

*Benchmark Zinc system is available in two different cassette options in a range of finishes and is installed onto a specifically designed Benchmark Karrier Panel.*

## ZINC



*Images above courtesy of VMZinc*

### FAÇADE DATA

#### Materials

Benchmark Zinc façade system is available in 3 different finishes with two different cassette options. The 3 different finishes are;

- Quartz Zinc- grey in appearance and a texture close to the patina developed by natural zinc.
- Pigmento Zinc- based on the quartz zinc with added mineral pigments and available in three colours, blue, red and green. This coloured finish preserves the naturally grained texture of pre-weathered zinc.
- Anthra Zinc- available in a charcoal colour and is covered on both sides with a surface treatment containing anti-corrosion agents.

The zinc façade is manufactured in accordance with BS EN 988 *Zinc and Zinc alloys*.

#### Fire

Benchmark Zinc façade system is classified A1 (Euro Class) to BS EN 13501-1 *Fire Classification of construction products and building elements*.

#### Environmental

Benchmark Zinc facade system has a Green Guide A rating as per the BRE Global "The Green Guide to Specification", Green Guide 2008 ratings.

### CASSETTE DATA

#### Profile Options



#### Interlocking Plank

Cassette Thickness:

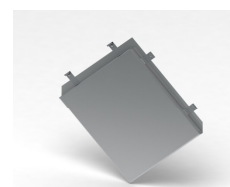
1.0mm

Visible Face Dimension:

3 standard heights-  
200mm, 250mm &  
300mm (max.)

Length: Dependent on  
project

Joint Widths: 5mm, 10mm  
or 20 mm.



#### Shingle

Cassette Thickness:

0.8mm

Visible Face Dimension:

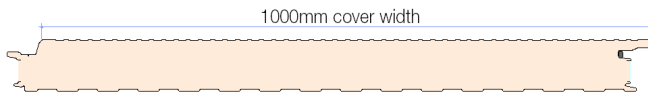
Dependent on Project

#### Product Tolerances

Length	-2mm	+2mm
Width	-2mm	+2mm
Thickness	-2mm	+2mm
Squareness	-2mm	+2mm

# Product Data Sheet

## KARRIER PANEL DATA



### Product Tolerances

Length	-2mm	+2mm
Width	-2mm	+2mm
Thickness	-2mm	+2mm
End Squareness	-3mm	+3mm
Flatness (per metre)	-2mm	+2mm

### Available Lengths

Standard length is 1.8 to 12 metres. Panel lengths up to 17 metres are available. Panels less than 1.8 metres long can be supplied and are subject to an extra charge. These panels cannot be end lapped.

### Materials

#### Steel Substrate

- S220GD+ZA hot-dip zinc/aluminium Galfan coated metal to BS EN10214: 1992.
- Standard external sheet thickness 0.63mm, standard internal sheet thickness 0.4mm.

#### Coatings - External Sheet

- Kingspan XL Forté TM. Colour is Merlin Grey.
- Reverse side of sheet coated with a light grey polyester coating.

#### Coatings - Internal Liner

- Standard polyester coating developed for use for the internal lining of insulated panels. Standard colour is "bright white" with an easily cleaned surface.
- Foodsafe hygienic coating developed for use where the liner is exposed to foodstuffs and is regularly cleaned. Colour white.
- Kingspan XL Forté TM coating for internal high humidity environments. Colour white.
- Reverse side of sheet coated with a light grey polyester coating.

### Insulation Core

Polyisocyanurate (PIR): EcoSafe with zero Ozone Depletion Potential (zero ODP). LPCB insurer approved FIREsafe certified product.

### Factory Applied Side Joint Seal

All side joints have a factory-applied seal fitted into the groove to automatically seal the joint between panels.

### Fire

The steel outer and inner facings of the Karrier Panel have a Class 1 surface spread of flame to BS476 - 7: 1987, and are Class 0, as defined by Building Regulations.

### Biological

Benchmark insulated panels are normally immune to attack from mould, fungi, mildew and vermin. No urea formaldehyde is used in the construction, and the panels are not considered deleterious.

# Product Data Sheet

## SYSTEM WEIGHT

Benchmark Zinc facade system has an overall typical weight depending upon Karrier Panel thickness and according to the Zinc panel face width;

### Shingle;

Karrier Panel Thickness (mm)	60	70	80	100	120	140	150
Weight (Kg/m <sup>2</sup> )*	13.1	13.5	13.9	14.7	15.5	16.2	16.7

### Interlocking Plank (Centre to Centre Distance 200mm\*\*);

Karrier Panel Thickness (mm)	60	70	80	100	120	140	150
Weight (Kg/m <sup>2</sup> )*	25.7	26.1	26.5	27.3	28.1	28.8	29.3

\*Based on complete system - cassette, attachment and panel weight inclusive. For Project Specific weights, please contact Benchmark Technical Services Department.

\*\* Please note the weights above are the maximum weights for the standard height of the interlocking plank cassette as stated. Increased centre to centre heights will reduce the overall typical weights. Please contact Benchmark Technical Services should further information be required.

## SYSTEM ATTACHMENT

### Shingle

The shingle cassettes interlock with one another. Stainless steel shingle clips hook on to the shingle returned edge and are then riveted to the face of the Benchmark Karrier Panel. Sealant tape is used to isolate the clip from the face of the Karrier panel and minimise rattle.

### Interlocking Plank

Interlocking Plank Cassettes are fixed directly back to the Benchmark Karrier panel with rivets. Sealant tape is used to isolate the cassette from the face of the Karrier Panel.

## SYSTEM PERFORMANCE

### Thermal Insulation

Thermal Transmittance (U value) calculated in compliance with Building Regulations Approved Documents L2A & L2B (England & Wales), Technical Handbooks Domestic and Non-Domestic Sections 6 (Scotland), Part F2 (Northern Ireland) and Part L (Republic of Ireland - based on the Overall Heat Loss Method).

Karrier Panel Thickness (mm)	60	70	80	100	120	140	150
U-value (W/m <sup>2</sup> K)	0.35	0.30	0.27	0.21	0.18	0.15	0.135

### Acoustics

Benchmark Zinc facade system has a single figure weighted sound reduction  $R_w = 24\text{dB}$ .

### Sound Reduction Index (SRI)

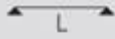

Frequency (Hz)	63	125	250	500	1k	2k	4k	8k
SRI (dB)	20	15	17	23	18	25	40	46

# Product Data Sheet

## STRUCTURAL

### LOAD/SPAN TABLE

(To be checked against unfactored design wind-loads)

Span Condition	Core Thickness (mm)	Load Type	Uniformly Distributed Loads (kN/m <sup>2</sup> )											
			Span L in Metres											
			2.0	2.2	2.4	2.6	2.8	3.0	3.2	3.4	3.6	3.8	4.0	
<b>Single Span</b> Outer Sheet 0.63mm steel Inner Sheet 0.4mm steel 	60	Pressure	4.05	3.35	2.89	2.42	2.11	1.79	1.57	1.35	1.19	1.03	0.91	
		Suction	3.63	2.95	2.52	2.08	1.79	1.49	1.29	1.08	0.94	0.79	0.69	
	70	Pressure	4.83	4.12	3.58	3.03	2.66	2.28	2.01	1.74	1.55	1.35	1.21	
		Suction	4.43	3.60	3.09	2.58	2.26	1.94	1.70	1.46	1.28	1.10	0.97	
	80	Pressure	5.39	4.85	4.26	3.64	3.21	2.78	2.47	2.15	1.92	1.69	1.52	
		Suction	4.98	4.03	3.46	2.88	2.53	2.17	1.93	1.69	1.52	1.35	1.23	
	100	Pressure	5.39	4.85	4.48	4.10	3.83	3.56	3.35	2.96	2.67	2.37	2.15	
		Suction	5.36	4.78	4.10	3.42	3.00	2.57	2.29	2.00	1.80	1.60	1.46	
	<b>Double Span</b> Outer Sheet 0.63mm steel Inner Sheet 0.4mm steel 	60	Pressure	4.64	4.11	3.67	3.22	2.76	2.29	1.98	1.66	1.46	1.26	1.13
			Suction	3.93	3.15	2.71	2.26	1.98	1.69	1.51	1.32	1.19	1.06	0.96
70		Pressure	5.05	4.54	4.19	3.84	3.30	2.75	2.36	1.97	1.73	1.48	1.32	
		Suction	4.49	3.60	3.09	2.58	2.26	1.94	1.73	1.51	1.36	1.21	1.10	
80		Pressure	5.39	4.85	4.48	4.10	3.67	3.23	2.77	2.30	2.01	1.71	1.52	
		Suction	4.98	4.03	3.46	2.88	2.53	2.17	1.93	1.69	1.52	1.35	1.23	
100		Pressure	5.39	4.85	4.48	4.10	3.83	3.56	3.28	2.99	2.60	2.20	1.94	
		Suction	5.36	4.78	4.10	3.42	3.00	2.57	2.29	2.00	1.80	1.60	1.46	

#### Notes:

- Values have been calculated using the limit state method in the "European Recommendations for the Design of Sandwich Panels" (ECCS document No. 115 2001), taking imposed loads, temperature and creep into account.
- For each value individual and combined load cases with appropriate load factors and temperatures have been considered. These are detailed under "Structural Performance" in Building Design Section.
- The table is for dark coloured panels.
- The following deflection limits have been used:  
Pressure Loading L/100  
Suction Loading L/100
- For intermediate values linear interpolation may be used.
- The actual wind suction load resisted by the panel is dependent upon the number of fasteners used and material of the rail. The fastener calculation should be carried out in accordance with the appropriate standard. For further advice please contact Kingspan envirocare Technical Services.
- The allowable tolerance between bearing planes of adjacent supports is L/600, where L is the distance between supports.
- Load span tables for spans outside of those shown are available from the Benchmark Technical Services department.

## PACKING AND STORAGE

### Zinc Cassettes

The cassettes are packed on a pallet with cardboard on top. Cardboard is also placed between each set of cassettes. A completed pack is wrapped in cardboard and wood is fixed around the top and sides. Packaging is completed by shrink wrapping the entire pallet in polythene.

The zinc cassettes must be stored in a well-ventilated, sheltered, and dry area. The temperature variation should be kept to a minimum to avoid condensation build-up. The cassettes should be separated from the ground (by means of the pallet) to allow sufficient air space for correct ventilation of the zinc. The pallets should allow the zinc cassettes to be stored flat to reduce the risk of deformation. Pallets should be stored on level ground and not stacked. Cassettes should be stored as close as possible to the building where they are to be installed.

Benchmark Zinc is supplied with a protective film. The film is designed to protect the zinc from dust and dirt which are common on all construction sites, however does not protect the zinc from physical impacts. The film must be removed within 2 months of the zinc being installed. If no works are to be carried out within the vicinity of the finished zinc work it is highly recommended that the film is removed as soon as possible as the film is not UV resistant and residues of the adhesives may remain on the metal.

### Karrier Panel

The Benchmark Karrier Panels are delivered to site in polythene shrink-wrapped pallets and separated by paper. Panels are stacked horizontally. Removable hot melt adhesive is laid between each panel. The top, bottom, sides and ends are protected with polystyrene and timber packing and the entire pack is wrapped in polythene. The number of panels in each pack depends on panel length and weight. Typical pack height is 1100mm. Maximum pack weight 1500kg.

Panel Thickness (mm)	60	70	80	100	120	140	150
Panels per pack	18	14	12	11	9	7	7

### Sea Freight

Fully timber crated packs are available on projects requiring delivery by sea freight shipping, at additional cost. Alternatively, steel containers can be used. Special loading charges apply.

### DELIVERY

All deliveries (unless indicated otherwise) are by road transport to project site. Off loading is the responsibility of the client.

### SITE INSTALLATION PROCEDURE

Site assembly instructions are available from the Kingspan Field Service Department.

### HANDLING

Benchmark Zinc is a non-painted product with a natural metal finish. The surface is susceptible to staining, marking and/or scratching during the construction process. It should be noted that most stains are very difficult to remove so extra care must be taken when handling the cassettes. The cassettes should be lifted from the stack, rather than dragged across it. Individual cassettes should be carried on edge and handled with care. Avoid dropping the zinc cassettes. Any deformity to the cassettes can cause damage to the appearance of the zinc and could also potentially damage the structural integrity of the zinc as cracks may occur in these damaged places over time. Avoid dragging or sliding the cassettes over rough surfaces or across other cassettes within the stack, they must be lifted.

# Product Data Sheet

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The rough surfaces may scratch or damage the zinc which could develop into cracks during installation, due to the effects of expansion and contraction of the metal.

When handling the zinc always wear gloves and long sleeved shirt. The acidic nature of perspiration will leave marks on the zinc surface that will heal over time but will remain visible for a while and could have an adverse effect on the appearance of the zinc. Ensure that the zinc is not handled in an area with great temperature variations. Temperature variations can cause condensation build-up, which in turn will cause zinc hydroxide (white rust) to form on the zinc.

In the event that any cassettes do form white rust, please contact Benchmark Technical Services to seek advice.

The rain will drain a percentage of the dust deposits off the façade system. It is recommended to limit the cleaning of the zinc material to specific potential problem areas to avoid any deterioration of the patina. In order to clean the Zinc, it is recommended to use warm water (no high pressure) with mild, thinned down detergent and gently rubbing the panels in the same direction as the grain, using a clean cotton cloth. Make sure to rinse off the panels in order to remove any detergent residue. Due to the “self healing” nature of zinc, fingerprints and scratches will be obscured by the formation of the patina over time. It is recommended to let them heal on their own.

## **QUALITY & DURABILITY**

Benchmark components are manufactured from the highest quality materials to rigorous quality control standards, complying with ISO 9001:2000 standards, ensuring long-term reliability and service life.

## **GUARANTEES & WARRANTIES**

Benchmark will provide external coating and product guarantees on an individual project basis.