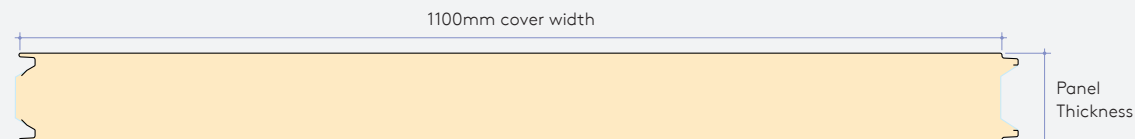


# Controlled Environments Wall Application (KS1100 CS) Data Sheet

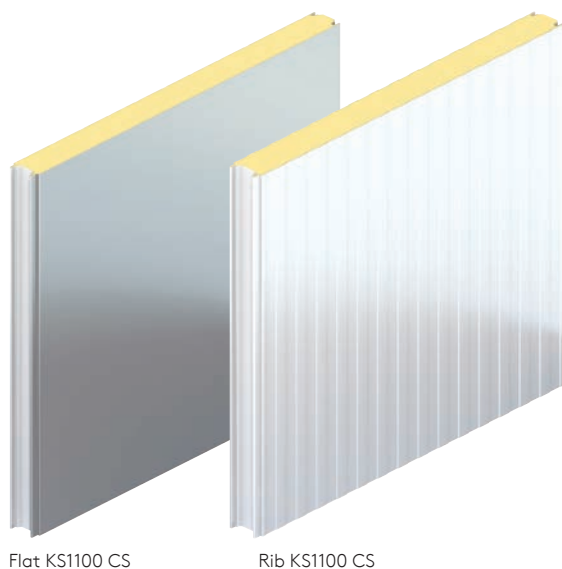


## Product overview

Kingspan controlled environment panel systems are designed for use within temperature controlled and hygiene safe environments such as food processing, freezers, cold/chill store and clean rooms for the bio-technology and pharmaceutical industries. The controlled environment panel range is available in Flat and Ribbed profiles.



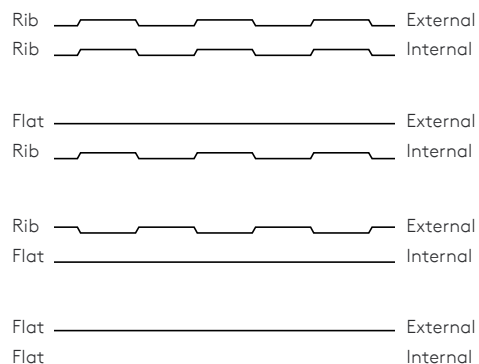
Note: Dimensions are nominal. Actual dimensions will vary due to manufacturing tolerances. Precise dimensions must always be measured from actual samples. All dimensions in millimetres.



## Application

These FIREsafe, hygienic and fibre-free insulated panel systems are suitable for internal and external walls and ceilings, including internal 'box within a box' applications.

## Standard External and Internal Facing Combinations



## Declared Thermal Performance

Declared Thermal Conductivity ( $\lambda$ Value) 0.022 W/m.K @23°C

Panel Nominal Thickness (mm)	Product R-Value (m <sup>2</sup> K/W) at 23°C	Product U-Value (W/m <sup>2</sup> K) at 23°C
50	2.23	0.45
75	3.43	0.29
100	4.60	0.22
125	5.76	0.17
150	6.92	0.14
200	9.25	0.11

Declared Product R-Value is calculated in accordance with AS/NZS 4859.1:2018 as required for compliance to the National Construction Code 2019.

## Panel Properties

A - Core Thickness (mm)	50	75	100	125	150	200
Weight kg/m <sup>2</sup> 0.5 / 0.5 Steel	10.0	11.0	12.0	13.0	14.0	16.0

# Controlled Environments Wall Application (KS1100 CS) Data Sheet



## Thermal Performance

Declared Thermal Conductivity ( $\lambda$ Value) 0.022 W/m.K @23°C

Panel Nominal Thickness (mm)	Total R-Value (m <sup>2</sup> K/W)	
	Heat Flow Out (Winter)	Heat Flow In (Summer)
50	2.49	2.30
75	3.75	3.46
100	4.96	4.58
125	6.18	5.70
150	7.39	6.82
200	9.82	9.05

The R-Values shown are Total R-Values for the building element as required by the Energy Provisions of the National Construction Code, calculated in accordance with AS/NZS 4859.2 2018. Controlled Environments panels is manufactured, tested and packaged in conformance with AS/NZS 4859.1:2018

## Fire Performance

When tested to AS/NZS 1530.3, Kingspan panels achieved the fire hazard results.

Ignitability Index	0
Spread of Flame Index (SFI)	0
Heat Evolved Index	0
Smoke Development Index (SDI)	2

The Kingspan Controlled Environments panels meets the requirements of the BCA Specification C1.10 AS 5637.1 as a Group 2 product, when tested to ISO 9705.

## FM Panel System Approval

Kingspan Controlled Environment Panel systems are available with FM Global FMRC 4880 Approved Unlimited Height and FM Global 4881 Approved Class 1 Exterior Wall System Certifications.

## Fire Credential

KS1100 CS Panels Fire Test Results

AS1530.4/BS476-22: 1987 Clause 5 (Walls)\*

Thickness (mm)	Integrity (mins)	Insulation (mins)	Kingspan model specification number
100	195	31	KSFW 04
125	195	31	KSFW 04
150	195	31	KSFW 04
200	240	64	KSFW 07

Notes: Specifications available on request.

\* Fire tests on building materials and structures.

Methods for determination of the fire resistance of non-loadbearing elements of construction Clause 5: Determination of the fire resistance of partitions.

## Biological

Kingspan Controlled Environment 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.

## Acoustic Performance

For sound transmission reduction, Kingspan panels typically have a single figure weighted sound reduction index (SRI) of  $R_w = 24$ dB. For specific acoustic solutions contact Kingspan Technical Services.

Frequency (Hz)	SRI (dB)
63	13
125	17
250	21
500	26
1000	26
2000	26
4000	42
8000	52
$R_w$	24

## Available Lengths

Standard Lengths	2.0m – 13.7m
Longer Lengths*	13.7m – 16.1m
Shorter Lengths*	0.5m – 1.99m
Transported by Rail	12.0m
Export of Australia	11.8m

Notes: \* Additional costs and transport restrictions will apply for non-standard lengths.

# Controlled Environments Wall Application (KS1100 CS) Data Sheet



## Internal Wall Spans

Core Thickness (mm)	50	75	100	125	150	200
Wall Max. Height (m)*	6.2	8.2	10.0	11.6	13.1	15.9

\* Typical spans for internal walls with no temperature difference across the panels. For other temperatures or internal conditions contact Kingspan. Imposed loads are in accordance with the requirements of AS/NZS 1170.

## Internal Wall and Ceiling Spans

### Internal wall spans are based on the following:

Pressure or Suction Load of 0.3kN/m<sup>2</sup>. Temperature difference across the panel is 0°. Deflection limit L/100 short term.

### Internal ceiling spans are based on the following:

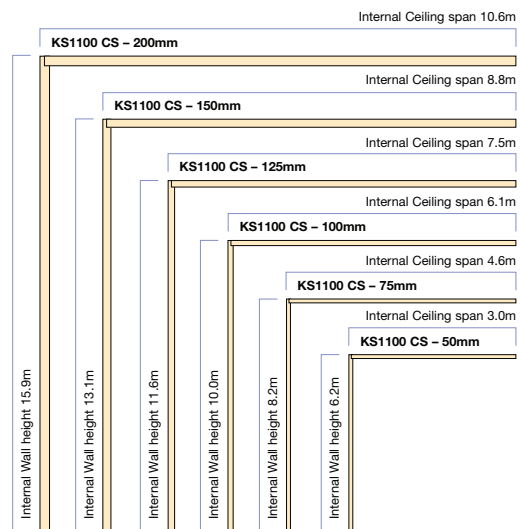
Imposed load of either 0.25kN/m<sup>2</sup> or a 1.4kN concentrated load as per ASI 170.1:2002. Imposed loads are taken as short term only. Temperature difference across the panel is 0°. Deflection limit L/200 short term and L/100 long term.

## External Wall Spans

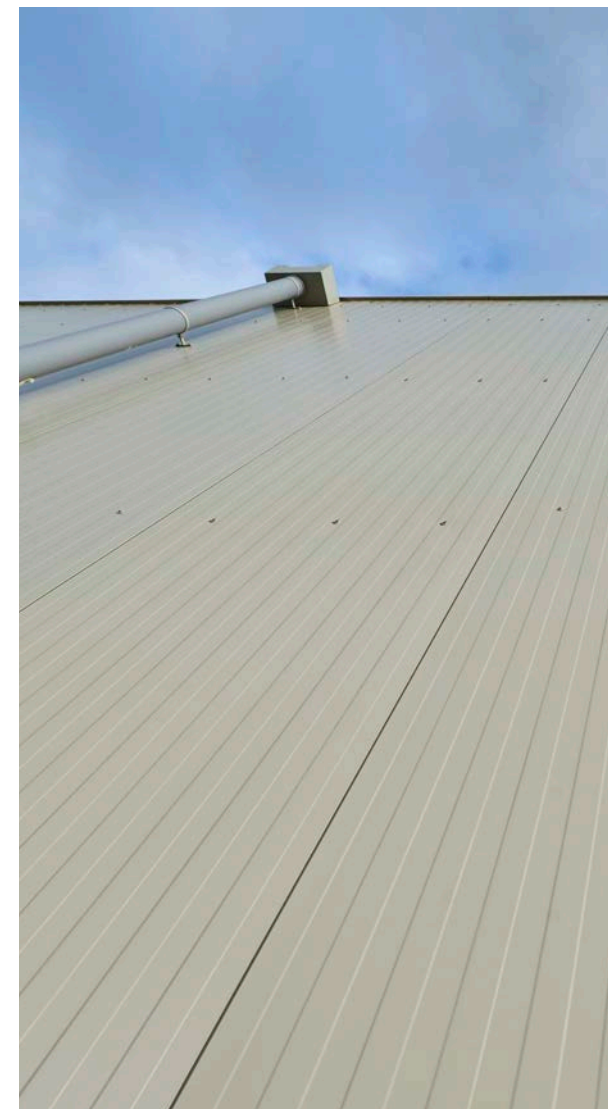
Please contact Kingspan Technical service

### General

Spans have been calculated using methods described in AS1170 as well as EN14509:2006 – 'Self-supporting double skin metal faced insulating panels - Factory made products'. For all other temperature differential situations, please contact Kingspan Technical Services.



Please note that for orders outside of Australia maximum lengths are 11.8m



## Accreditations

