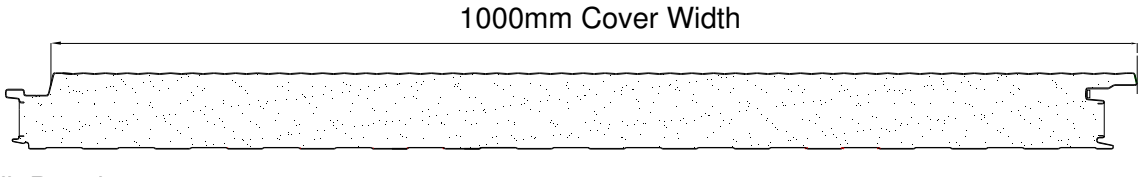
## 6. Product Data Sheet

## Kingspan Thermastone – Complete Wall & Façade System

### Application

The Kingspan Thermastone system is an insulated liner panel with a ceramic granite large format panel facade.




**PANEL DATA**

**Dimensions and Weight**

| Core Thickness (mm) | 45 | 60 | 70 | 80 | 100 |
|---|---|---|---|---|---|
| Weight kg/m$^2$ 0.63 / 0.4 steel | 11.5 | 12.1 | 12.5 | 12.9 | 13.7 |

## Product Tolerances

| | | |
|---|---|---|
| Length | –5mm | +5mm |
| Width | –2mm | +2mm |
| Thickness | –2mm | +2mm |
| End Squareness | –3mm | +3mm |
| Flatness (per metre) | –2mm | +2mm |

## Available Lengths

- Standard lengths 1.8 to 12 metres. Panels less than 1.8 m 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 XL200. 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.
- Aquasafe coating for internal high humidity environments. Colour white.
- Reverse side of sheet coated with a light grey polyester coating.

### Insulation Core

Polyisocyanurate (PIR): with zero ozone depletion (Zero ODP). Available in LPCB insurer approved ***FIRE*safe** certified product range, please contact **Kingspan Enviro*care* Technical Services**

### Factory Applied Side Joint Seal

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

## Performance

### Thermal Insulation

Thermastone panels have a Thermal Transmittance (U value), calculated using the method required by the Building Regulations Part L2 (England & Wales) and Building Standards (Scotland), of:

| Core Thickness (mm) | 45 | 60 | 70 | 80 | 100 |
|---|---|---|---|---|---|
| U Value (W/m$^2$K) | 0.46 | 0.38 | 0.35 | 0.30 | 0.23 |

### Fire

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

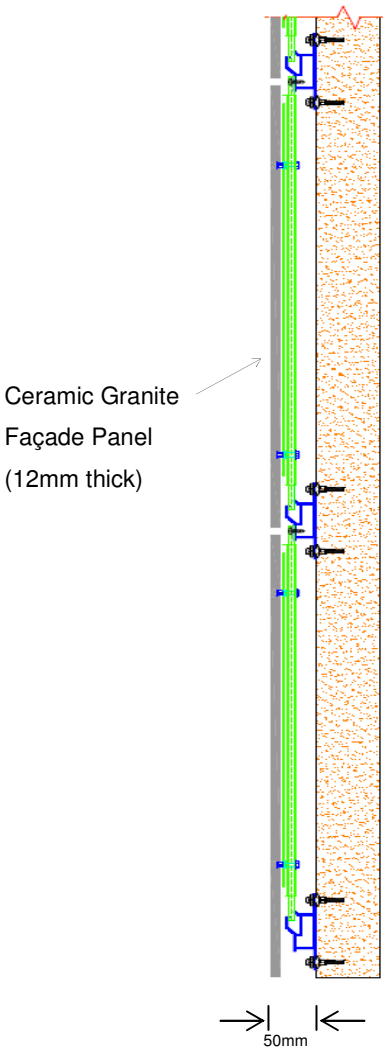
### Acoustics

All Thermastone panels have a single figure weighted sound reduction Rw = 24dB.

### Sound Reduction Index (SRI)

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

## FAÇADE PANEL DATA




**Kingspan Thermastone Complete Wall & Façade System**

## Dimensions and Weight

### Dimensions

- Typical module overall nominal dimensions: 1206mm length x 606mm height
- Typical façade panel actual dimensions: 1198mm length x 598mm height (i.e.8mm joint)
- Façade panel typically 12mm thick.
- Façade panel hanging rail with tile giving typical depth of 50mm.

### Weight

Typically 27kg/m2

## Product Tolerances

Thickness, side straightness, rectangularity and surface flatness are all in accord with International Standard BS-EN 14411-G

## Materials

**Ceramic Granite Façade Panel**

Ceramic granite composed of selected refined clays, quartz, feldspars and metal oxides vitrified under high temperature and pressure, with mesh reinforcement to rear face.

**Aluminium secondary rail system**

Extruded aluminium secondary rail system to BS1474 in 6063/T6 grade alloy. Coated black.

**Attachment**

Extruded aluminium straps to BS1474 in 6063/T6 grade alloy secured to ceramic granite faced panel using undercut stainless steel expanding anchors. Straps secured to aluminium secondary rail system using self drilling / self tapping stainless steel site coated black screws.

## Performance

**Fire**

The ceramic granite façade panels have Class 1 surface spread of flame to BS476: Part 7: 1987, and are Class 0, as defined by Building Regulations.

**Biological**

Kingspan 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.

## Quality and Durability

Kingspan Insulated Panels are manufactured from the highest quality materials, using state of the art production equipment to rigorous quality control standards, complying with ISO 9001:2000 standard, ensuring long-term reliability and service life.

## Guarantees and Warranties

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

## Packing

### Standard Packing

Kingspan insulated Thermastone insulation 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.

| Core Thickness (mm) | 45 | 60 | 70 | 80 | 100 |
|---|---|---|---|---|---|
| Panels per pack | 18 | 14 | 12 | 11 | 10 |

Kingspan Thermastone panels are stacked vertically, and delivered on timber crates typically measuring 2500 mm by 1200 mm. Each crate weighs approximately 750 kg. The entire pack is wrapped in polythene.

### 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

## Structural

Permissible load/span table (to be compared to unfactored uniformly distributed loads):

| SPAN CONDITION | Core Thickness (mm) | Load Type | Uniformly Distributed Loads (kN/m²) 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SINGLE SPAN** | 45 | Pressure | 2.32 | 1.96 | 1.66 | 1.42 | 1.22 | 1.05 | 0.92 | 0.80 | 0.70 | 0.62 | 0.55 |
| | | Suction | 2.32 | 1.96 | 1.66 | 1.42 | 1.22 | 1.05 | 0.92 | 0.80 | 0.70 | 0.62 | 0.55 |
| Outer Sheet | 60 | Pressure | 3.20 | 2.91 | 2.51 | 2.17 | 1.88 | 1.64 | 1.43 | 1.27 | 1.12 | 0.99 | 0.89 |
| 0.63mm steel | | Suction | 3.11 | 2.57 | 2.16 | 1.84 | 1.59 | 1.38 | 1.22 | 1.08 | 0.96 | 0.86 | 0.78 |
| Inner Sheet | 70 | Pressure | 3.73 | 3.39 | 3.10 | 2.69 | 2.35 | 2.06 | 1.82 | 1.61 | 1.43 | 1.27 | 1.14 |
| 0.4mm steel | | Suction | 3.36 | 2.78 | 2.33 | 2.00 | 1.71 | 1.49 | 1.31 | 1.16 | 1.04 | 0.93 | 0.84 |
| | 80 | Pressure | 4.27 | 3.88 | 3.56 | 3.24 | 2.84 | 2.50 | 2.22 | 1.97 | 1.75 | 1.57 | 1.41 |
| | | Suction | 3.46 | 2.86 | 2.40 | 2.05 | 1.76 | 1.54 | 1.35 | 1.20 | 1.07 | 0.96 | 0.86 |
| L | 100 | Pressure | 5.44 | 4.99 | 4.61 | 4.35 | 3.86 | 3.39 | 3.04 | 2.73 | 2.45 | 2.22 | 2.00 |
| | | Suction | 3.57 | 2.94 | 2.47 | 2.13 | 1.84 | 1.58 | 1.39 | 1.23 | 1.10 | 0.99 | 0.89 |
| **DOUBLE SPAN** | 45 | Pressure | 1.90 | 1.71 | 1.57 | 1.44 | 1.33 | 1.24 | 1.16 | 1.10 | 1.03 | 0.96 | 0.87 |
| | | Suction | 1.76 | 1.60 | 1.46 | 1.35 | 1.25 | 1.14 | 1.00 | 0.89 | 0.79 | 0.71 | 0.64 |
| Outer Sheet | 60 | Pressure | 2.59 | 2.34 | 2.13 | 1.95 | 1.81 | 1.68 | 1.57 | 1.48 | 1.39 | 1.32 | 1.25 |
| 0.63mm steel | | Suction | 2.42 | 2.19 | 2.00 | 1.84 | 1.59 | 1.38 | 1.22 | 1.08 | 0.96 | 0.86 | 0.78 |
| Inner Sheet | 70 | Pressure | 3.06 | 2.76 | 2.51 | 2.30 | 2.13 | 1.98 | 1.85 | 1.74 | 1.64 | 1.45 | 1.29 |
| 0.4mm steel | | Suction | 2.88 | 2.60 | 2.33 | 1.99 | 1.71 | 1.49 | 1.31 | 1.16 | 1.04 | 0.93 | 0.84 |
| | 80 | Pressure | 3.54 | 3.19 | 2.90 | 2.66 | 2.45 | 2.28 | 2.13 | 2.00 | 1.88 | 1.78 | 1.69 |
| | | Suction | 3.34 | 2.86 | 2.40 | 2.05 | 1.76 | 1.54 | 1.35 | 1.20 | 1.07 | 0.96 | 0.86 |
| L L | 100 | Pressure | 4.61 | 4.10 | 3.69 | 3.36 | 3.06 | 2.84 | 2.63 | 2.42 | 2.08 | 1.81 | 1.60 |
| | | Suction | 3.50 | 3.02 | 2.54 | 2.18 | 1.88 | 1.65 | 1.46 | 1.28 | 1.15 | 1.06 | 0.94 |

Notes:

1. Values have been calculated using the limit state method described in the "European Recommendations for the Design of Sandwich Panels" (ECCS document No.115 2001), taking imposed loads, temperature and creep into account.
2. 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.
3. The table is for dark coloured panels.
4. The following deflection limits have been used:

   Pressure Loading: L/150
   Suction Loading: L/150
5. For intermediate values linear interpolation may be used.
6. The actual wind suction load resisted by the panel is dependant upon the number of fasteners used and the material of the rail.

   The fastener calculation should be carried out in accordance with the appropriate standard, a minimum of two fasteners per support is required. For further advice please contact Kingspan Envirocare
7. The allowable steelwork tolerance is for curtain walling and is as described in CWCT Technical Note 21, "Tolerance, Fit & Appearance of Cladding".
8. Load span tables for spans outside of those shown are available from Kingspan Envirocare.