

Kingspan Facades

# QuadCore™ Evolution

Panelised Facade  
Systems

PILZ

RENATE PILZ  
SOFTWARE DEVELOPMENT CENTRE

 BR 135 UP 135 v6 30 0414	Horizontal 150mm ECOuter® PIR Evolution Axis Panel has been tested to BS 8414.2.	 BR 135 UP 135 v6 30 0414	Horizontal 100mm QuadCore® Evolution Axis has been tested to BS 8414.2.	 FM APPROVED	ECOuter® PIR Evolution 900 and 1000mm wide, 45 to 120mm thicknesses QuadCore® Evolution 900 and 1000mm wide, 45 to 150mm thicknesses.	 LPCB LPS 181: Part 1, Issue 1.2 Date: Nov 2019	QuadCore® Evolution 600 to 1000mm wide, 45 to 150mm thick. Vertical and horizontal laid.
--	---	--	--	---	--	---	---

## QuadCore™ Evolution

---

- QuadCore™ Evolution Axis	4-5
- QuadCore™ Evolution Recess	6-7
- QuadCore™ Evolution Multi-groove	8-9

## Testing & Accreditation

---

- Fire Testing	10-11
- System Performance	12
- Build Speed	14-15

## Customising Your Building

---

- Corners & Top hats	16-17
----------------------	-------

## Inspiration

---

- Pilz	20-21
- IDA Business & Technology Park	22
- Vitens Logistics Centre	23
- Toyota	24-25
- Elutec	26
- St. Joseph's	27
- Louis Blériot High School	28
- Garonor Business Park	29
- Bührer & Wehling	29
- Lion Products Bonheiden	30
- Loda Office	30
- Adolf Papeleupark	31
- Hastings District Court House	32
- Steen Invest Leeuwarden	33
- TNT Green Office	34
- Oranjewoud Oosterhout Netherlands	35







## QuadCore™ Evolution - the single component, single fix panelised facade system.

Evolution has the look and feel of a super smooth rainscreen facade with the advantage of single point installation and excellent thermal performance.

The system meets or exceeds all the statutory regulation criteria, such as structural, thermal, acoustic and durability performance, offers a sustainable rated solution and, most importantly of all, provides life and property fire safety protection.

### Super-smooth unprofiled insulated panel

- Secret fix
- Can be laid vertically or horizontally
- Fastest construction method

 <p><b>BR 135</b> BR 135 to BS 8414</p>	<p>Horizontal 150mm ECOsafe® PIR Evolution Axis Panel has been tested to BS 8414-2.</p>	 <p><b>BR 135</b> BR 135 to BS 8414</p>	<p>Horizontal 100mm QuadCore™ Evolution Axis has been tested to BS 8414-2.</p>
 <p><b>FM</b> APPROVED</p>	<p>ECOsafe® PIR Evolution 900 and 1000mm wide, 45 to 120mm thicknesses QuadCore™ Evolution 900 and 1000mm wide, 45 to 150mm thicknesses.</p>	 <p><b>LPCB</b> LPS 1181 - Part 1 - Issue 1.2 Cert No: 250F</p>	<p>QuadCore™ Evolution 600 to 1000mm wide, 45 to 150mm thick. Vertical and horizontal laid.</p>

### Factory made

- Cost-effective
- Quick order turnaround
- Broad range of colours
- Up to 40 years thermal and structural guarantee

TNT Green Office  
Hoofddorp

Netherlands

—  
Product  
Evolution Axis

—  
Architect  
Architectenbureau Paul  
de Ruiter







## QuadCore™ Evolution Axis




QuadCore™ Evolution Axis is a highly streamlined, sleek unprofiled insulated panel system; the perfect solution if you are looking to achieve a minimalist facade on buildings with large flat surface areas. Smooth and flawless in appearance.

Standard lengths 1.8 to 17m - for other lengths, please contact Kingspan Technical Services. Bespoke cover widths 600mm to 1000mm - in 1mm (subject to MOQ) increments available 600/900/1000mm standard sizes.

### Performance U-value

Core Thickness (mm)	45	54	60	70	74	80	88	100	120	140	150
U-value (W/m <sup>2</sup> K)	0.46	0.35	0.32	0.27	0.25	0.23	0.21	0.19	0.15	0.13	0.12
Weight (kg/m <sup>2</sup> ) 0.63 / 0.4 Steel	12.8	13.1	13.4	13.8	13.9	14.2	14.5	15.0	15.8	16.6	17.0

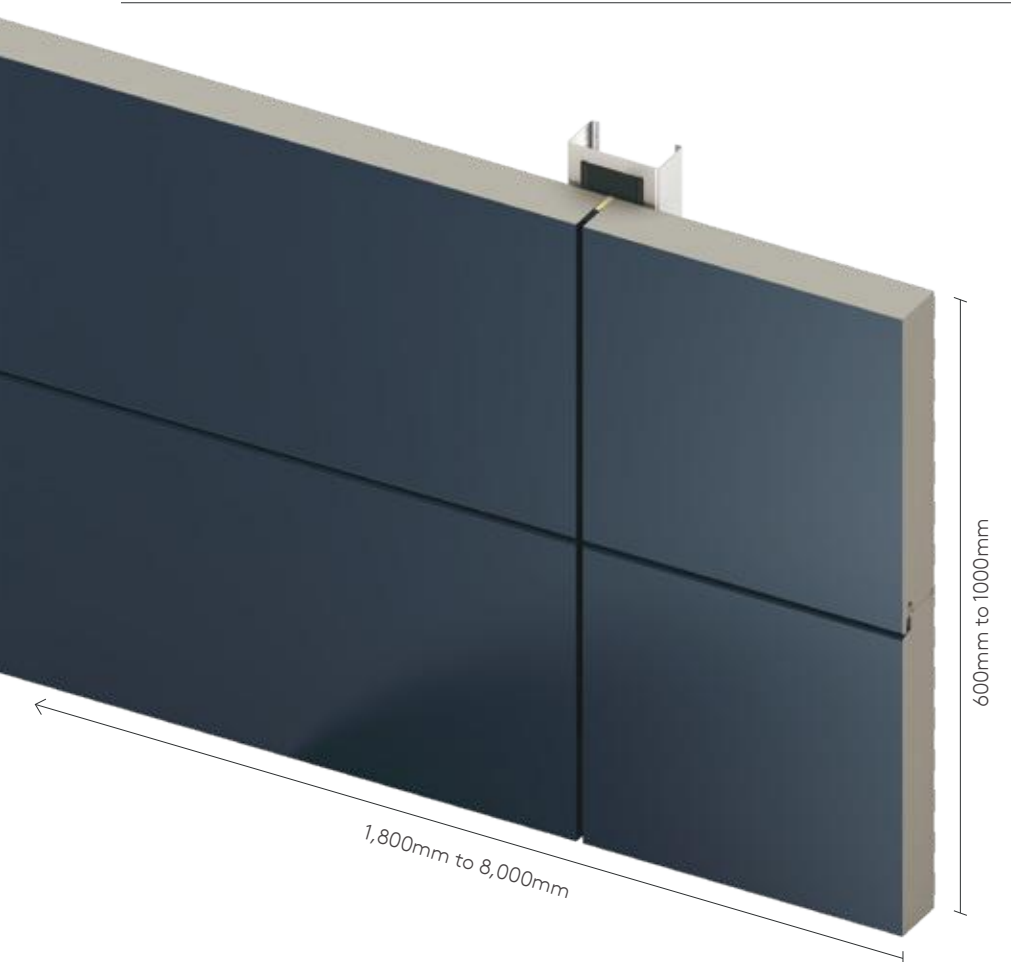


 <b>BR 135</b> BR 135 to BS 8414	Horizontal 150mm ECOsafe® PIR Evolution Axis Panel has been tested to BS 8414-2.
 <b>FM APPROVED</b>	ECOsafe® PIR Evolution 900 and 1000mm wide, 45 to 120mm thicknesses QuadCore™ Evolution 900 and 1000mm wide, 45 to 150mm thicknesses.
 <b>LPCB</b> LPS 1181 : Part 1, Issue 1.2 Cert No. 2608	QuadCore™ Evolution 600 to 1000mm wide, 45 to 150mm thick. Vertical and horizontal laid.



Arcomet Service NV Office  
Paarl-Beringen, Belgium  
Product  
Evolution Axis





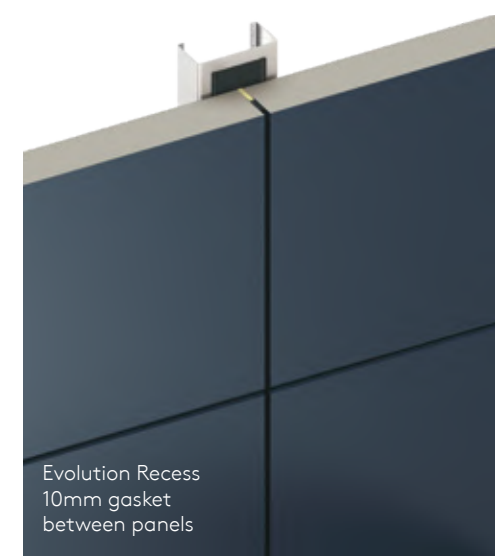
## QuadCore™ Evolution Recess

QuadCore™ Evolution Recess features depth and dimension through the folding of the panel edge and the insertion of a 10mm or 20mm gasket between the panels, creating a unique 3D effect.

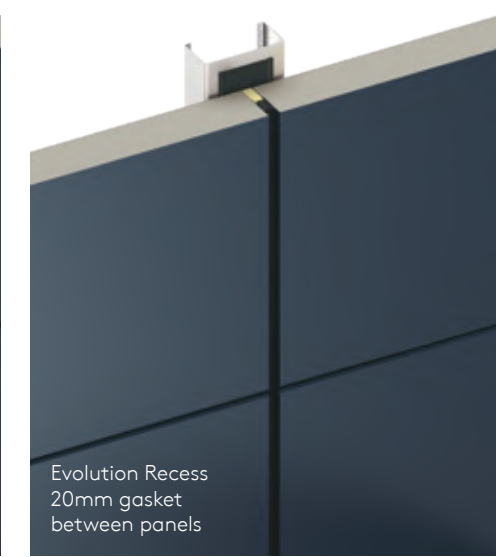
Standard lengths 1.8 to 8m - for other lengths, please contact Kingspan Technical Services. Bespoke cover widths 600mm to 1000mm - in 1mm (subject to MOQ) increments available 600/900/1000mm standard sizes.

### Performance U-value

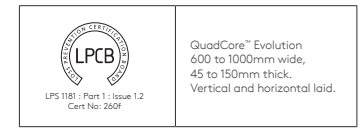
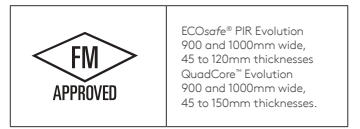
Core Thickness (mm)	45	54	60	70	74	80	88	100	120	140	150
U-value (W/m <sup>2</sup> K)	0.46	0.35	0.32	0.27	0.25	0.23	0.21	0.19	0.15	0.13	0.12
Weight (kg/m <sup>2</sup> ) 0.63 / 0.4 Steel	12.8	13.1	13.4	13.8	13.9	14.2	14.5	15.0	15.8	16.6	17.0



Evolution Recess  
10mm gasket  
between panels



Evolution Recess  
20mm gasket  
between panels



ECOsafe® PIR Evolution  
900 and 1000mm wide,  
45 to 120mm thicknesses  
QuadCore™ Evolution  
900 and 1000mm wide,  
45 to 150mm thicknesses.

QuadCore™ Evolution  
600 to 1000mm wide,  
45 to 150mm thick.  
Vertical and horizontal laid.







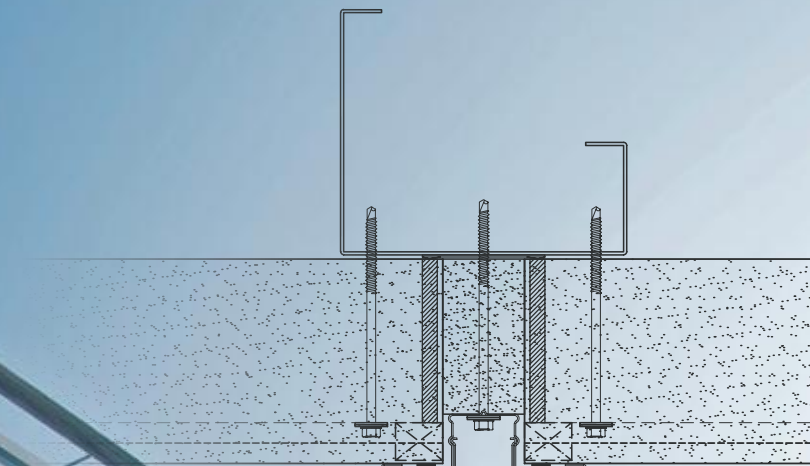
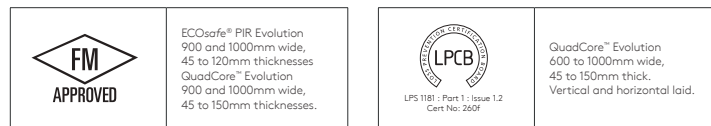
## QuadCore™ Evolution Multi-groove

QuadCore™ Evolution Multi-groove is a premium flat panel that has one or two grooves engineered into its surface, creating subtle shadow lines on the building's facade and an illusion of smaller panel widths without the installation time constraints.

Standard lengths 1.8 to 17m - for other lengths, please contact Kingspan Technical Services. Increments available, 900mm and 1000mm standard sizes.

### Performance U-value

Core Thickness (mm)	45	54	60	70	74	80	88	100	120	140
U-value (W/m <sup>2</sup> K)	0.46	0.35	0.32	0.27	0.25	0.23	0.21	0.19	0.15	0.13
Weight (kg/m <sup>2</sup> ) 0.63 / 0.4 Steel	12.8	13.1	13.4	13.8	13.9	14.2	14.5	15.0	15.8	16.6

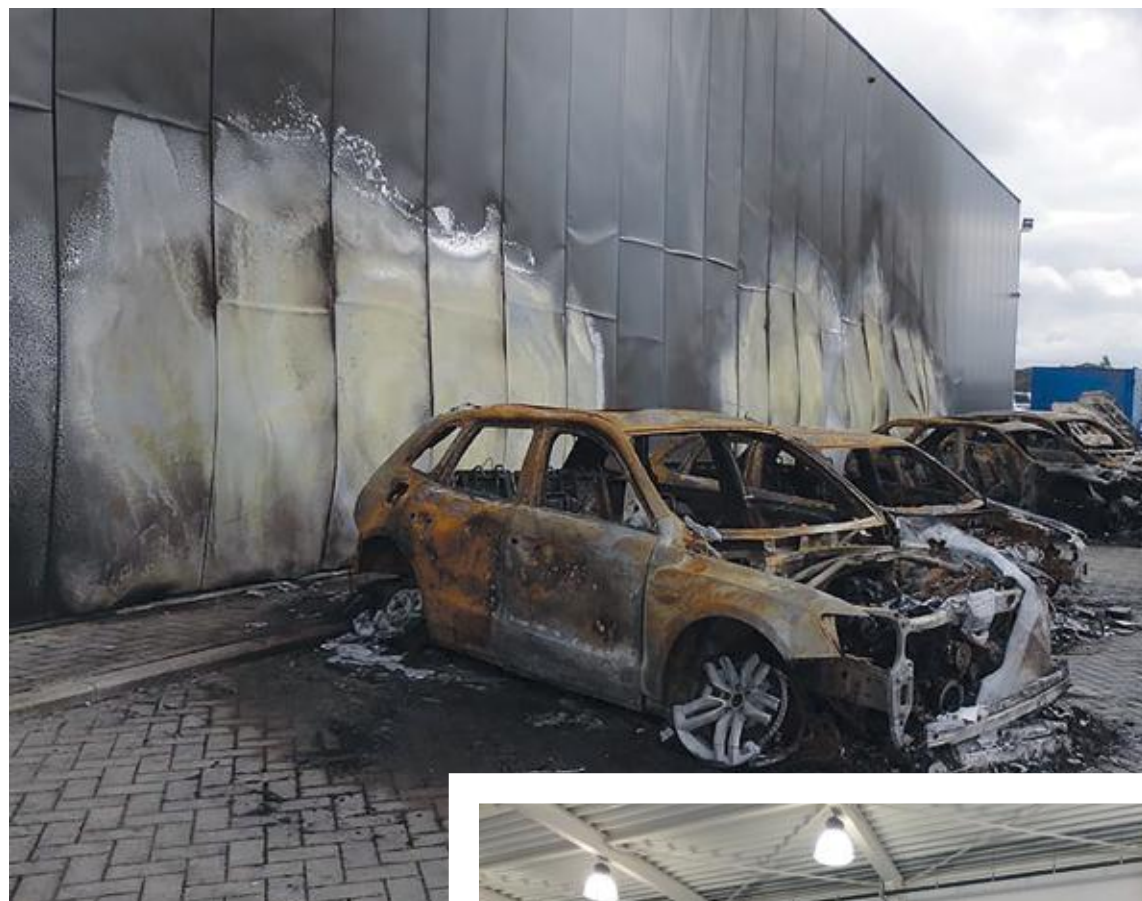


## Renault Dealership

France  
—  
Product  
Evolution Multi-groove







## Real Fire Case Studies

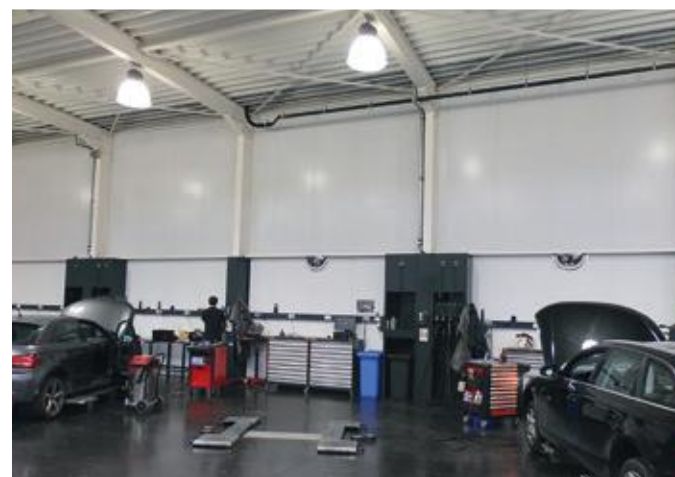
Whilst large scale fire testing provides a very good indication of how systems react to fire, over the last 15 years we have collated a comprehensive collection of case study information based on major fires in a wide range of buildings that shows excellent fire performance of our panels in real fire situations. Case studies are independently investigated and have only been published where we have permission.

### Audi Dealership, Belgium

The fire occurred in the external compound of a large Audi dealership - a deliberate act of arson. The car in the foreground is understood to be an Audi Q3 with other cars being of at least a similar make and model. At locations remote from the area of peak incident radiative heat flux, the charring of the PIR core was significantly reduced, demonstrating that combustion had not been propagated by the PIR core material.

The inside of the workshop showed no evidence of fire penetration in an area adjacent to the external fire attack.

For more details on our case studies visit:  
[www.kingspan.co.uk/panels-fire-safety](http://www.kingspan.co.uk/panels-fire-safety)



Inside of the workshop showed no evidence of fire penetration.







## Fire Tested

100mm QuadCore™ Evolution Axis Panel has been tested to BS 8414-2 / BR135.

150mm PIR ECOsafe® Evolution Axis Panel has been tested to BS 8414-2 and meets the requirements of BR 135 for buildings with a storey above 18 metres.\*



Please scan to learn more about Kingspan's large-scale tested systems.

 BR 135 <small>BR 135 to BS 8414</small>	Horizontal 100mm QuadCore™ Evolution Axis has been tested to BS 8414-2.
 BR 135 <small>BR 135 to BS 8414</small>	Horizontal 150mm ECOsafe® PIR Evolution Axis Panel has been tested to BS 8414-2.
 FM APPROVED	ECOsafe® PIR Evolution 900 and 1000mm wide, 45 to 120mm thicknesses QuadCore™ Evolution 900 and 1000mm wide, 45 to 150mm thicknesses.
 LPCB <small>LPS 1181 - Part 1 - Issue 1.2                  Cert No: 2649</small>	QuadCore™ Evolution 600 to 1000mm wide, 45 to 150mm thick. Vertical and horizontal laid.

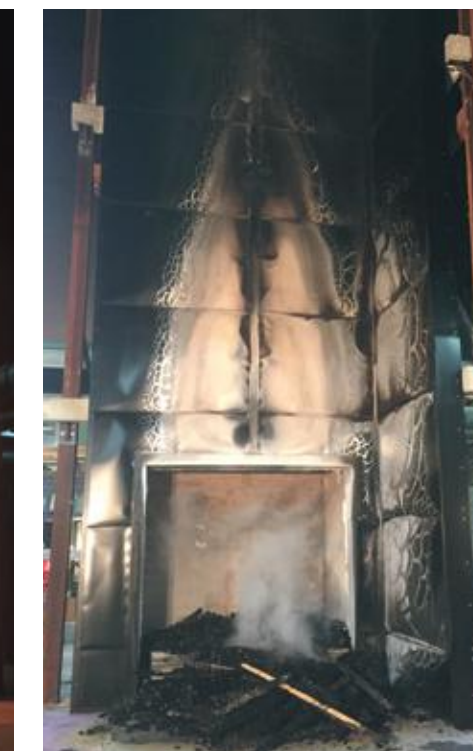
## BS 8414-2 to BR 135 large-scale fire test: 100mm QuadCore™ Evolution Axis Panels



Test start.



During test, after 30 minutes



End of test.

\*For alternative profiles and thicknesses we can work with your design team to prepare technical assessments performed by an independent fire specialist where a project requires alternative product combinations than those tested.



## System Performance

### Thermal

QuadCore™ Evolution insulation cores provide superior thermal performance with tested U-values. 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.

### Fire

The panelised facade systems are widely recognised by investors, property insurers, designers and constructors for their superior fire performance and reducing the fire risk. The systems are tested and approved to European and country specific standards, complying with all relevant Building Regulations.

### Acoustic

QuadCore™ Evolution facade panels have a minimum single weighted sound reduction index  $R_w$  of 24dB.

### Superior Airtightness & Weathertightness

One of the biggest sources of building heat loss (or heat gain) is air leakage, i.e., 'leaky buildings'. QuadCore™ Evolution is rigorously tested to ensure airtightness and weathertightness over the lifecycle of the building.

An air leakage rate of  $3\text{m}^3/\text{hr}/\text{m}^2$  at 50Pa or less can be achieved when using Kingspan insulated roof and wall panels.

### Structural

QuadCore™ Evolution panels consist of two metal faces positioned on either side of a core that is a thermally insulating material, which is firmly bonded to both faces so that the three components act compositely when under load. The individual layers by themselves have limited flexural rigidity and cannot therefore bear loads but, by combining the two outer surface layers with the core, a shear rigid composite section is formed.





## Build Speed

QuadCore™ Evolution Panelised Facade is a single component system that increases speed of build, minimises delays, reduces the need for multiple trades and promotes earlier internal fit-out.

### Step 1



With support steel in place, panel installation can start at the corners, the most critical dimension.

Steel framing tolerances necessary for architectural panel applications are considerably tighter than industrial applications.

### Step 2



Panels are installed on multiple elevations, simultaneously, allowing interior trades to enter the building earlier in the job schedule.

### Step 3



The end result is an enclosed envelope, offering superior thermal and moisture protection, installed in less time than conventional multi-part built-up systems.



Step 4

## Installation Time

### Multi-component vs Single-component

When compared to a multi-part, site assembled, cassette wall system, the QuadCore™ Evolution panel as a single component allows for up to 50% faster installation time.

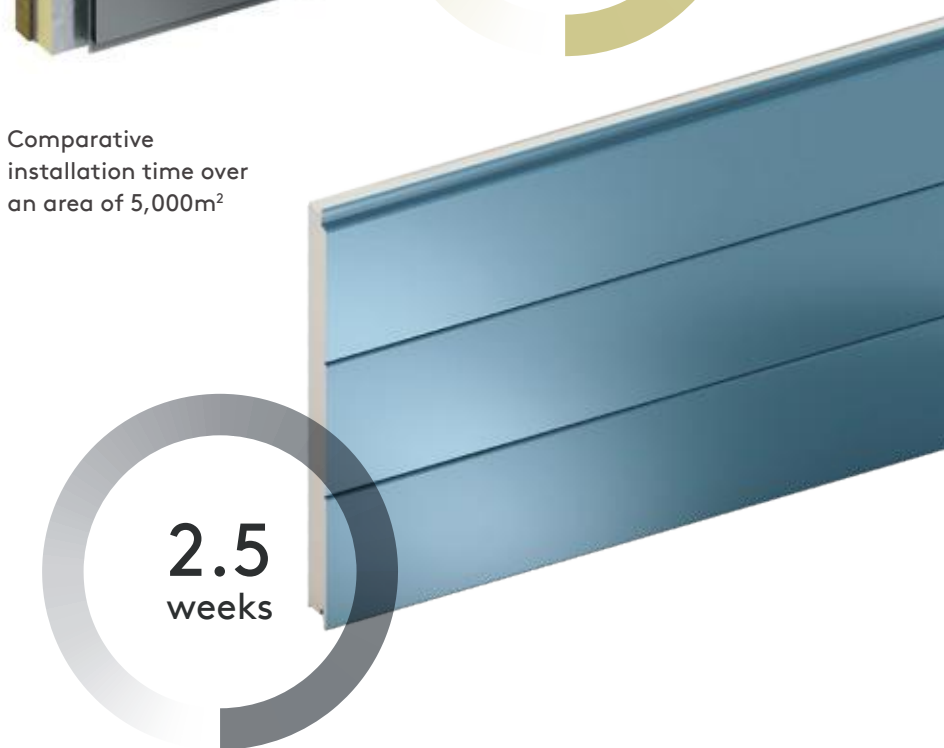
QuadCore™ Evolution Panels are lightweight, easier to handle and can be installed in all weather conditions. The single component nature reduces the need for multiple trades on site and the associated workmanship quality issues.

This allows the site installation of the wall system to be removed from the building programmes' critical path.



5 weeks

Comparative installation time over an area of 5,000m<sup>2</sup>

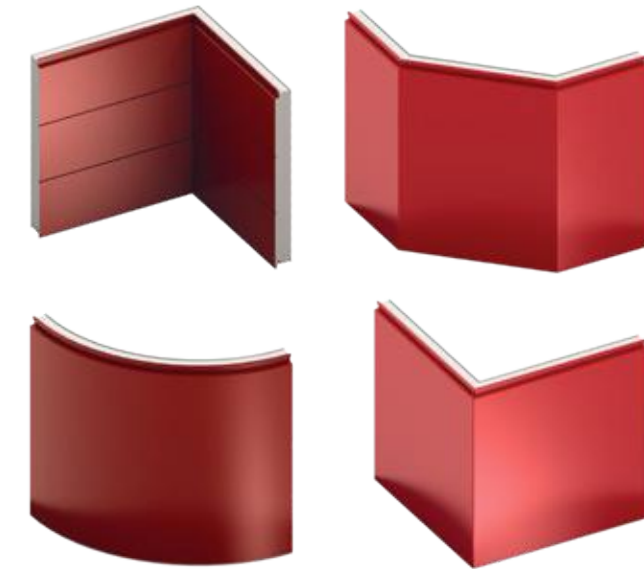


2.5 weeks



## Curves & Corners

Curved elevations and neatly formed secret-fix corners are easily achieved with the QuadCore™ Evolution range. Panels can be curved vertically and horizontally to create large sweeping elevations or used for more understated corner sections. Panels can also be cranked and mitred to form internal or external corner units or to create depth to a boxed and recessed window detail.



## Flashings & Fabrications

We can manufacture complementary flashing, gutters and accessories for all projects.



## Compatibility Chart

	QuadCore™ Evolution Axis	QuadCore™ Evolution Recess	QuadCore™ Evolution Multi-groove
<b>Curved &amp; Performed Corners</b>			
Curved Panel & Corner (Hz)	●	●	
Curved Panel & Corner (Vt)	●		
Cranked / Mitred (Hz)	●	●	●
Cranked / Mitred (Vt)	●	●	
<b>Joint Options</b>			
Steel Omega Section Joint Trim with Flush or Recess Insert (Vt)	●		●
Aluminium Omega Section Joint Trim with Flush or EPDM Gasket Insert (Vt)	●		●
Recessed EPDM Black Gasket 10mm or 20mm (Vt)		●	



## Customising Your Building Design

### Joint Options

The QuadCore™ Evolution range has five joint options or omega section joint trims that can be used vertically or horizontally giving more design freedom.



**System Z**  
Aluminium omega section joint trim, no insert



**System Z**  
Aluminium omega section joint trim with recessed insert



**System Z**  
Aluminium omega section joint trim with rubber gasket



**System X**  
Steel omega section joint trim with flush insert



**System X**  
Steel omega section joint trim with recessed insert









# Pilz

Athlone, Ireland

Product  
Evolution Axis  
Evolution Recess

Architect  
Cook Architects





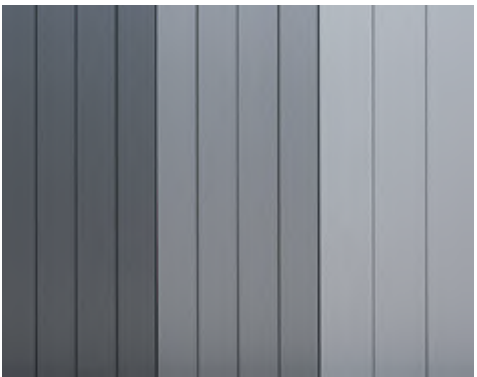


# Vitens Logistics Centre

Lelystad, Netherlands

Product  
Evolution Multi-groove

Architect  
IA Groep Duiven



# IDA Business & Technology Park

Athlone, Ireland

Product  
Evolution Recess

Architect  
Kavanagh Tuite & Associates







# Toyota

Ireland  
 —  
**Products**  
 Recess Fix Cassette  
 Evolution Reveal  
 Evolution Recess  
 —  
**Architect**  
 Node







# Elutec

Dagenham, UK

—  
**Products**  
Evolution Axis  
Karrier System with Shingle

—  
**Architect**  
LSI Architects



# St. Joseph's College Nudgee

Australia

—  
**Product**  
Evolution Axis





## Louis Blériot High School

France

—  
**Product**  
Evolution Axis  
—  
**Architect**  
Philippe Chiossone



## Garonor Business Park

Aulnay sous Bois, France

—  
**Product**  
Evolution Axis  
—  
**Architect**  
Atelier 4+



## Bühler & Wehling

Germany

—  
**Products**  
Evolution Axis  
Karrier System with  
Hook-On Cassette System  
—

**Architect**  
Kingspan Facades & Bühler & Wehling  
Projekt GmbH.





## Lion Products

Bonheiden, Belgium

Product  
Evolution Axis

## Adolf Papeleupark

Gent, Belgium

Product  
Evolution Axis



## Loda Office

Beerse, Belgium

Product  
Evolution Axis

Architect  
AID Architects Oostmalle







## Hastings District Courthouse

Hastings, New Zealand

**Product**  
Evolution Axis  
—  
**Architect**  
Magdalinos Architects



## Steen Invest BV

Leeuwarden, Netherlands

—  
**Product**  
Evolution Axis

—  
**Architect**  
Architectenbureau Paul de Ruiter



# TNT Green Office

Hoofddorp, Netherlands

Product  
Evolution Axis

Architect  
Architectenbureau Paul de Ruiter



# Oranjewoud Oosterhout

Netherlands

Product  
Evolution Axis  
Architect  
Architectenbureau Paul de Ruiter





## Kingspan Facades

Kingspan Facades Evolution  
06/2019 v1

Greenfield Business Park 2, Greenfield, Holywell, Flintshire CH8 7GJ, UK.  
Carrickmacross Road, Kingscourt, Co. Cavan, Ireland.

Tel: +44 (0) 1352 716100  
Tel: +353 (0) 42 969 8500

info@kingspanfacades.co.uk  
info@kingspanfacades.ie

www.kingspanfacades.co.uk  
www.kingspanfacades.ie

Care has been taken to ensure that the contents of this publication are accurate, but Kingspan Insulated Panels and its subsidiary companies do not accept responsibility for errors or for information that is found to be misleading. Suggestions for, or description of, the end use or application of products or methods of working are for information only and Kingspan Insulated Panels and its subsidiaries accept no liability in respect thereof.