Futureproof solutions

Your Guide to Building Energy Ratings (BER)

Kingspan®
Insulation

Contents

Building regulations uncovered

Whether you're planning to buy, sell, renovate or extend, a basic understanding of the new building energy regulations and how these will affect you will help you make informed decisions.

By understanding these regulations and adopting the theory that an A rated home is as much a way of the present as it is of the future, you will reduce your fuel bills and protect the value of your home.

The Goal

From July 2011, the building regulations aims to see all new dwellings achieve:

- A 60% improvement in energy efficiency relative to 2005 base year standards.
- A 60% reduction in Carbon Dioxide emissions relative to 2005 base year standards
- Household use of renewable energy supply (eg: Solar panel, wood pellet)

The Method

- Introduction of Building Energy Rating (BER) certificates

The Dwelling Energy Assessment Procedure (DEAP) determines your homes Building Energy Rating (BER) within a scale from most efficient A1 right down to least efficient G. A BER certificate displays the energy performance of a building, that is, the energy used per square meter per year (kWh/m²/yr).

A dwelling built to the 2005 base year standards would typically receive a C1 rating at best, where a dwelling would consume between 105-175 kWh/m²/yr of energy. A dwelling built to current standards will typically achieve a B1 rating, where a dwelling will consume between 75-100 kWh/m²/yr almost half the usage of a C1 rated home.

However, further changes in Building Regulations from July 2011 will dictate that dwellings must typically achieve an A3 rating equivalent to between 50-75 kWh/m²/yr.

A BER certificate must be produced for all homes being sold or rented post January 2009. This allows prospective buyers & tenants to compare the energy efficiency of your home against others and take energy performance into consideration when deciding what home to purchase or rent.

The Assessment

An independent BER Assessor will calculate your homes carbon dioxide emissions, and review if your home achieves the required 60% improvement in energy efficiency.

This is a whole building assessment and takes into account:

- Building Fabric - Insulation levels, glazing performance, air tightness, cold bridging, etc
- Heating system and controls
- Renewable Energy Technology - Solar hot water panels, Photovoltaics, Wind turbines etc
- Anything that affects the overall energy performance of the building for lighting, water and space heating.

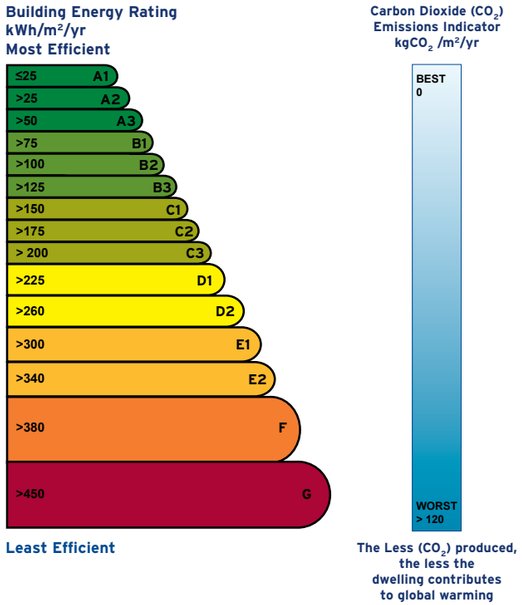
The Dates

- July 2011 - a 60% reduction in carbon dioxide emissions and a 60% improvement in energy performance in new dwellings relative to 2005 base year standards.

The Recommendations

- Aim high. Regardless of the stage of your home, achieving an A rating today will inevitably save you more in the long run. Do your research. Consider the extra material, labour and energy costs associated with upgrading at a later stage, or the impact a lower rating will have on the value of your home.
- Consider a more compact design. The difficulty of ensuring continuity of insulation and maximum airtightness in architectural features such as dormer and bay windows can have a negative effect on a homes energy performance. Avoiding excessive use of these and opting for a more simple vernacular design can significantly improve energy efficiency, and as a result your energy rating.
- Introducing more, or more efficient insulation, and improving airtightness and glazing performance will reduce the heat loss of the walls, floor and roof, improving your energy rating.
- The efficiency of the heating system and the introduction of environmentally friendly methods of energy generation such as solar panels must also be considered to achieve the best possible rating.
- Utilising a high performance building fabric is the key to an energy efficient building by limiting the space heating requirements and ensuring your home is **futureproofed**.
- The chart on the following page gives some guidance on typical specifications to achieve the various energy ratings from C1 to A1.

BER Chart



Timescale for residential energy performance compliance

JAN 2003	JAN 2007	JUL 2008	JAN 2009	2011	2015
Upgrade U-Values (Typically C1 Rating)	New DEAP Calculation Method applies to all new homes which planning permission is applied for	40% Improvement in Energy Performance (Typically B1 rating)	BER certificate required for existing buildings (when rented/sold)	Further 20% improvement in Energy Performance (Typically A3 Rating)	Zero Carbon?

Building regulations uncovered

Summary chart

	0-25 kWh/m²/yr **A1**	26-50 kWh/m²/yr **A2**	51-75 kWh/m²/yr **A3**	76-100 kWh/m²/yr **B1**	101-125 kWh/m²/yr **B2**	126-150 kWh/m²/yr **B3**	151-175 kWh/m²/yr **C1**
Solid Ground Floor U-Value (W/m²K) Insulation	0.12 140mm Kooltherm K3	0.12 140mm Kooltherm K3	0.16 100mm Kooltherm K3	0.19 80mm Kooltherm K3	0.19 80mm Kooltherm K3	0.21 70mm Kooltherm K3	0.25 60mm Therma TF70
Partial Fill Cavity Wall U-Value (W/m²K) Insulation	0.12 100mm Kooltherm K8 and 62.5mm Kooltherm K17 or K18	0.16 80mm Kooltherm K8 and 37.5mm Kooltherm K17 or K18	0.19 60mm Kooltherm K8 and 37.5mm Kooltherm K17 or K18	0.21 50mm Kooltherm K8 and 37.5mm Kooltherm K17 or K18	0.21 50mm Kooltherm K8 and 37.5mm Kooltherm K17 or K18	0.24 60mm Kooltherm K8	0.26 60mm Therma TW50
External Rendered Insulation System U-Value (W/m²K) Insulation	0.12 150mm Kooltherm K5 EWB	0.15 120mm Kooltherm K5 EWB	0.20 90mm Kooltherm K5 EWB	0.22 80mm Kooltherm K5 EWB	0.22 80mm Kooltherm K5 EWB	0.25 70mm Kooltherm K5EWB	0.25 70mm Kooltherm K5 EWB
Timber Frame Construction U-Value (W/m²K) Insulation	0.12 140mm Kooltherm K12 and 60mm Kooltherm K12	0.16 120mm Kooltherm K12 and 30mm Kooltherm K12	0.20 140mm Kooltherm K12	0.22 110mm Kooltherm K12	0.22 110mm Kooltherm K12	0.26 80mm Kooltherm K12	0.27 80mm Therma TW55
Cold Pitched Roof U-Value (W/m²K) Insulation	0.12 140mm Kooltherm K7 and 72.5mm Kooltherm K17 or K18	0.12 140mm Kooltherm K7 and 72.5mm Kooltherm K17 or K18	0.14 120mm Kooltherm K7 and 62.5mm Kooltherm K17 or K18	0.16 100mm Kooltherm K7 and 62.5mm Kooltherm K17 or K18	0.16 100mm Kooltherm K7 and 62.5mm Kooltherm K17 or K18	0.16 100mm Kooltherm K7 and 62.5mm Kooltherm K17 or K18	0.20 100mm Kooltherm K7 and 37.5mm Kooltherm K17 or K18
Warm Pitched Roof U-Value (W/m²K) Insulation	0.12 100mm Kooltherm K7 between and 80mm Kooltherm K7 above	0.12 100mm Kooltherm K7 between and 80mm Kooltherm K7 above	0.14 70mm Kooltherm K7 between and 80mm Kooltherm K7 above	0.16 60mm Kooltherm K7 between and 70mm Kooltherm K7 above	0.16 60mm Kooltherm K7 between and 70mm Kooltherm K7 above	0.16 60mm Kooltherm K7 between and 70mm Kooltherm K7 above	0.20 50mm Kooltherm K7 between and 50mm Kooltherm K7 above
Flat Ceiling U-Value (W/m²K) Insulation	0.12 190mm Kooltherm K7 and 42.5mm Kooltherm K17 or K18	0.12 190mm Kooltherm K7 and 42.5mm Kooltherm K17 or K18	0.14 150mm Kooltherm K7 and 42.5mm Kooltherm K17 or K18	0.14 150mm Kooltherm K7 and 42.5mm Kooltherm K17 or K18	0.14 150mm Kooltherm K7 and 42.5mm Kooltherm K17 or K18	0.14 150mm Kooltherm K7 and 42.5mm Kooltherm K17 or K18	0.16 180mm Kooltherm K7
Additional Specification Doors/Glazing (U-Value) Electrical (Photovoltaic) Electrical (Lighting) Airtightness (m³/hr.m²) Water Heating Heating (Gas) (%) Ventilation	0.80 5m² 100% CFL 2 4m² Solar Panels 91 HRV-90%	1.10 No 100% CFL 2 4m² Solar Panels 91 HRV-85%	1.30 No 100% CFL 2 4m² Solar Panels 91 HRV-85%	1.50 No 100% CFL 5 4m² Solar Panels 91 Natural	1.80 No 100% CFL 5 By Main Heating System 91 Natural	2.00 No 100% CFL Not Tested By Main Heating System 91 Natural	2.20 No Standard Not Tested By Main Heating System 78 Natural

HRV: Heat Recovery Ventilation - efficiency (%) **CFL:** Compact Fluorescent Lighting **Photovoltaic:** Solar Panels for providing Electricity

Under current regulations a maximum U-value of 0.15 must be achieved in the floor if under floor heating is used.

NB: These details and specifications have been prepared in support of providing an indication of the requirements to meet the various Building Energy Ratings. As the rating achieved will vary depending on the shape and size of the dwelling along with other specification options not covered above, they are indicative only and must not be taken as a final specification. A registered BER Assessor should be employed to carry out the necessary calculations to determine the exact requirements for each individual dwelling. Accordingly Kingspan Insulation Ltd accepts no liability for errors, omissions or claims arising from the use of this information.

Solid ground floor

Insulation to required thickness (see chart below) is laid over the damp proof membrane or radon barrier ideally in a 'break bonded' (ie. staggered) pattern. If using two layers of insulation the vertical joints can be staggered to ensure continuity of the insulation (ie. no vertical joints lining up). The insulation should be overlaid with a separation membrane to ensure that wet screed cannot penetrate the joints of the insulation boards.

A minimum thickness of 25mm of insulation should be placed vertically along the entire perimeter of the external walls to ensure that the screed or concrete slab (if above the insulated layer) does not come into direct contact with the blockwork - this will create a robust detail and therefore prevent cold bridging. Ideally this detail should be adopted for the internal walls also.

For a solid concrete floor the position of the insulation is important in either exposing the thermal mass of the floor to the heat provided by the system or isolating the thermal mass from it. For 24 hour, or long cycle heating systems the thermal mass of the concrete slab will ensure a more even heating regime, therefore it might be beneficial locating the concrete slab over the insulation. For short intermittent heating cycles where a fast response time is required it may be more beneficial to have less thermal mass and therefore place the insulation directly below the screed.

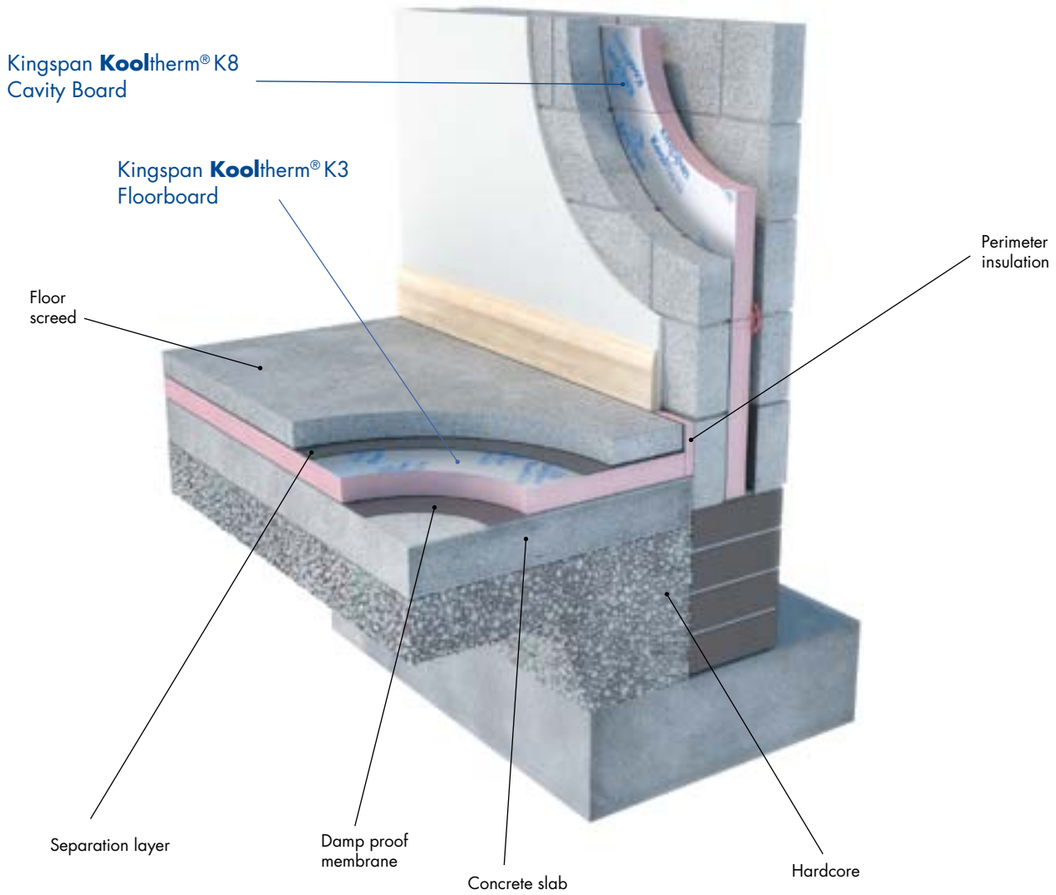
While the insulation is a 'closed cell' material and therefore does not readily absorb moisture it should not be allowed to get wet either in storage or application. Any boards exposed to high moisture levels should be allowed to completely dry off prior to pouring the screed. Any visibly damaged boards should be replaced.

Do

Provide a vertical strip of perimeter insulation between the screed and the external wall - ideally this should also be done for internal loadbearing walls.

Don't

Allow board facings to become excessively damaged during construction - ideally floor insulation should be fitted as late as possible during construction.



Solid Ground Floor	A1	A2	A3	B1	B2	B3	C1
U-Value (W/m²K)	0.12	0.12	0.16	0.19	0.19	0.21	0.25
Insulation	140mm Kooltherm K3	140mm Kooltherm K3	100mm Kooltherm K3	80mm Kooltherm K3	80 mm Kooltherm K3	70mm Kooltherm K3	60mm Therma TF70

Under current regulations a maximum U-value of 0.15 must be achieved in the floor if under floor heating is used.

Solid ground floor

Partial fill cavity wall

A partial fill cavity wall application provides the most effective barrier to rain penetration by allowing the traditional cavity wall to be maintained. The insulation is fixed to the inner leaf of the wall construction maintaining a clear cavity. The residual cavity width should be a minimum of 40mm (50mm in Northern Ireland). Care should be taken to remove excess mortar to allow the boards to be tightly fitted against the blockwork - a cavity board should be used to protect board edges from mortar droppings. Always ensure accurate trimming to achieve close butting of joints and continuity of insulation. Proprietary insulated vertical DPC cavity closers should be used at window and door openings to prevent cold bridging at junction details.

In order to maintain a high level of airtightness the walls should be wet-plastered with particular attention to floor/wall and wall/roof junctions. Alternatively a plasterboard lining could be fitted with a separate vapour control layer or other air tight membrane.

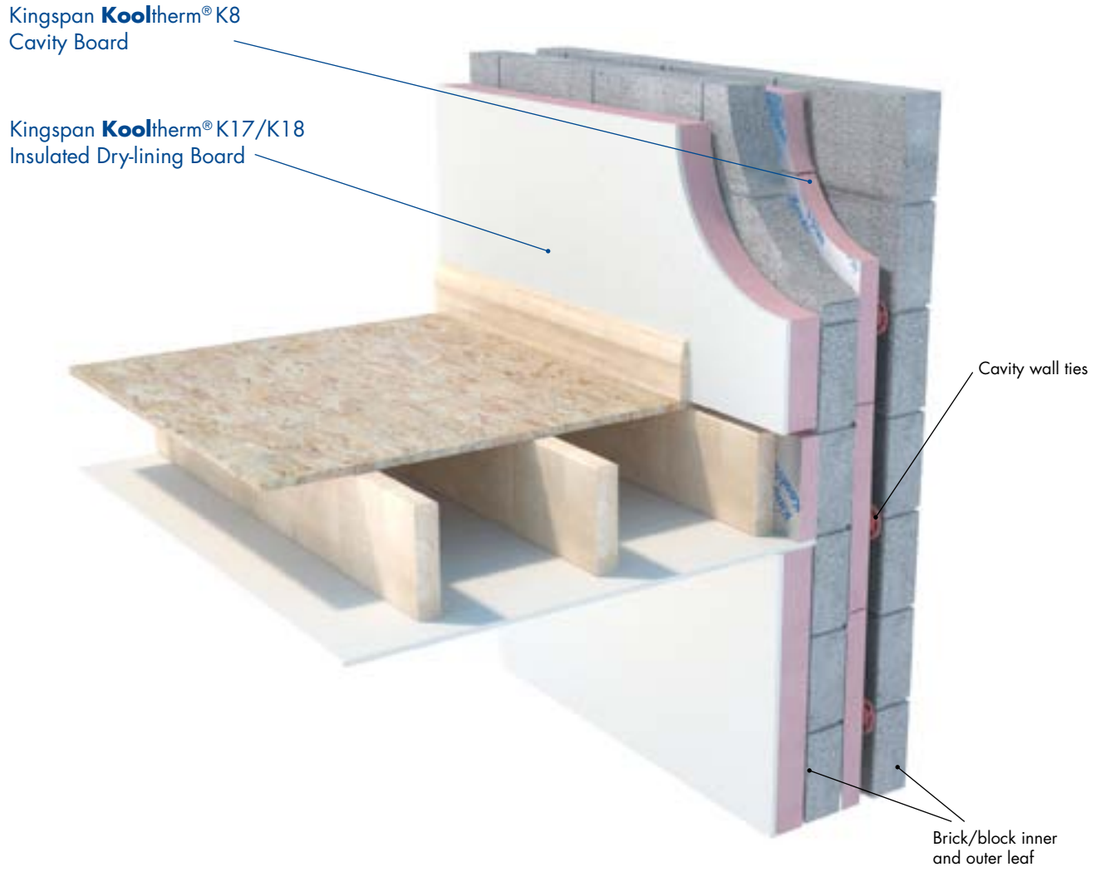
In meeting future U-value requirements an additional insulated plasterboard can be fitted to the inside of the blockwork eg. K17 (if plaster dabbed) or K18 (if mechanically fixed). Note that the K17 will require a minimum of 3 steel fixings per board to comply with fire regulations.

Do

Ensure boards are tightly fitted together and tight against face of inner leaf.

Don't

Chase insulation for service runs - blockwork should be chased for all services.



Partial Fill Cavity Wall	A1	A2	A3	B1	B2	B3	C1
U-Value (W/m²K)	0.12	0.16	0.19	0.21	0.21	0.24	0.26
Insulation	100mm Kooltherm K8 and 62.5mm Kooltherm K17 or K18	80mm Kooltherm K8 and 37.5mm Kooltherm K17 or K18	60mm Kooltherm K8 and 37.5mm Kooltherm K17 or K18	50mm Kooltherm K8 and 37.5mm Kooltherm K17 or K18	50mm Kooltherm K8 and 37.5mm Kooltherm K17 or K18	60mm Kooltherm K8	60mm Therma TW50

External rendered insulation system

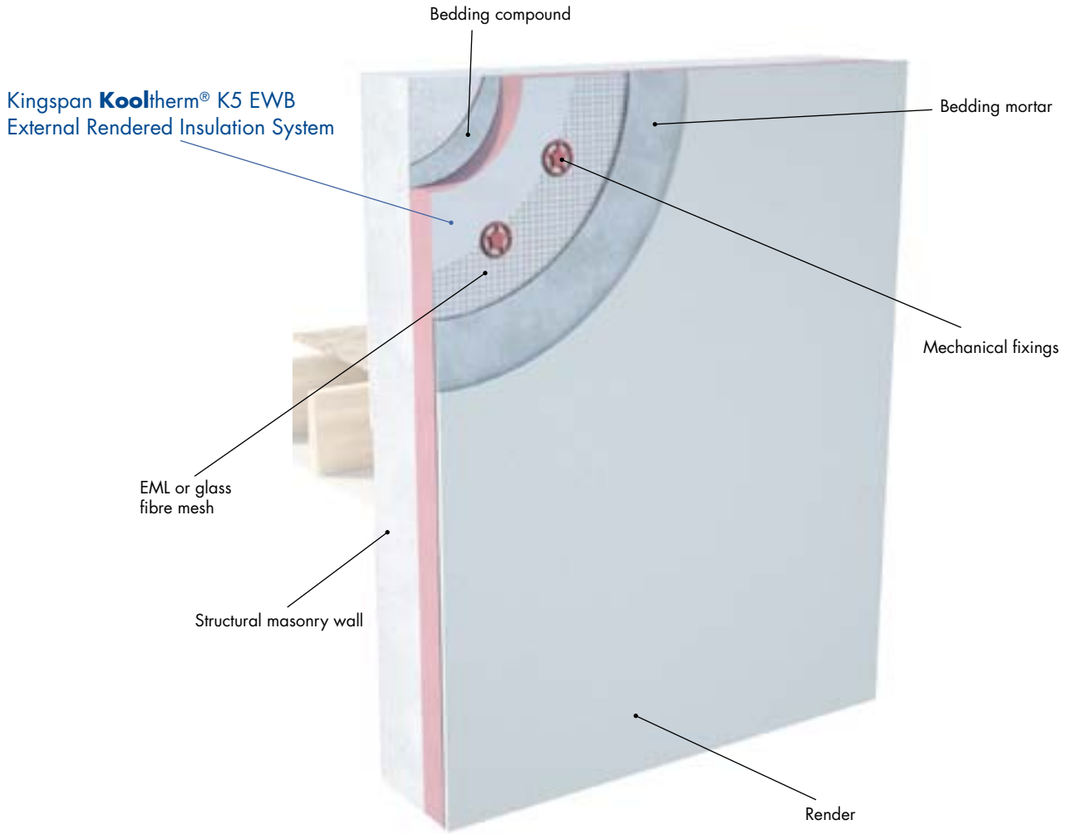
Because insulated render systems are proprietary and utilise different mechanisms for attaching insulation to the wall structure, sitework guidance should be sought from the system manufacturers. However, in the absence of any other guidance Kingspan Kooltherm K5 EWB insulation boards are mechanically fixed to the exterior of masonry external walls using anchor bolts, expansion fixings, proprietary fixings or bedded in render. The building is effectively wrapped in high performance insulation which maintains the structure at room temperature thereby eliminating cold bridge details. In addition maximum thermal mass is maintained inside the insulation which will ensure a more even heating regime and allow storage of passive solar heat gain.

Do

Ensure boards are tightly fitted to each other and substrate.

Don't

Continue external rendered insulation below the damp proof course level - Kingspan Styrozone extruded polystyrene should be used instead.



External Rendered Insulation System	A1	A2	A3	B1	B2	B3	C1
U-Value (W/m²K)	0.12	0.15	0.20	0.22	0.22	0.25	0.25
Insulation	150mm Kooltherm K5 EWB	120mm Kooltherm K5 EWB	90mm Kooltherm K5 EWB	80mm Kooltherm K5 EWB	80mm Kooltherm K5 EWB	70mm Kooltherm K5 EWB	70mm Kooltherm K5 EWB

External rendered insulation system

Timber frame construction

Insulation to required thickness (see chart below) is fitted between the vertical studs of the timber frame system. Ensure accurate trimming to achieve close butting joints and continuity of the insulation, any gaps should be filled with expanding urethane sealant. To avoid thermal bridging through the timber studs an additional layer of insulation either outside of the plywood sheathing board or inside the timber frame studs would be highly recommended and will become mandatory at lower U-Value requirements.

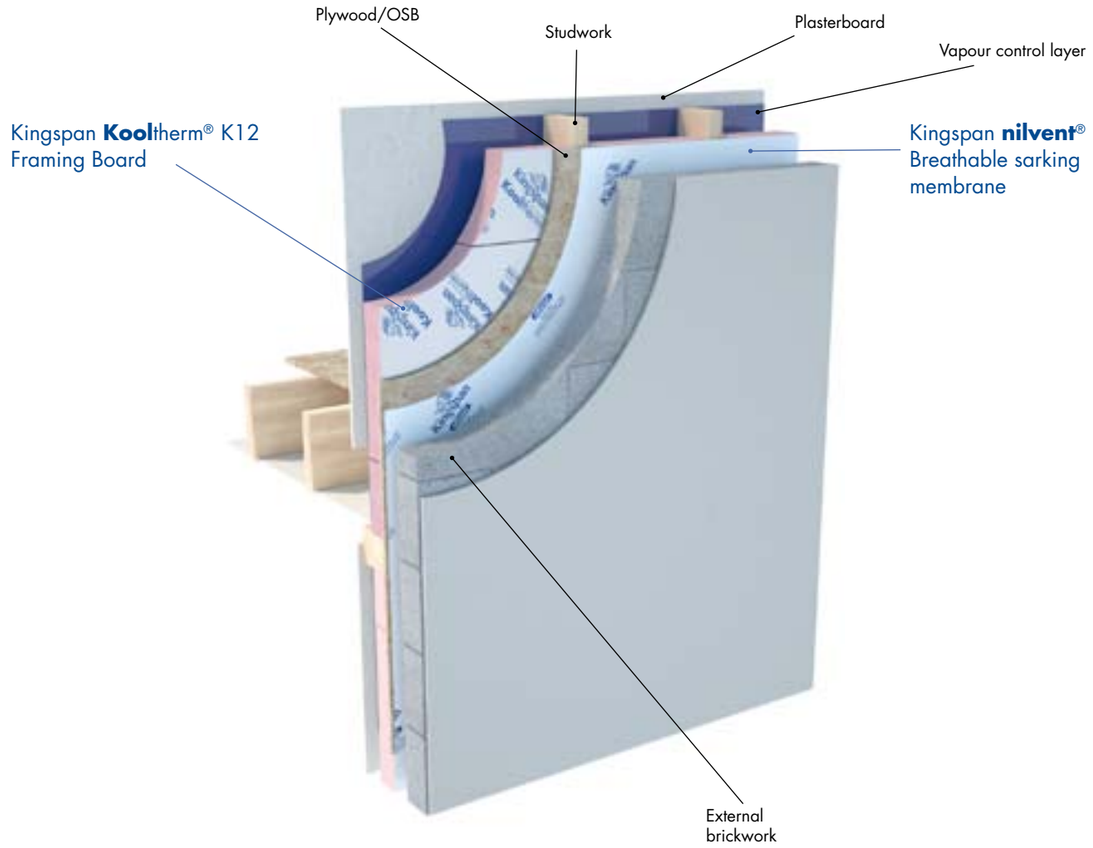
In order to maintain a high level of airtightness a service cavity would be recommended directly behind the plasterboard. This ensures that services can run freely without compromising the vapour control layer.

Do

Ensure a vapour control layer is used on the 'warm side' of the insulation on a timber frame construction.

Don't

Allow excessive gaps between insulation and studwork - gaps can be filled with expanding urethane foam then taped over with foil tape.



Timber Frame Construction	A1	A2	A3	B1	B2	B3	C1
U-Value (W/m²K)	0.12	0.16	0.20	0.22	0.22	0.26	0.27
Insulation	140mm Kooltherm K12 and 60mm Kooltherm K12	120mm Kooltherm K12 and 30mm Kooltherm K12	140mm Kooltherm K12	110mm Kooltherm K12	110mm Kooltherm K12	80mm Kooltherm K12	80mm Therma TW55

Timber frame construction

Cold pitched roof

Insulation to required thickness (see chart below) is fitted between and under the rafters leaving a minimum 50mm ventilated airspace between the top of the insulation and the underside of sarking felt. Using a Kingspan Plasterboard laminate (Kooltherm K17 or K18) eliminates the need to include an additional vapour control layer as this is already built into the product.

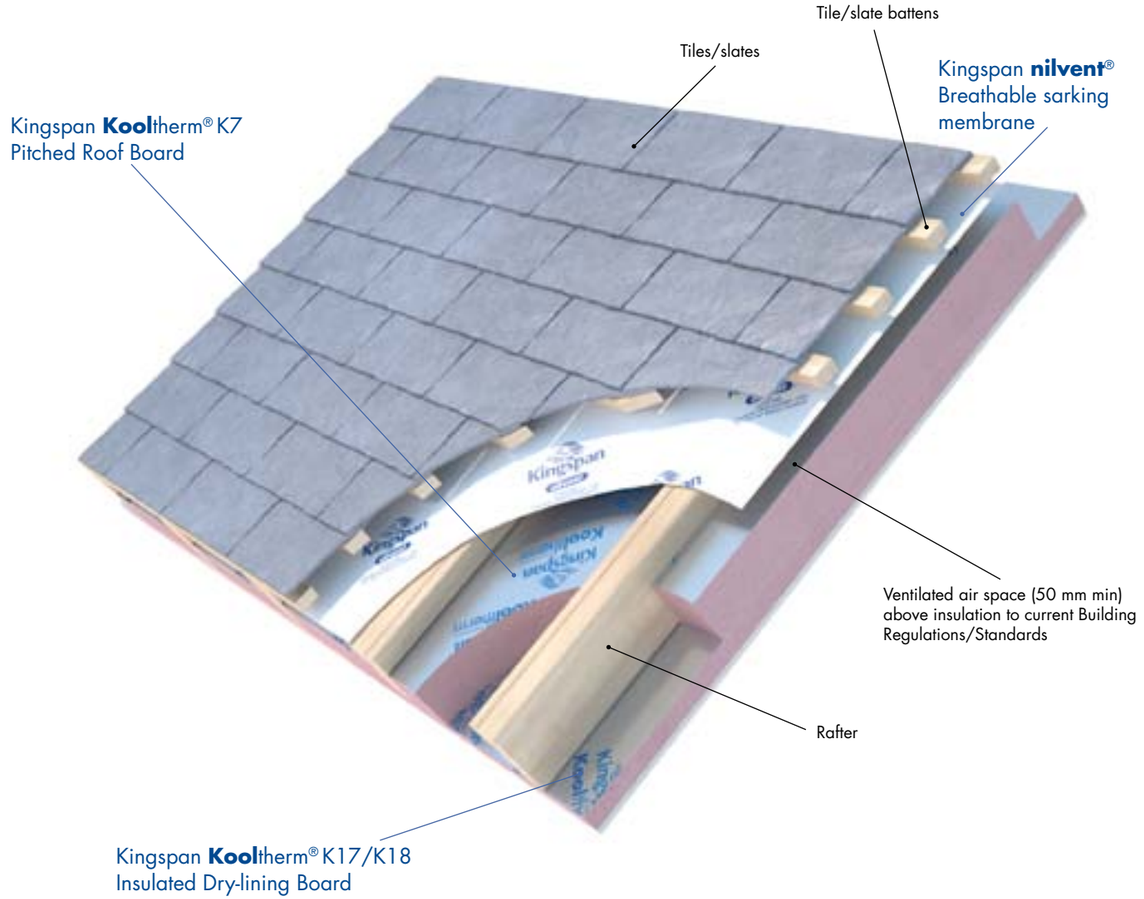
This system is also known as a 'ventilated' roof as traditional ventilation is required at eaves equivalent to 25mm continuous strip and ridge equivalent to 5mm continuous strip. Care should be taken at wall/roof junctions to ensure continuity of the insulation and airtightness.

Do

Ensure a minimum 50mm ventilated air space is provided between insulation and sarking felt (25mm if using a breathable membrane).

Don't

Provide a vapour control layer between insulation layers.



Cold Pitched Roof	A1	A2	A3	B1	B2	B3	C1
U-Value (W/m²K)	0.12	0.12	0.14	0.16	0.16	0.16	0.20
Insulation	140mm Kooltherm K7 and 72.5mm Kooltherm K17 or K18	140mm Kooltherm K7 and 72.5mm Kooltherm K17 or K18	120mm Kooltherm K7 and 62.5mm Kooltherm K17 or K18	100mm Kooltherm K7 and 62.5mm Kooltherm K17 or K18	100mm Kooltherm K7 and 62.5mm Kooltherm K17 or K18	100mm Kooltherm K7 and 62.5mm Kooltherm K17 or K18	100mm Kooltherm K7 and 37.5mm Kooltherm K17 or K18

Warm pitched roof

Insulation to required thickness (see chart below) is fitted between and over the rafters which is then overlaid with a breathable membrane. A minimum 25mm airspace should be provided immediately over the breathable membrane to ensure adequate functioning of the membrane and to allow a drainage passage under the tiles/slates. This is achieved by fixing counter battens along the line of the rafters.

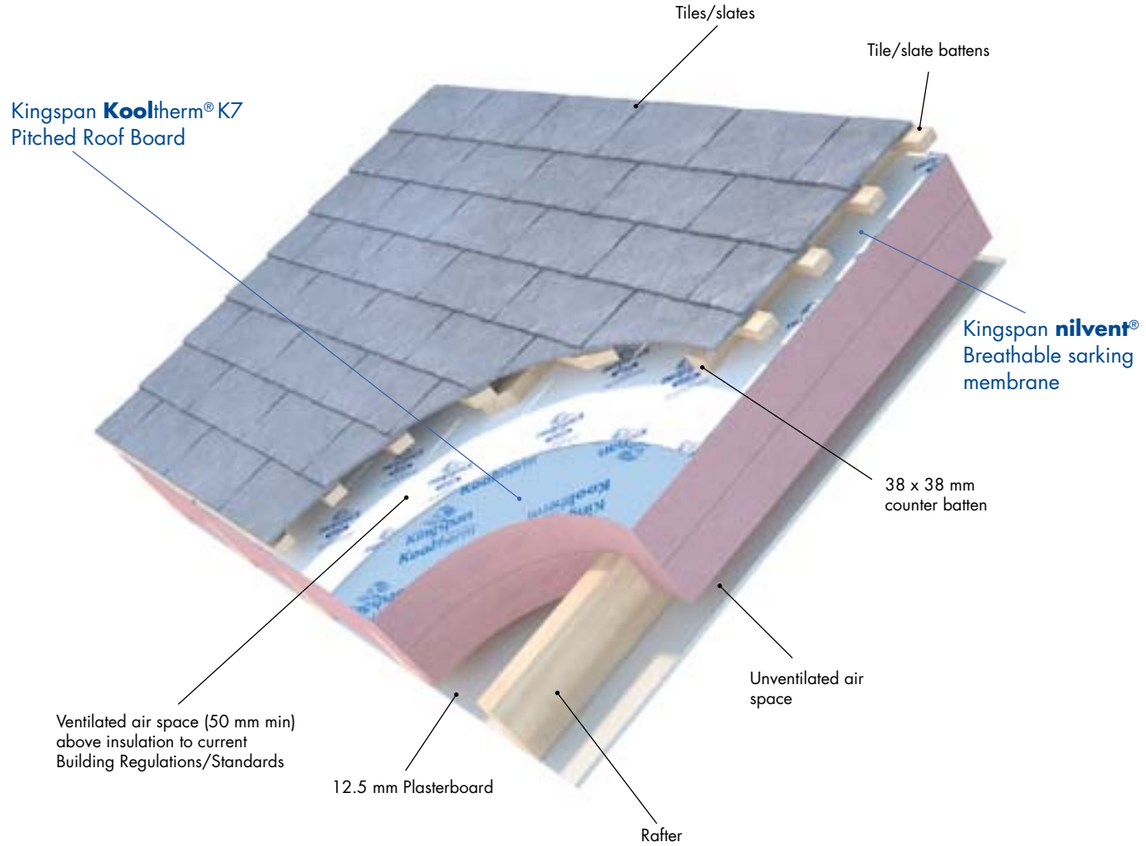
This system is also known as a 'non-ventilated' roof as traditional ventilation at eaves and ridge is not required. Care should be taken at wall/roof junctions to ensure continuity of the insulation and airtightness.

Do

Ensure adequate fixings are used to fasten the upper layer of insulation, tiling battens and counter battens.

Don't

Use tiling battens directly on top of breathable membrane (need to allow path for moisture run off).



Warm Pitched Roof	A1	A2	A3	B1	B2	B3	C1
U-Value (W/m^2K)	0.12	0.12	0.14	0.16	0.16	0.16	0.20
Insulation	100mm Kooltherm K7 between and 80mm Kooltherm K7 above	100mm Kooltherm K7 between and 80mm Kooltherm K7 above	70mm Kooltherm K7 between and 80mm Kooltherm K7 above	60mm Kooltherm K7 between and 70mm Kooltherm K7 above	60mm Kooltherm K7 between and 70mm Kooltherm K7 above	60mm Kooltherm K7 between and 70mm Kooltherm K7 above	50mm Kooltherm K7 between and 50mm Kooltherm K7 above

Warm pitched roof

Flat ceiling

Insulation to required thickness (see chart below) is tightly fitted between the ceiling joists. Using a Kingspan Plasterboard laminate (Kooltherm K17 or K18) eliminates the need to include an additional vapour control layer as this is already built into the product.

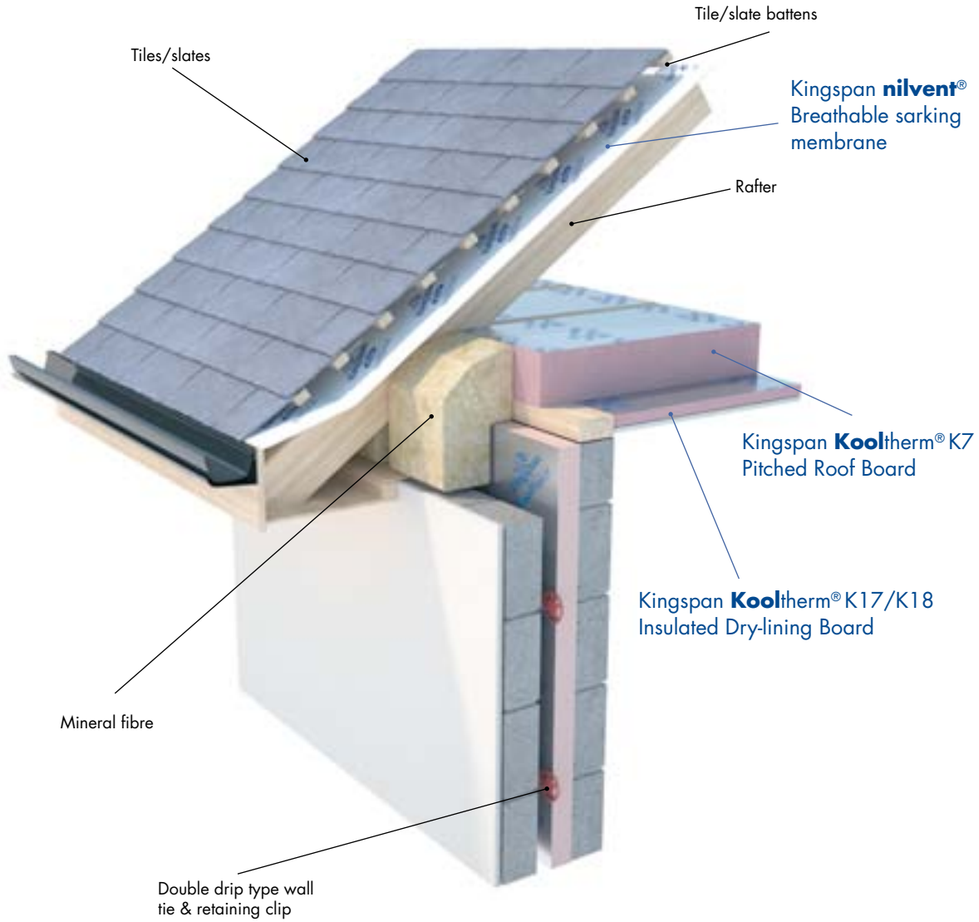
This system is also known as a 'ventilated' roof as traditional ventilation is required at eaves equivalent to a 10mm continuous strip. Care should be taken at wall/roof junctions to ensure continuity of the insulation and airtightness.

Do

Ensure a vapour control layer is provided to underside of joists or use insulated plasterboard such as K17 with built in vapour check layer.

Don't

Obstruct ventilation at eaves level.



Flat Ceiling	A1	A2	A3	B1	B2	B3	C1
U-Value (W/m²K)	0.12	0.12	0.14	0.14	0.14	0.14	0.16
Insulation	190mm Kooltherm K7 and 42.5mm Kooltherm K17 or K18	190mm Kooltherm K7 and 42.5mm Kooltherm K17 or K18	150mm Kooltherm K7 and 42.5mm Kooltherm K17 or K18	150mm Kooltherm K7 and 42.5mm Kooltherm K17 or K18	150mm Kooltherm K7 and 42.5mm Kooltherm K17 or K18	150mm Kooltherm K7 and 42.5mm Kooltherm K17 or K18	180mm Kooltherm K7

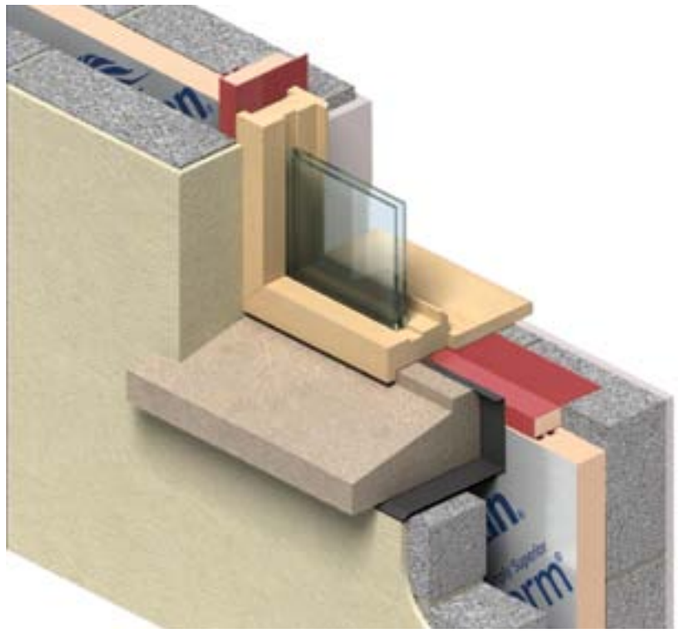
Flat ceiling

Closing Cavities

Due to ever more stringent building regulations requiring increased thermal performance, 'weak' points in the building fabric at junctions between floors, walls and roofs are becoming more and more apparent. These are problem areas that need to be addressed by ensuring airtightness and continuity of insulation to reduce thermal bridging.

This also applies to window and door jambs in traditional cavity wall construction where the internal block leaf returns to meet the external leaf forming a direct thermal bridge. This can cause localised condensation and associated mould growth especially in kitchens, bathrooms, utility rooms and bedrooms due to the relatively cold surface at these junctions.

Kingspan Kooltherm Cavity Closer provides a clean, simple and efficient solution to thermal bridging at wall openings. It insulates and closes the cavity, thus eliminating the need for cut blocks, bricks or special reveal blocks. Kingspan Kooltherm Cavity Closer also avoids the need for separate strips of insulation, damp proof strips or the need for insulated linings that partially mask the frame. With virtually no restriction in frame position, Kingspan Kooltherm Cavity Closer allows the designer much greater versatility in positioning window and door frames within the depth of the reveal.



Summary

The chart below demonstrates how significantly energy costs vary between energy ratings. These costs have been derived from the average results of calculations of a 250m² Bungalow, Dormer and Two-Storey house.

BER	Energy cost per m²/yr (Approx)	Energy cost saving % (Approx compared to C1)	CO_2 emissions (Kg/m²/yr)
A1	€ 2.00	80%	0
A2	€ 3.00	70%	9
A3	€ 5.00	50%	16
B1	€ 6.50	35%	20
B2	€ 7.50	25%	28
B3	€ 8.00	20%	31
C1	€ 10.00	N/A	35

The details in this book have been designed as a guide, a starting point to improving your Building Energy Rating. As characteristics of a home will vary, so too will these requirements, and consideration needs to be given to your specific needs. Kingspan Insulation have a dedicated technical team that can offer you further advice, so why wait to make the grade, futureproof your home today.

Explanation of terms used

Breathable membrane - is an advanced roofing membrane usually placed over the roof timber structure to provide a waterproofing layer. It has the additional properties of being 'breathable' or 'vapour permeable'.

Closed cell - rigid phenolic and polyisocyanurate insulation are closed cell products. This means they can resist both water and moisture ingress and can defy air movement, so will not slag or slump. This ensures they continue to perform over the lifetime of the building, a feature open cell materials can not achieve.

Damp proof membrane - is a layer of reinforced heavy gauge polythene used to prevent rising dampness in solid ground bearing floor construction.

Finite resources - energy resources that will become increasingly scarce, making them more expensive, eg: oil and natural gas.

Futureproof - in the context of this document essentially means taking adequate steps at the earliest possible opportunity to ensure your new home has the ability to be practicably upgraded to comply with ever more stringent building regulations.

Photovoltaics - is a solar power technology that uses solar cells or solar photovoltaic arrays to convert light from the sun directly into electricity forming a renewable energy resource.

Proprietary insulated vertical DPC cavity closers - is essentially a strip of insulation with a factory bonded rigid DPC (Damp Proof Course). Used for window door jams.

Radon barrier - is similar to a Damp Proof Membrane but has the additional benefit of preventing the penetration of radon gas into the building. Radon is a naturally occurring radioactive gas which when present and concentrated under an unprotected floor slab can potentially cause adverse health conditions.

Renewable energy - naturally replenished energy resources that will never be exhausted eg. wind, sun etc.

Robust detail - a drawing detail that promotes best building practice typically for junction details such as floor/wall and wall/roof junctions ensuring maximum air tightness and continuity of insulation.

Sarking felt - a standard roofing felt which is usually placed over the roof timber structure to provide a waterproofing layer.

Separation membrane - is usually laid between the floor screed and insulation. It ensures wet screed can not penetrate the joints in the insulation board thereby preventing unwanted cold bridge details.

Service cavity - in the context of timber frame is essentially a void created by fitting additional battens in which to place services such as electrical cables, or plumbing works.

Thermal bridging - is where a material or part of a building element has a higher thermal conductivity than the adjacent materials. Its ability to transmit more heat creates a relatively colder surface on which warm moist air will condense. This condensation can potentially cause mould growth and eventual fabric decay.

Thermal conductivity - is the rate at which heat travels through one metre thickness of material with a surface area of one metre squared at one degree temperature difference. Therefore the lower the thermal conductivity the higher the thermal performance of the material.

Thermal mass - is the ability of a material to store heat. The amount stored depends primarily on the elements mass ie: concrete or blockwork would have a higher thermal mass than timber. If designed correctly thermal mass can be a means of storing passive solar heat gain which is then released as the building cools down.

U-Value - is the rate of heat loss through a construction element per metre squared per degree of temperature difference. Therefore the lower the U-Value the lower the heat lost.

Vapour control layer - primarily used to minimise moisture migration through an external building element thereby reducing the risk of condensation occurring within the structure (interstitial condensation). It can also aid the airtightness of the building fabric if properly installed and sealed at junctions.

Checklist

Our technical services team can give you more accurate information for your specific project. Answering the quick checklist below is not necessary, but may assist in getting the most from your call. Simply tick the boxes that apply, and complete any information you know, the technical team will help you work out the rest. Ph: 042 975 4297

Have you decided on a target Energy Rating for your home?

A1 ☐ A2 ☐ A3 ☐ B1 ☐

What areas are you insulating?

Floor ☐ Wall ☐ Roof ☐ All ☐

FLOOR:

Do you know the ground floor area and exposed perimeter (i.e. the length of the exposed walls)?

Exposed perimeter		Ground floor area		Perimeter area ratio
	÷		=	

Are you using underfloor heating?

Ground Floor ☐ First Floor ☐

What is the type of ground floor?

Concrete ☐ Suspended Timber ☐

WALLS:

Which of the following are you interested in?

Timber Frame ☐	**Do you want to include a service cavity to maximise airtightness?**	Y ☐ N ☐
Cavity Walls ☐	**What overall cavity width has been allowed?**	mm
External Render ☐	**Are there any restrictions on thickness such as roof overhangs?**	Y ☐ N ☐

ROOF:

What depth are the ceiling joists? mm

What depth are the rafters? mm

How far apart are the rafters/ceiling joists? mm

Is the attic space going to be habitable (i.e. with some form of heating output)? Y ☐ N ☐

Technical Services Advisor:			
Local Sales Manager:		Tel.	
Local Merchant:		Tel.	

NOTES:

Shopping list

	Product Code	Thickness	Quantity	Comments
FLOOR:	Kooltherm K3			
WALLS:	Kooltherm K5 EWB			
	Kooltherm K8			
	Kooltherm K17 or K18			
	Kooltherm K12			
ROOF:	Kooltherm K7			
	Kooltherm K17 or K18			
OTHER:	Kooltherm Cavity Closer			

NOTES:

If it's not Kingspan on the pack, it's not Kingspan in the pack.
Look for the lion on your next delivery.

Kingspan® Insulation

The wheel above is an easy to use tool incorporating all the details in the chart on pages 4 and 5.

KCB020

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