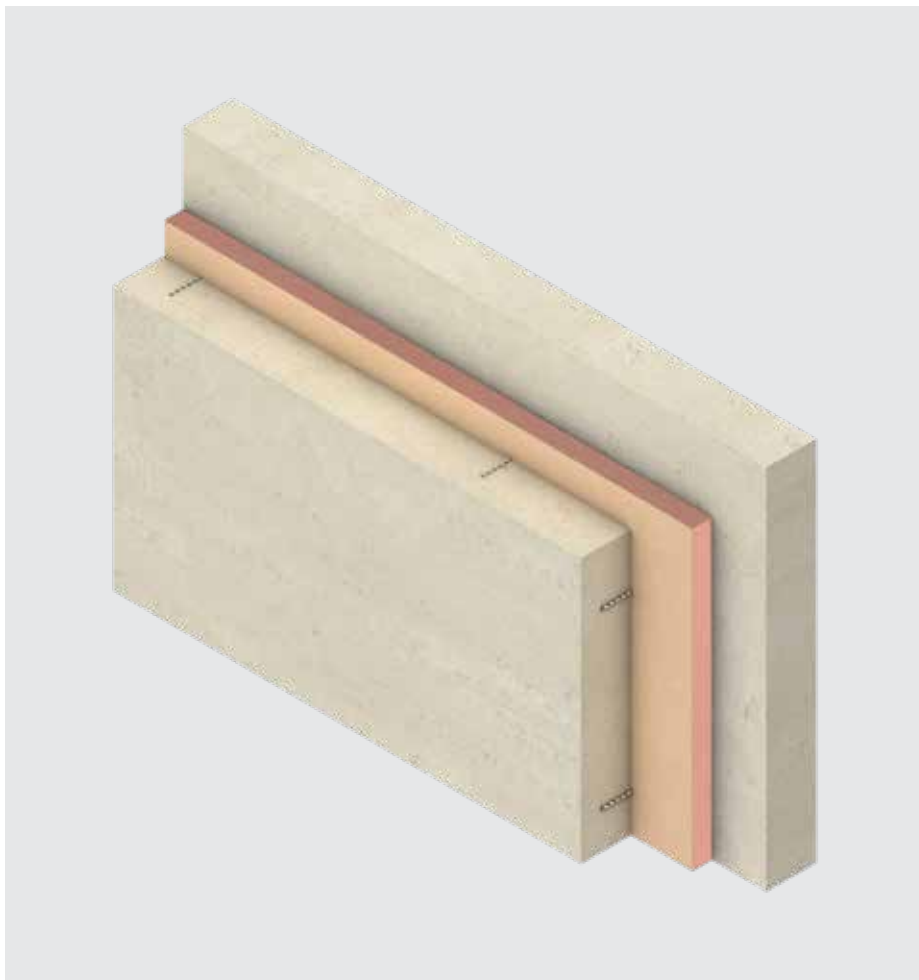


Insulation



Kooltherm® K20 Concrete Sandwich Board

High performance insulation for concrete sandwich wall systems



- Premium performance rigid thermoset insulation
- R-value of R1.20 for 25mm
- Higher R-value per mm than any commonly used insulation
- Low smoke development
- ASTM E84 rating of 5/25 (flame/smoke)
- Unaffected by air infiltration
- Resistant to the passage of water vapor
- Easy to handle and install
- Manufactured with a blowing agent that has zero ODP, low GWP, HCFC and CFC free

Fibre-free
Core



Kingspan®

Product Details

Description

Kingspan Kooltherm® K20 Concrete Sandwich Board is a premium performance insulation product, used for concrete insulated sandwich wall systems.

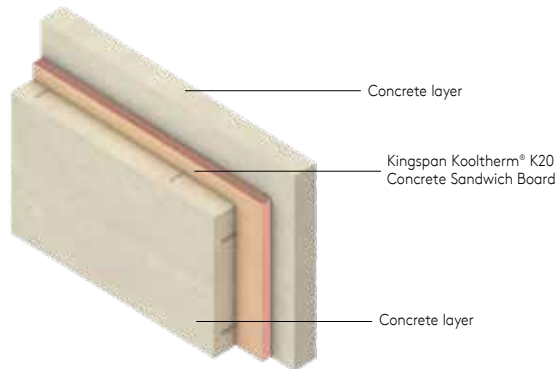


Figure 1

The Facings

Kingspan Kooltherm® K20 Concrete Sandwich Board has a glass tissue based facing, autohesively bonded to the insulation core during manufacture.

The Core

The core of Kingspan Kooltherm® K20 Concrete Sandwich Board is a premium performance rigid thermoset fiber-free phenolic insulant manufactured with a blowing agent that has zero Ozone Depletion Potential (ODP) and low Global Warming Potential (GWP).



Standard Dimensions

Kingspan Kooltherm® K20 Concrete Sandwich Board is available in the following standard size(s):

Nominal Dimension	Availability (mm)
Width	1,200
Length	2,270
Insulant Thickness	Refer to Product Data table

Durability

If correctly installed, Kingspan Kooltherm® K20 Concrete Sandwich Board can have an indefinite life. Its durability depends on the supporting structure and the conditions of its use.

Resistance to Solvents, Fungi & Pests

The insulation core is resistant to short-term contact with petroleum and with most dilute acids, alkalis and mineral oils.

However, it is recommended that any spills be cleaned off fully before the boards are installed. Ensure that safe methods of cleaning are used, as recommended by the suppliers of the spilled liquid. The insulation core is not resistant to some solvent-based adhesive systems, particularly those containing methyl ethyl ketone. Adhesives containing such solvents should not be used in association with this product. Damaged boards or boards that have been in contact with harsh solvents or acids should not be used.

The insulation core and facings used in the manufacture of Kingspan Kooltherm® K20 Concrete Sandwich Board resist attack by mold and microbial growth, and do not provide any food value to pests.

Standards & Approvals

Kingspan Kooltherm® K20 Concrete Sandwich Board is manufactured to the highest standards under a management system certified to ISO 9001: 2015 (Quality Management Systems), ISO 14001: 2015 (Environmental Management Systems), ISO 45001:2018 (Occupational Health & Safety Management Systems), and ISO 50001: 2018 (Energy Management Systems).

Product Data

Property	Test Method	Result
Nominal Thickness (mm)		Stock* 25
Standard Dimensions Width (mm) Length (mm)		1,200 2,270
Compressive Strength, Min. (kPa)	AS 2498.3	100 at 10% compression
Water Absorption, Max. (% by volume)	ASTM C 209	1.21
Density, Min. (kg/m ³)	ASTM 1622	32
Closed Cell Content (% of cells closed)	ASTM D 6226	95
Air Permeance (L/s/m ²)	ASTM E 2178	0.001
Water Vapor Permeance, Max. (µg/N.s) ¹	ASTM E 96	0.045

¹ Permeance shown is for 25mm thick board. Permeance typically decreases as board thickness increases.

* Contact Kingspan Insulation for available non-stock sizes.

Product Details

Fire Performance

Test	Test Method	Result
Surface Burning Characteristics	ASTM E84 / UL 723	Flame Spread Index: 5
		Smoke Developed Index: 25
Ignitability, Flame spread, Heat release, Smoke release	AS 1530.3	Spread of Flame Index: 0
		Smoke Development ≤ 3
Cone Calorimeter*	ISO 5660.1	Mean Peak Heat Release: 70.5 kW/m ²
		Mean Total Heat Release Rate: 29.0 MJ/m ²
Flame Propagation Characteristics*	AS 2122.1	Flame Duration: 0.73 s
		Eighth Value: 0.78 s
		Median Mass Retained: 94.95%
		Eighth Value: 94.13%

*Applies to the foam core only

Further details of the fire performance of Kingspan Insulation products may be obtained from Kingspan Insulation.

Thermal Resistance

The R-values detailed below are quoted in accordance with ASTM C518 (Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus).

Thermal resistance (R-value) varies with thickness and is calculated by dividing the thickness of the board.

Nominal Insulant Thickness	
Product Thickness	R-value NCC 2016
25 mm	R1.20
30 mm	R1.40
40 mm	R1.90
45 mm	R2.25
50 mm	R2.50
60 mm	R3.00
70 mm	R3.50
80 mm	R4.00
90 mm	R4.50
100 mm	R5.00

Design Considerations

Sustainability & Responsibility

Kingspan Insulation has a long-term commitment to sustainability and responsibility.

A report covering the sustainability and responsibility of Kingspan Insulation Ltd's British operations is available at www.kingspan.com/esea/en-ph/planet-passionate

Specification Clause

Kingspan Kooltherm® K20 Concrete Insulation Board should be described in specifications as:

The wall insulation shall be Kingspan Kooltherm® K20 Concrete Sandwich Board ____ mm thick: comprising a premium performance rigid thermoset insulation core faced on both sides with a glass tissue based facing. The product shall be manufactured: with a blowing agent that has zero Ozone Depletion Potential (ODP) and low Global Warming Potential (GWP); under a management system certified to ISO 9001: 2015, ISO 14001: 2015, ISO 45001:2018 and ISO 50001:2018; by Kingspan Insulation Limited; and installed in accordance with the instructions issued by them.

General

Cutting

- Cutting should be carried out either by using a fine toothed saw, or by scoring with a sharp knife, snapping the board over a straight edge and then cutting the facing on the other side.
- Ensure accurate trimming to achieve close butting joints and continuity of insulation.

Daily Working Practice

- At the completion of each day's work, or whenever work is interrupted for extended periods of time, board edges and joints should be protected from inclement weather.

Packaging & Storage

- The polyethylene packaging of Kingspan Insulation products, which is recyclable, should not be considered adequate for outdoor protection.
- Ideally, boards should be stored inside a building. If, however, outside storage cannot be avoided, then the boards should be stacked clear of the ground and covered with an opaque polyethylene sheet or weatherproof tarp. Boards that have been allowed to get wet should not be used.

Health & Safety

- Kingspan Insulation products are chemically inert and safe to use.
- A Safety Data Sheet for this product is available from the Kingspan Insulation website.

Warning – do not stand on or otherwise support your weight on this product unless it is fully supported by a load bearing surface.

Contact Details

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Kingspan Insulation Pty. Ltd. reserves the right to amend product specifications without prior notice. The information, technical details and fixing instructions etc. included in this literature are given in good faith and apply to uses described. Recommendations for use should be verified as to the suitability and compliance with actual requirements, specifications and any applicable laws and regulations. For other applications or conditions of use, Kingspan Insulation offers a Technical Advisory Service the advice of which should be sought for uses of Kingspan Insulation products that are not specifically described herein. Please check that your copy of the literature is current by contacting us or visiting www.kingspaninsulation.asia

Kingspan Insulation Ltd is not associated with, and its products have not necessarily been tested by, the GREENGUARD Environmental Institute.

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