Kooltherm® K8 Cavity Board
PARTIAL FILL CAVITY WALL INSULATION

- Premium performance rigid thermoset insulation
- R-value of 16 on 2 in
- Higher R-value per inch than any commonly used insulation
- Negligible smoke-developed index
- NFPA 285 compliant
- ASTM E 84 rating of 25/20 (flame–smoke)
- Clear cavity is maintained – resists moisture penetration
- Low emissivity foil facings significantly increase the thermal resistance of the cavity
- Unaffected by air infiltration
- Easy to handle and install
- Manufactured with a blowing agent that has zero ODP, low GWP, HCFC and CFC free
Typical Constructions

Introduction
Kingspan Kooltherm® K8 Cavity Board is a premium performance insulation product, with a fiber-free rigid thermoset phenolic core, faced on both sides with a low emissivity composite foil facing which is used for insulation in partially filled cavity walls.

Stucco Coating Over Block

Internal Finish – Blockwork

Brick Outer / Block Inner

Internal Finish – Blockwork

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Residual cavity
(see ‘Design Considerations’)
Product Details

The Facings

*Kingspan Kooltherm® K8 Cavity Board* is faced on both sides with a low emissivity composite foil, adhesively bonded to the insulation core during manufacture. This reflective, low emissivity surface improves the thermal resistance of any unventilated cavity adjacent to the board.

The Core

The core of *Kingspan Kooltherm® K8 Cavity 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® K8 Cavity Board* is available in the following standard size(s):

<table>
<thead>
<tr>
<th>Nominal Dimension</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width (in / mm)</td>
<td>47.25 / 1200</td>
</tr>
<tr>
<td>Length (in / mm)</td>
<td>16 / 406.4</td>
</tr>
</tbody>
</table>
| Insulant Thickness| Refer to Kingspan Insulation for current stock and non-stock sizes.

Standards and Approvals


Durability

If correctly installed, *Kingspan Kooltherm® K8 Cavity 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 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® K8 Cavity Board* resist attack by mold and microbial growth and do not provide any food value to pests.

### Product Data

<table>
<thead>
<tr>
<th>Property</th>
<th>Test Method</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Thickness</td>
<td>Made-to-Order</td>
<td></td>
</tr>
<tr>
<td>Standard Dimensions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width (in / mm)</td>
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<td></td>
</tr>
<tr>
<td>Length (in / mm)</td>
<td>16 / 406.4</td>
<td></td>
</tr>
<tr>
<td>Compressive Strength, Min. (psi)</td>
<td>ASTM D 1621</td>
<td>21</td>
</tr>
<tr>
<td>Water Absorption, Max. (% by volume)</td>
<td>ASTM C 209</td>
<td>1.15</td>
</tr>
<tr>
<td>Density, Min. (lb/ft³)</td>
<td>ASTM D 1622</td>
<td>2.0</td>
</tr>
<tr>
<td>Closed Cell Content (% of cells closed)</td>
<td>ASTM D 6226</td>
<td>94.67</td>
</tr>
<tr>
<td>Air Permeance (L/S/m² / (cfm/ft²))</td>
<td>ASTM E 2178</td>
<td>0.002 / 0.000</td>
</tr>
<tr>
<td>Water Vapor Permeance, Max. (perm)</td>
<td>ASTM E 96</td>
<td>0.51</td>
</tr>
</tbody>
</table>

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

### Fire Performance

The rigid thermoset insulation core of *Kingspan Kooltherm® K8 Cavity Board*, when subjected to the ASTM E 84 (Standard Test Method for Surface Burning Characteristics of Building Materials) fire test specified in the table below, has achieved the result shown.

<table>
<thead>
<tr>
<th>Flame Spread</th>
<th>Smoke Developed</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>20</td>
</tr>
</tbody>
</table>

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


Thermal resistance (R–value) varies with thickness and is calculated by dividing the thickness of the board by its thermal conductivity.

<table>
<thead>
<tr>
<th>Insulant Thickness (in)</th>
<th>Insulant Thickness (mm)</th>
<th>Thermal Resistance (R-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.18</td>
<td>30</td>
<td>9.5</td>
</tr>
<tr>
<td>1.38</td>
<td>35</td>
<td>11.0</td>
</tr>
<tr>
<td>1.57</td>
<td>40</td>
<td>12.5</td>
</tr>
<tr>
<td>1.77</td>
<td>45</td>
<td>14.5</td>
</tr>
<tr>
<td>1.97</td>
<td>50</td>
<td>16.0</td>
</tr>
<tr>
<td>2.17</td>
<td>55</td>
<td>17.5</td>
</tr>
<tr>
<td>2.36</td>
<td>60</td>
<td>19.0</td>
</tr>
<tr>
<td>2.56</td>
<td>65</td>
<td>20.5</td>
</tr>
<tr>
<td>2.76</td>
<td>70</td>
<td>22.0</td>
</tr>
<tr>
<td>2.95</td>
<td>75</td>
<td>24.0</td>
</tr>
<tr>
<td>3.15</td>
<td>80</td>
<td>25.5</td>
</tr>
<tr>
<td>3.35</td>
<td>85</td>
<td>27.0</td>
</tr>
<tr>
<td>3.54</td>
<td>90</td>
<td>28.5</td>
</tr>
<tr>
<td>3.74</td>
<td>95</td>
<td>30.0</td>
</tr>
<tr>
<td>3.94</td>
<td>100</td>
<td>31.5</td>
</tr>
<tr>
<td>4.72</td>
<td>120</td>
<td>38.0</td>
</tr>
<tr>
<td>5.91</td>
<td>150</td>
<td>47.5</td>
</tr>
</tbody>
</table>

Refer to Kingspan Insulation for current stock and non-stock sizes.
Design Considerations

Linear Thermal Bridging at Openings
Prevention of thermal bridging should be considered when designing sills, jambs and lintels. An insulated cavity closer e.g. Kingspan Kooltherm® Cavity Closer is available from Kingspan Insulation. Please refer to the literature for these products for further information. This literature is available from the Kingspan Insulation Marketing Department or via the Kingspan Insulation website (see rear cover for details).

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.kingspaninsulation.co.uk/sustainabilityandresponsibility.

Specification Clause
Kingspan Kooltherm® K8 Cavity Board should be described in specifications as:
The cavity wall insulation shall be Kingspan Kooltherm® K8 Cavity Board mm thick: comprising a premium performance rigid thermoset insulation core faced on both sides with a low emissivity composite foil 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 9001:2008, ISO 14001:2004, ISO 50001:2011 and OHSAS 18001:2007; by Kingspan Insulation; and installed in accordance with the instructions issued by them.

Residual Cavity Width
A minimum 1 in. residual cavity width is recommended. A greater residual cavity width may be required dependent on the exposure zone and the type of external finish. Check local code requirements. For further advice please contact the Kingspan Insulation Technical Services Department.
**Sitework**

**Fastening Details**
- *Kingspan Kooltherm® K8 Cavity Board* is normally held in position by the wall ties used to tie the two skins of masonry together. Optional insulation adhesives can be found in TB11. (Refer to local code for best practices and requirements.)

**Excess Mortar**
- After raising each section of inner leaf, before installation of the insulation board, excess mortar should be removed and mortar droppings cleaned from exposed edges of the installed insulation boards.
- Use of a cavity batten or cavity board is recommended to protect board edges and maintain a clear cavity (see Figures 4 & 5).

**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.

**Availability**
- *Kingspan Kooltherm® K8 Cavity Board* is available through specialist insulation distributors throughout the US.

**Packaging and 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 and 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 [www.kingspaninsulation.us](http://www.kingspaninsulation.us)
- Please note that the reflective surfaces on this product are designed to enhance its thermal performance. As such, they will reflect light as well as heat, including ultraviolet light. Therefore, if this product is being installed during very bright or sunny weather, it is advisable to wear UV protective sunglasses or goggles, and if the skin is exposed for a significant period of time, to protect the bare skin with a UV block sun screen.
- The reflective facings used on this product can be slippery when wet. Therefore, it is recommended that any excess material should be contained to avoid a slip hazard.
- Warning – do not stand on or otherwise support your weight on this product unless it is fully supported by a load bearing surface.

![Figure 4 – Use of a Cavity Board to Protect the Cavity and Insulation Board Top Edge](image)

![Figure 5 – Use of a Cavity Batten to Protect the Cavity](image)
Kingspan Insulation

Company Details
Kingspan Insulation LLC is part of the Kingspan Group plc., one of Europe’s leading construction product manufacturers. The Kingspan Group was formed in the late 1960s and is a publicly traded group of companies headquartered in Kingscourt, County Cavan, Ireland.

Kingspan Insulation LLC, headquartered in Atlanta, GA, is a leading manufacturer in energy efficiency and moisture management products, offering high performance insulation, building wraps and pre-insulated HVAC ductwork.

Products & Applications
Kingspan Insulation LLC has a vast product range that includes optimum, premium and high performance rigid insulation products and moisture management products.

Kingspan Insulation LLC products are suitable for both new build and renovation in a variety of applications within both residential and non-residential buildings.

Insulation for:
- Flat Roofs (XPS & VIP)
- Green Roofs (XPS & VIP)
- Cavity Walls
- Solid Walls
- Wood and Steel Framing
- Insulated Cladding Systems
- Insulated Render Systems
- Below Grade
- Basement Walls
- Floors
- Soffits
- Ductwork

Further Solutions:
- **Kingspan Kooltherm® Cavity Closer**
- **Kingspan KoolDuct® Pre-Insulated Ducting**
- **Kingspan GreenGuard® Building Wraps**

Insulation Product Benefits

**Kingspan OPTIM-R Vacuum Insulation Panel (VIP)**
- With an aged R-value of 23.8 per inch, these products provide an insulating performance that is up to five times better than other commonly available insulation materials.
- Provides high levels of thermal efficiency with minimal thickness.
- Over 90% (by weight) recyclable.

**Kingspan Kooltherm® K-range Products**
- Higher R-value per inch than any commonly used insulation
- Each product achieves the required fire performance for its intended application.
- ASTM E 84 rating of 25/20 (flame/smoke).
- Manufactured with a blowing agent that has zero ODP, low GWP, HCFC and CFC free.

**Kingspan GreenGuard® Products**
- Rigid extruded polystyrene insulation (XPS) for use as general purpose insulation for roofing, wall and foundation applications requiring a minimum compressive strength.
- R-value of 5.0 per inch of thickness.
- Continuous Insulation (Ci) for above grade walls, as well as below grade walls and floors.
- Provides an extra barrier against moisture infiltration.
- Each product achieves the required fire performance for its intended application.

All Products
- Their closed cell structure resists both moisture and water vapor ingress – a problem which can be associated with open cell materials such as mineral fiber and which can result in reduced thermal performance.
- Unaffected by air infiltration – a problem that can be experienced with mineral fiber and which can reduce thermal performance.
- Safe and easy to install.
- If installed correctly, can provide reliable long term thermal performance over the lifetime of the building.
Kingspan Insulation LLC believes the information and recommendations herein to be accurate and reliable. However, since use conditions are not within its control, Kingspan Insulation LLC does not guarantee results from use of such products or other information herein and disclaims all liability from any resulting damage or loss. No warranty, express or implied, is given as to the merchantability, fitness for particular purpose, or otherwise with respect to the products referred to.

For more information on specific building product recommendations and product data, contact your Kingspan Insulation LLC representative.

For the most current installation guidelines and compliance information go to www.kingspaninsulation.us.