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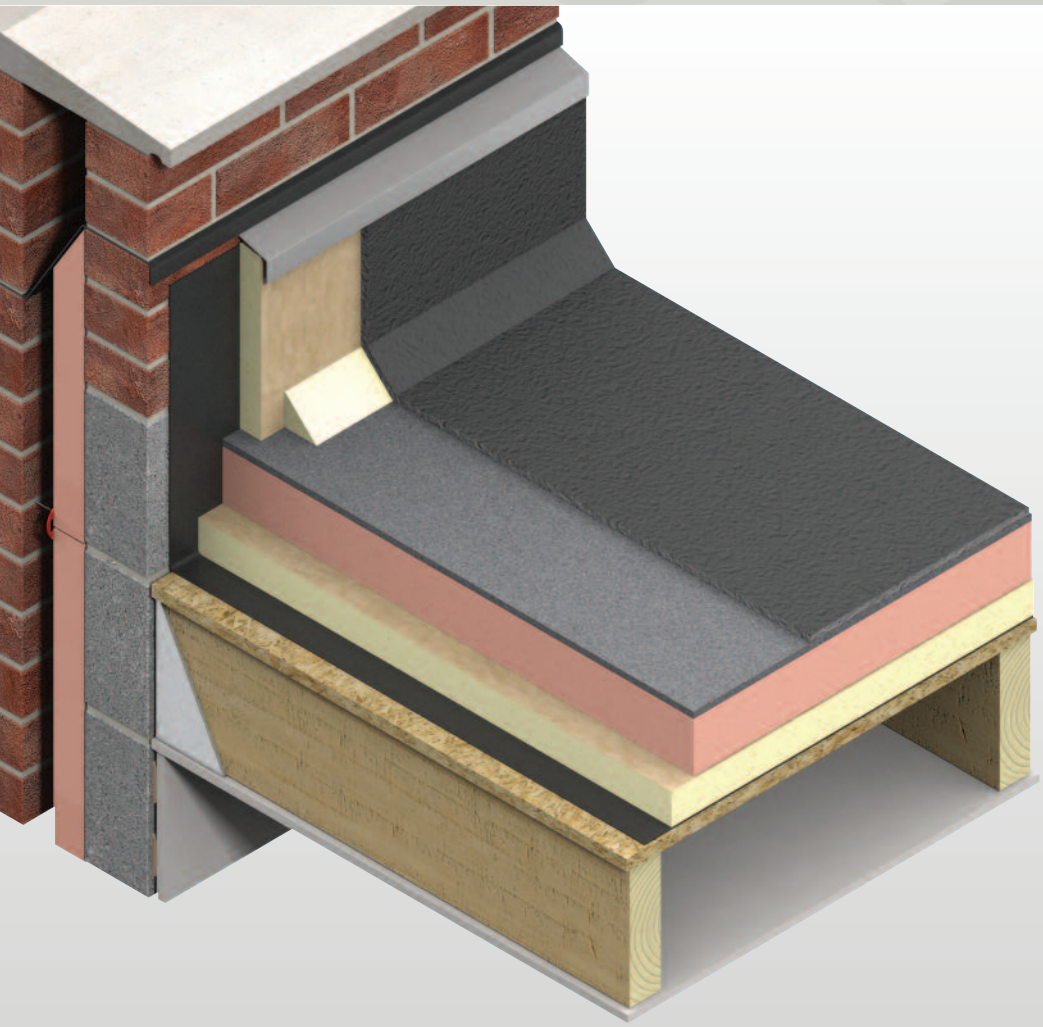
Kooltherm® K11 Roofboard

INSULATION FOR FLAT ROOFS WATERPROOFED WITH FULLY BONDED TORCH APPLIED MULTI-LAYER BITUMINOUS WATERPROOFING



- Premium performance rigid thermoset insulation – thermal conductivities as low as 0.021 W/m·K
- Class 0 fire rated insulation core
- Negligible smoke obscuration
- Compatible with torch applied waterproofing systems
- No requirement for a 3G ventilation layer
- Offers good resistance to foot traffic
- Resistant to the passage of water vapour
- Easy to handle and install
- Ideal for new build and refurbishment
- Non–deleterious material
- Manufactured with a blowing agent that has zero ODP and low GWP

PREMIUM PERFORMANCE

Kingspan®

Low Energy – Low Carbon Buildings

Typical Constructions and U-values

Assumptions

The U–values in the tables that follow have been calculated, under a management system certified to the BBA Scheme for Assessing the Competency of Persons to Undertake U–value and Condensation Risk Calculations, using the method detailed in BS EN ISO 6946: 2007 (Building components and building elements. Thermal resistance and thermal transmittance. Calculation method) and using the conventions set out in BR443 (Conventions for U–value calculations). They are valid for the constructions shown in the details immediately above each table.

These examples are based on *Kingspan* **Kool**therm® K11 Roofboard waterproofed using a fully bonded, torch applied waterproofing membrane, with the surface covered with mineral chippings. The insulation board is fully bonded to a sealed metal deck, or a vapour control layer, which has itself been fully bonded to the type of deck stated for each application. The ceiling, where applicable, is taken to be a 3 mm skim coated 12.5 mm plasterboard with a cavity between it and the underside of the deck.

Product thicknesses† for *Kingspan* **Kool**therm® K11 Roofboard are only available up to 90 mm. To achieve better U–values than 90 mm *Kingspan* **Kool**therm® K11 Roofboard can provide, a packer board is used. The packer board is taken to be *Kingspan* **Therma**roof® TR27 LPC/FM. Please refer to the relevant Kingspan Insulation literature for details of this product.

† Product thickness = insulant thickness + 20 mm perlite.

NB When calculating U–values to BS EN ISO 6946: 2007, the type of mechanical fixing used may change the thickness of insulation required. These calculations assume telescopic tube fasteners with a thermal conductivity of 1.00 W/m.K or less, the effect of which is insignificant.

NB For the purposes of these calculations the standard of workmanship has been assumed good and therefore the correction factor for air gaps has been ignored.

NB The figures quoted are for guidance only. A detailed U–value calculation together with condensation risk analysis should be completed for each individual project.

NB If your construction is different from those specified and / or to gain a comprehensive U–value calculation along with a condensation risk analysis for your project please consult the Kingspan Insulation Technical Service Department for assistance (see rear cover).

U-value Table Key

Where an ✗ is shown, the U–value is higher than the worst of the maximum new build area weighted average U–values allowed by the 2010 Editions of Approved Documents L to the Building Regulations (England & Wales) and the 2010 Editions of Technical Handbooks Section 6 (Scotland).

Concrete Deck

Dense Concrete Deck with Suspended Ceiling

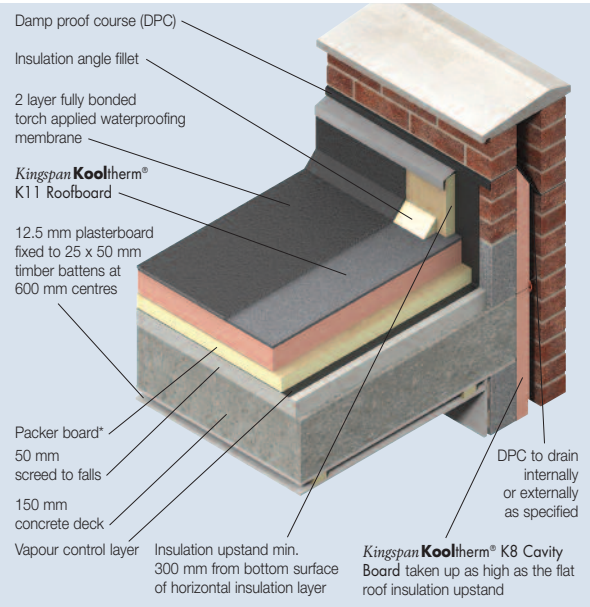


Figure 1

Packer Board* Thickness (mm)	Product Thickness** of *Kingspan* **Kool**therm® K11 Roofboard (mm)	U–value ($W/m^2 \cdot K$)
0	80	✗
0	90	0.23
50	60	0.22
60	60	0.20
75	60	0.18
40	90	0.17
50	90	0.16
60	90	0.15
70	90	0.14
85	90	0.13
95	90	0.12
120	90	0.11
130	90	0.10

* *The packer board is taken to be Kingspan* **Therma**roof® TR27 LPC/FM. *Please refer to the relevant Kingspan Insulation literature for details of this product.*

** *Product thickness = insulant thickness + 20 mm perlite.*

Timber Deck

Timber Deck with Suspended Ceiling

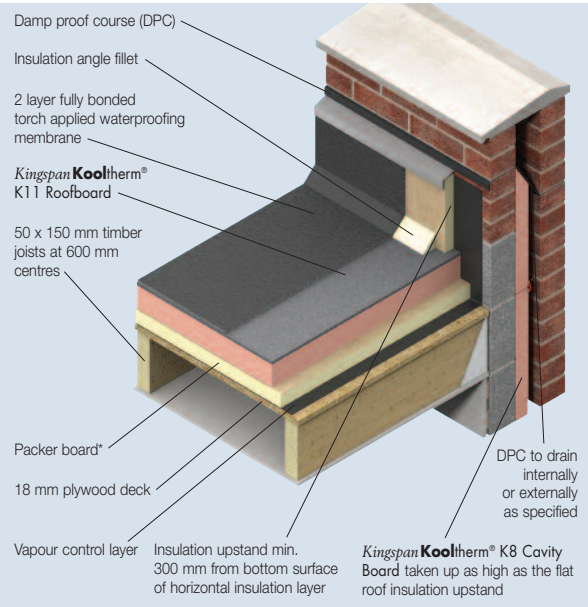


Figure 2

Packer Board* Thickness (mm)	Product Thickness** of *Kingspan* **Kool**therm® K11 Roofboard (mm)	U–value ($W/m^2 \cdot K$)
0	80	✗
0	90	0.23
45	60	0.22
60	60	0.20
70	60	0.18
40	90	0.17
45	90	0.16
55	90	0.15
70	90	0.14
80	90	0.13
95	90	0.12
110	90	0.11
125	90	0.10

* *The packer board is taken to be Kingspan* **Therma**roof® TR27 LPC/FM. *Please refer to the relevant Kingspan Insulation literature for details of this product.*

** *Product thickness = insulant thickness + 20 mm perlite.*

Metal Deck

Metal Deck with No Ceiling

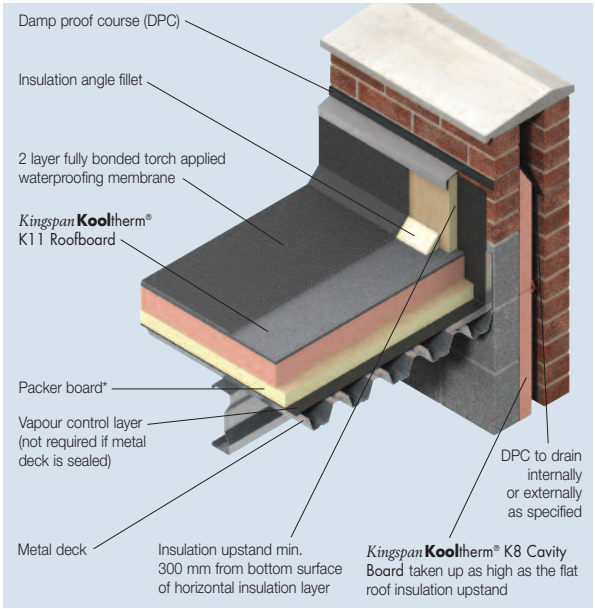


Figure 3

Packer Board* Thickness (mm)	Product Thickness** of *Kingspan* **Kool**therm® K11 Roofboard (mm)	U–value ($W/m^2 \cdot K$)
0	90	✗
60	60	0.22
70	60	0.20
80	90	0.18
50	90	0.17
60	90	0.16
70	90	0.15
80	90	0.14
90	90	0.13
110	90	0.12
120	90	0.11
135	90	0.10

* *The packer board is taken to be Kingspan* **Therma**roof® TR27 LPC/FM. *Please refer to the relevant Kingspan Insulation literature for details of this product.*

** *Product thickness = insulant thickness + 20 mm perlite.*

Design Considerations

Linear Thermal Bridging

Reasonable provision must be made to limit the effects of cold bridging. The design should ensure that roof–light or ventilator kerbs etc. are always insulated with the same thickness of *Kingspan* **Kool**therm® K11 Roofboard as the general roof area. A 25 mm thick *Kingspan* **Therma**roof® TR27 LPC/FM upstand should be used around the perimeter of the roof on the internal façade of parapets. A minimum distance of 300 mm should be maintained between the top of the insulation upstand and the bottom of the horizontal roof insulation. Wall insulation should also be carried up into parapets as high as the flat roof insulation upstand. Please contact the Kingspan Insulation Technical Service Department (see rear cover) for further advice.

Sustainability & Responsibility

Kingspan Insulation has a long–term commitment to sustainability and responsibility: as a manufacturer and supplier of insulation products; as an employer; as a substantial landholder; and as a key member of its neighbouring communities.

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 **Kool**therm® K11 Roofboard should be described in specifications as:–

The roof insulation shall be *Kingspan* **Kool**therm® K11 Roofboard ____mm thick: comprising a premium performance rigid thermoset insulation core faced with 20 mm thick bitumen coated perlite on its upper surface and a glass tissue based facing on its lower surface. 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 NEN EN ISO 9001: 2008; by Kingspan Insulation Limited; and installed in accordance with the instructions issued by them.

NBS Specifications

Details also available in NBS Plus.
NBS users should refer to clause(s):
J41 420, J41 430 (Standard and Intermediate)
J41 10 (Minor Works)

Wind Loading

Wind loadings should be assessed in accordance with BS 6399–2: 1997 (Loading for buildings. Code of practice for wind loads) or BS EN 1991–1–4: 2005 (National Annex to Eurocode 1 Actions on Structures. General Actions. Wind Actions) taking into account:

- length / width / height of the building;
- orientation of the building;
- wind speed;
- aspect (e.g. on a hill side); and
- topographical value of the surrounding area.

Falls

The fall on a flat roof, constructed using *Kingspan* **Kool**therm® K11 Roofboard, is normally provided by the supporting structure being directed towards the rainwater outlets. The fall should be smooth and steep enough to prevent the formation of rainwater pools. In order to ensure adequate drainage, BS 6229: 2003 (Flat roofs with continuously supported coverings. Code of practice) recommends uniform gradients of not less than 1 in 80. However, because of building settlement, it is advisable to design in even greater falls. These can be provided by a *Kingspan* **Therma**taper® LPC/FM tapered roofing system. Further details of the *Kingspan* **Therma**taper® LPC/FM range and its supporting design service are available from the Kingspan Insulation Tapered Roofing Department (see rear cover).

Roof Waterproofing

Kingspan **Kool**therm® K11 Roofboard is designed for use with 2 layer fully bonded torch applied felts. Fully bonded built–up felt waterproofing should be laid, where applicable, in accordance with BS 8217: 2005 (Reinforced bitumen membranes for roofing. Code of practice).

NB Kingspan **Kool**therm® K11 Roofboard *is unsuitable for use with partially bonded torch applied waterproofing systems.*

Water Vapour Control

Kingspan **Kool**therm® K11 Roofboard should be installed over a separate vapour control layer, in new build roofs, unless it is being used in conjunction with a sealed metal deck. Regardless of the deck type it is recommended that a condensation risk analysis is carried out for every project.

For refurbishment projects, involving the addition of insulation to existing insulated flat roofs, it is imperative that a U–value calculation and condensation risk analysis is carried out for every project, in order to ensure that the correct thickness of insulation is installed to achieve the required thermal performance, whilst avoiding interstitial condensation.

In refurbishment projects, where *Kingspan* **Kool**therm® K11 Roofboard is to be installed over an existing bituminous waterproofing membrane, the membrane can be used as a vapour control layer, as long as it is in a good water tight condition. Where this is not the case, a separate vapour control layer should be installed.

A minimum vapour control layer should consist of a coated roofing felt complying with Type 3B to BS 747: 2000 (Reinforced bitumen sheets for roofing. Specification) or S1P1 to BS 8747: 2007 (Reinforced bitumen membranes (RBMs) for roofing. Guide to selection and specification), or any appropriate metal–cored vapour control layer.

Where the separate vapour control layer is to be bonded, allowance should be made for adequate bonding of the vapour control layer to the substrate, so as to provide a suitable surface upon which to lay the insulation boards and sufficient resistance to wind up–lift (see ‘Wind Loading’).

Roof Loading / Traffic

Kingspan **Kool**therm® K11 Roofboard is suitable for use on access roof decks subject to limited foot traffic.

Where inappropriate foot traffic is liable to occur, it is recommended that the roof surface is protected by promenade tiles.

For further advice on the acceptability of specific foot traffic regimes, please contact the Kingspan Insulation Technical Service Department (see rear cover).

Sitework

Installing over Metal Decks

- Metal decks should be clean, dry, without large projections, steps or gaps, and should be graded to allow correct falls to all rainwater outlets.
- If using a sealed metal deck there is no requirement for a separate vapour control layer.
- If the metal deck is not sealed, in order to ensure an adequate bond between it and the vapour control layer, the metal deck should be suitably primed, in accordance with the primer manufacturer's instructions, prior to the application of the hot bitumen, or suitable alternative proprietary adhesive system, used to bond the vapour control layer to the deck.
- Where one run of the specified vapour control layer laps another, there should be minimum 150 mm side and end overlaps, which should be adequately sealed.
- Turn up the vapour control layer at the edge of the roof to a height appropriate to the specified waterproofing membrane.
- Sheets of *Kingspan* **Kool**therm® K11 Roofboard should be bonded down by laying into hot bitumen (max. temperature 240°C) mopped or poured over the vapour control layer / sealed metal deck, or with the use of a suitable alternative proprietary adhesive system.
- Insulation sheets should always be laid break–bonded, either with their long edges at right angles to the trough openings, or diagonally across the corrugation line, and with joints lightly butted. There should be no gaps at abutments.
- Roof–light or ventilator kerbs etc. should always insulated with the same thickness of *Kingspan* **Kool**therm® K11 Roofboard as the general roof area.
- A 25 mm thick *Kingspan* **Therma**roof® TR27 LPC/FM upstand should be used around the perimeter of the roof on the internal façade of parapets.
- A minimum distance of 300 mm should be maintained between the top of the insulation upstand and the bottom of the horizontal roof insulation.
- The waterproofing membrane is installed in accordance with the membrane manufacturer's instructions, over the whole insulated area including any insulation upstands, as soon as possible after laying the insulation sheets.

Installing over Concrete Decks

- Concrete decks should be clean, dry, without large projections, steps or gaps, and should be graded to allow correct falls to all rainwater outlets.
- In order to ensure an adequate bond between the vapour control layer and the concrete deck, the concrete or screeded surface should be suitably primed, in accordance with the primer manufacturer's instructions, prior to the application of the hot bitumen, or suitable alternative proprietary adhesive system, used to bond the vapour control layer to the deck.
- Where one run of the specified vapour control layer laps another, there should be minimum 150 mm side and end overlaps, which should be adequately sealed.
- Turn up the vapour control layer at the edge of the roof insulation, lap with the roof waterproofing and seal.
- Sheets of *Kingspan* **Kool**therm® K11 Roofboard should be bonded down by laying into hot bitumen (max. temperature 240°C) mopped or poured over the vapour control layer, or with the use of a suitable alternative proprietary adhesive system.
- Insulation sheets should always be laid break–bonded, either with their long edges at right angles to the edge of, or diagonally across the roof, and with joints lightly butted. There should be no gaps at abutments.
- Roof–light or ventilator kerbs etc. should always insulated with the same thickness of *Kingspan* **Kool**therm® K11 Roofboard as the general roof area.
- A 25 mm thick *Kingspan* **Therma**roof® TR27 LPC/FM upstand should be used around the perimeter of the roof on the internal façade of parapets.
- A minimum distance of 300 mm should be maintained between the top of the insulation upstand and the bottom of the horizontal roof insulation.
- The waterproofing membrane is installed in accordance with the membrane manufacturer's instructions, over the whole insulated area including any insulation upstands, as soon as possible after laying the insulation sheets.

Installing over Plywood Decks

- Plywood decks should be clean, dry, without large projections, steps or gaps, and should be graded to allow correct falls to all rainwater outlets.
- If the vapour control layer is to be bonded, in order to ensure an adequate bond between it and the plywood deck, the plywood surface should be suitably primed, in accordance with the primer manufacturer's instructions, prior to the application of the hot bitumen, or suitable alternative proprietary adhesive system, used to bond the vapour control layer to the deck.
- If the vapour control layer is to be nailed to the deck the nail heads will become sealed with the subsequent bonding of the insulation boards to the vapour control layer.
- Where one run of the specified vapour control layer laps another, there should be minimum 150 mm side and end overlaps, which should be adequately sealed.
- Turn up the vapour control layer at the edge of the roof to a height appropriate to the specified waterproofing membrane.
- Sheets of *Kingspan* **Kool**therm® K11 Roofboard should be bonded down by laying into hot bitumen (max. temperature 240°C) mopped or poured over the vapour control layer, or with the use of a suitable alternative proprietary adhesive system.
- Insulation sheets should always be laid break–bonded, either with their long edges at right angles to the edge of, or diagonally across the roof, and with joints lightly butted. There should be no gaps at abutments.
- Joints between insulation boards should not coincide with those between the plywood sheets.
- Roof–light or ventilator kerbs etc. should always insulated with the same thickness of *Kingspan* **Kool**therm® K11 Roofboard as the general roof area.
- A 25 mm thick *Kingspan* **Therma**roof® TR27 LPC/FM upstand should be used around the perimeter of the roof on the internal façade of parapets.
- A minimum distance of 300 mm should be maintained between the top of the insulation upstand and the bottom of the horizontal roof insulation.
- The waterproofing membrane is installed in accordance with the membrane manufacturer's instructions, over the whole insulated area including any insulation upstands, as soon as possible after laying the insulation sheets.

Installing over Existing Flat Roofs

- The existing waterproofing membrane surface should be clean, dry, without large projections, steps or gaps, and should be graded to allow correct falls to all rainwater outlets.
- Where the existing waterproofing membrane is not fit for purpose as a vapour control layer, a separate vapour control layer should be bonded to it with hot bitumen, or suitable alternative proprietary adhesive system.
- Where one run of the specified vapour control layer laps another, there should be minimum 150 mm side and end overlaps, which should be adequately sealed.
- Turn up the vapour control layer at the edge of the roof to a height appropriate to the specified new waterproofing membrane.
- Sheets of *Kingspan* **Kool**therm® K11 Roofboard should be bonded down by laying into hot bitumen (max. temperature 240°C) mopped or poured over the vapour control layer, or with the use of a suitable alternative proprietary adhesive system.
- Insulation sheets should always be laid break–bonded, either with their long edges at right angles to the edge of, or diagonally across the roof, and with joints lightly butted. There should be no gaps at abutments.
- Roof–light or ventilator kerbs etc. should always insulated with the same thickness of *Kingspan* **Kool**therm® K11 Roofboard as the general roof area.
- A 25 mm thick *Kingspan* **Therma**roof® TR27 LPC/FM upstand should be used around the perimeter of the roof on the internal façade of parapets.
- A minimum distance of 300 mm should be maintained between the top of the insulation upstand and the bottom of the horizontal roof insulation.
- The waterproofing membrane is installed in accordance with the membrane manufacturer's instructions, over the whole insulated area including any insulation upstands, as soon as possible after laying the insulation sheets

Installing in Two Layers

- In situations where two layers of insulation are required, the packer board and *Kingspan* **Kool**therm® K11 Roofboard should be installed in the same manner, as detailed in the preceding sections.
- In all cases, the layers should be horizontally offset relative to each other so that, as far as possible, the board joints in the two adjacent layers do not coincide with each other (see Figure 4).

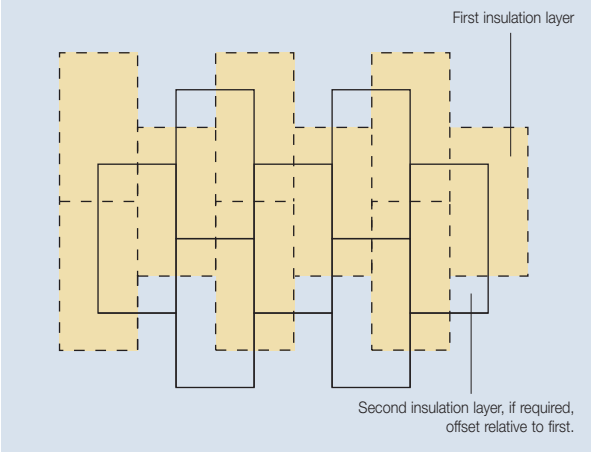


Figure 4 Offsetting of Multiple Insulation Layers

General

Following Trades

- The roof must be adequately protected when building works are being carried out on or over the roof surface. This is best achieved by close boarding. The completed roof must not be used for storage of heavy building components such as bricks or air conditioning equipment.

Reflective Coatings

- Bitumen based built–up waterproofing systems laid over *Kingspan* **Kool**therm® K11 Roofboard should always incorporate a solar reflective layer such as chippings or a specialist coating.

Daily Working Practice

- At the completion of each day's work, or whenever work is interrupted for extended periods of time, a night joint must be made in order to prevent water penetration into the roof construction.

Cutting

- Cutting should be carried out by using a fine toothed saw. Do not attempt to snap the product sheets.
- Ensure accurate trimming to achieve close butting joints and continuity of insulation.

Availability

- *Kingspan* **Kool**therm® K11 Roofboard is available through specialist insulation distributors and selected roofing merchants throughout the UK.

Packing and Storage

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

Health and Safety

- Kingspan Insulation products are chemically inert and safe to use.
- A Safety Information Data Sheet for this product is available from the Kingspan Insulation website www.kingspaninsulation.co.uk/safety.

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

Product Details

The Upper Facing

The upper facing of *Kingspan* **Kool**therm® K11 Roofboard is 20 mm thick bitumen coated perlite board, manufactured from expanded, milled volcanic perlite rock particles, formed into a board, and treated during manufacture with a bitumen emulsion, and secondary bonded to the insulation core.

The Core

The core of *Kingspan* **Kool**therm® K11 Roofboard is a premium performance rigid thermoset modified resin insulant, manufactured with a blowing agent that has zero Ozone Depletion Potential (ODP) and low Global Warming Potential (GWP).

zero o.d.p

The Lower Facing

The lower facing of *Kingspan* **Kool**therm® K11 Roofboard is a glass tissue based facing, is autohesively bonded to the insulation core during manufacture.

Standard and Approvals

Kingspan **Kool**therm® K11 Roofboard is manufactured to the highest standards under a management system certified to NEN EN ISO 9001: 2008 (Quality management systems. Requirements).

Standard Dimensions

Kingspan **Kool**therm® K11 Roofboard is available in the following standard size:

Nominal Dimension		Availability
Length	(m)	1.2
Width	(m)	1.0
Perlite Thickness	(mm)	20
Insulant Thickness	(mm)	Refer to local distributor or Kingspan Insulation price list for current stock and non–stock sizes.

Compressive Strength

Typically exceeds 150 kPa at 10% compression, when tested to EN 826: 1996 (Thermal insulating products for building applications. Determination of compression behaviour).

Water Vapour Resistance / Resistivity

The non–perlite component of the product typically achieves a resistivity greater than 300 MN·s/g·m, when tested in accordance with EN 12086: 1997 (Thermal insulating products for building applications Determination of water vapour transmission properties). For the purposes of calculation of condensation risk, the resistivity of the perlite component of the product should be taken as 27 MN·s/g·m. *Kingspan* **Kool**therm® K11 Roofboard should always be installed over a vapour control layer or sealed metal deck (see 'Water Vapour Control' on page 5).

Durability

If correctly installed, *Kingspan* **Kool**therm® K11 Roofboard can have an indefinite life. Its durability depends on the supporting structure and the conditions of its use.

Resistance to Solvents, Fungi & Rodents

The insulation core is resistant to short–term contact with petrol and with most dilute acids, alkalis and mineral oils. However, it is recommended that any spills be cleaned off fully before the sheets are installed. Ensure that safe methods of cleaning are used, as recommended by the suppliers of the spilt 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 sheets or sheets 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* **Kool**therm® K11 Roofboard resist attack by mould and microbial growth, and do not provide any food value to vermin.

Fire Performance

Kingspan **Kool**therm® K11 Roofboard is Class 1, as defined by by BS 476–7: 1997 (Fire tests on building materials and structures. Method of test to determine the classification of the surface spread of flame of products).

The rigid thermoset insulation core of *Kingspan* **Kool**therm® K11 Roofboard is Class 0, as defined by the Building Regulations.

The rigid thermoset insulation core of *Kingspan* **Kool**therm® K11 Roofboard, when subjected to the British Standard fire test, specified in the table below, has achieved the result shown.

Test	Result
BS 5111–1: 1974 (Smoke Obscuration)	< 5% (Negligible smoke obscuration)

Kingspan **Kool**therm® K11 Roofboard, when subjected to the British Standard fire test, specified in the table below, will achieve the result shown, when waterproofed with a 2 layer, torch applied felt and a loading coat of 10 mm mineral chippings. For specifications without the chippings please consult the manufacturer of the mineral surfaced cap sheet for their fire classification details.

Test	Result
BS 476–3: 2004 (External fire exposure roof test)	FAA rating

Further details on the fire performance of Kingspan Insulation products may be obtained from the Kingspan Insulation Technical Service Department (see rear cover).

Thermal Properties

The λ–values and R–values detailed below are quoted in accordance with EN 13166: 2008 (Thermal insulation products for buildings – Factory made products of phenolic foam (PF) – Specification).

Thermal Conductivity

The thermal conductivity (λ–value) of the perlite component of *Kingspan* **Kool**therm® K11 Roofboard is 0.050 W/m·K

The thermal conductivity (λ–value) of the insulation core of *Kingspan* **Kool**therm® K11 Roofboard is:
0.023 W/m·K (insulant thickness 25–44 mm); and
0.021 W/m·K (insulant thickness ≥ 45 mm).

Thermal Resistance

Thermal resistance (R–value) varies with the thickness of each component. It is calculated by dividing the thickness of each component (expressed in metres) by its thermal conductivity, followed by adding the resulting figures together. The sum is rounded down to the nearest 0.05 (m^2·K/W).

Product Thickness* (mm)	Thermal Resistance (m^2·K/W)
60	2.10
70	2.75
75	3.00
80	3.25
90	3.70

** Product thickness = insulant thickness + 20 mm perlite board.*

NB Refer to local distributor or Kingspan Insulation price list for current stock and non–stock sizes.

For thickness above 90 mm a packer board is required.

Kingspan Insulation

Company Details

Kingspan Insulation Ltd 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 quoted group of companies headquartered in Kingscourt, County Cavan, Ireland.

Kingspan Insulation Ltd is a market leading manufacturer of premium and high performance rigid insulation products and insulated systems for building fabric and building services applications.

Products & Applications

Kingspan Insulation Ltd has a vast product range. Kingspan Insulation Ltd products are suitable for both new build and refurbishment in a variety of applications within both domestic and non–domestic buildings.

Insulation for:

- Pitched Roofs
- Flat Roofs
- Green Roofs
- Cavity Walls
- Solid Walls
- Timber and Steel Framing
- Insulated Cladding Systems
- Insulated Render Systems
- Floors
- Soffits
- Ductwork

Further Solutions:

- Insulated Dry–Lining
- Tapered Roofing Systems
- Cavity Closers
- *Kingspan* **Kool**Duct® Pre–Insulated Ducting
- *Kingspan* **nilvent**® Breathable Membranes
- *Kingspan* **TEK**® Building System

Insulation Product Benefits

Kingspan **Kool**therm® K–range **Products**

- With a thermal conductivity of 0.020–0.023 W/m·K these are the most thermally efficient insulation products commonly used.
- The thinnest commonly used insulation products for any specific U–value.
- Rigid thermoset insulation core is Class 0, as defined by the Building Regulations in England, Wales & Ireland, and Low Risk, as defined by the Building Standards in Scotland.
- Rigid thermoset insulation core achieves the best possible rating of < 5% smoke obscuration when tested to BS 5111: Part 1: 1974.
- Manufactured with a blowing agent that has zero Ozone Depletion Potential (ODP) and low Global Warming Potential (GWP).

Kingspan **Therma**™ Range **Products**

- With a thermal conductivity of 0.022–0.027 W/m·K these are amongst the more thermally efficient insulation products commonly used.
- Each product achieves the required fire performance for its intended application.
- Manufactured with a blowing agent that has zero Ozone Depletion Potential (ODP) and low Global Warming Potential (GWP).

Kingspan **Styr**ozone® Range **Products**

- Rigid extruded polystyrene insulation (XPS) has the necessary compressive strength to make it the product of choice for specialist applications such as heavy duty flooring, car park decks and inverted roofing.
- Each product achieves the required fire performance for its intended application.
- Manufactured with a blowing agent that has zero Ozone Depletion Potential (ODP).

All Products

- Their closed cell structure resists both moisture and water vapour ingress – a problem which can be associated with open cell materials such as mineral fibre and which can result in reduced thermal performance.
- Unaffected by air infiltration – a problem that can be experienced with mineral fibre and which can reduce thermal performance.
- Safe and easy to install – non–fibrous.
- If installed correctly, can provide reliable long term thermal performance over the lifetime of the building.

Contact Details

Customer Service

For quotations, order placement and details of despatches please contact the Kingspan Insulation Customer Service Department on the numbers below:

Tel: +44 (0) 1544 388 601
Fax: +44 (0) 1544 388 888
email: customerservice@kingspaninsulation.co.uk

Literature & Samples

Kingspan Insulation produces a comprehensive range of technical literature for specifiers, contractors, stockists and end users. The literature contains clear 'user friendly' advice on typical design; design considerations; thermal properties; sitework and product data.

Available as a complete Design Manual or as individual product brochures, Kingspan Insulation technical literature is an essential specification tool. For copies please contact the Kingspan Insulation Marketing Department, or visit the Kingspan Insulation website, using the details below:

Tel: +44 (0) 1544 387 384
Fax: +44 (0) 1544 387 484
email: literature@kingspaninsulation.co.uk
www.kingspaninsulation.co.uk/literature

Tapered Roofing

For technical guidance, quotations, order placement and details of despatches please contact the Kingspan Insulation Tapered Roofing Department on the numbers below:

Tel: +44 (0) 1544 387 383
Fax: +44 (0) 1544 387 483
email: tapered@kingspaninsulation.co.uk

Technical Advice / Design

Kingspan Insulation supports all of its products with a comprehensive Technical Advisory Service for specifiers, stockists and contractors.

This includes a computer–aided service designed to give fast, accurate technical advice. Simply phone the Kingspan Insulation Technical Service Department with your project specification. Calculations can be carried out to provide U–values, condensation / dew point risk, required insulation thicknesses etc… Thereafter any number of permutations can be provided to help you achieve your desired targets.

The Kingspan Insulation Technical Service Department can also give general application advice and advice on design detailing and fixing etc... Site surveys are also undertaken as appropriate.

The Kingspan Insulation British Technical Service Department operates under a management system certified to the BBA Scheme for Assessing the Competency of Persons to Undertake U–value and Condensation Risk Calculations.

Please contact the Kingspan Insulation Technical Service Department on the numbers below:

Tel: +44 (0) 1544 387 382
Fax: +44 (0) 1544 387 482
email: technical@kingspaninsulation.co.uk

General Enquiries

For all other enquiries contact Kingspan Insulation on the numbers below:

Tel: +44 (0) 1544 388 601
Fax: +44 (0) 1544 388 888
email: info@kingspaninsulation.co.uk

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Kingspan Insulation Ltd
Pembridge, Leominster, Herefordshire HR6 9LA, UK
www.kingspaninsulation.co.uk