: various profiles, textures, colors, mortars
- Horizontal and Vertical application
- Fast and simple installation process
- Bricks are held in place by steel rails to form permanent mechanical bond
- Bricks require no adhesives to be held in place
- Bricks are produced in the same manner as traditional building brick
BENCHMARK’s Thin Brick Façade System is a modern interpretation of a classic look utilizing eye catching finishes to create uniquely styled buildings.
Color Palette

BENCHMARK By Kingspan offers a multitude of options for the Thin Brick system:

- **Extruded bricks** are a commercial style brick, uniform in size, available in a wide range of colors and textures, ranging from wire cut to tile like smooth.

- **Molded texture bricks** are machine-molded and feature a traditional molded texture.

- **Antique texture bricks** are also machine-molded, but have a more distinctive, weathered appearance.

- **Handmade texture bricks** are hand-molded with a very distinctive texture and possess a rustic look.

We provide a wide array of colored bricks. In addition we offer a variety of standard mortar options as well as custom color matching for truly unique buildings.

**Thin Brick Mortar Choices**

NOTE: The above colors are not a comprehensive list of the available colors and textures.
To see the full color offering please reach out to your BENCHMARK By Kingspan representative.
Porcelain Stone

Façade System

Product Specification

BENCHMARK By Kingspan's Porcelain Stone Façade System delivers the beauty and variation of natural stones like granite, marble, and limestone without the long term maintenance concerns of a traditional stone system. Unlike traditional stone, Porcelain Stone is exceptionally lightweight.
Porcelain Stone offers the high performance of through body porcelain tile, non-absorbent, acid and base resistance and is harder than real stone.

Porcelain Stone is a natural material that offers the look and feel of traditional stone.

Porcelain Stone is completely resistant to light and UV radiation.

Individual modules can be removed and replaced as necessary.
BENCHMARK Porcelain Stone Façade System delivers the beauty and variation of natural stones like granite, marble, and limestone without the long term maintenance concerns of a traditional stone system.
1 BENCHMARK By Kingspan Insulated Metal Panel (Barrier Wall)
2 BENCHMARK By Kingspan KarrierRail
3 BX horizontal rail
4 Structural framing
5 Porcelain Stone façade panel

Standard finished size = 47.16” x 23.54”

Color Palette

Finish Options

Natural: Porcelain Stone is supplied in its natural state in a smooth or structured finish.

Semi-Luster: A patented pre-polishing process is used before the Porcelain Stone slabs are fired to provide a semi-luster finish, revealing veining within the material.

Honed: The surface of the Porcelain Stone is abraded with diamond coated grinding equipment to achieve a honed finish.

Polished: The surface of the Porcelain Stone is abraded with diamond coated grinding equipment to create a brilliant high gloss polished finish.

Metallic: The Porcelain Stone is impregnated with special oxides and minerals which fuse together during firing to create a metallic semi-luster finish.

NOTE: The above colors are not a comprehensive list of the available colors and textures. To see the full color offering please reach out to your BENCHMARK By Kingspan representative.
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:

- Unrivalled 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.
Unrivalled Thermal Efficiency

QuadCore™ Technology is certified as the most thermally efficient closed-cell insulation core on the market.

**Lifetime performance and value benefits**
- The class-leading 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.

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**
- None of the chemical ingredients present in Kingspan’s QuadCore™ foam are included on the ILFI Declare Red List.
- C2C Silver material health certified
- Greenguard Gold certified

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.

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.
The Blueprint for finishes

BENCHMARK By Kingspan offers a wide selection of specialty finishes for architectural building envelope solutions.