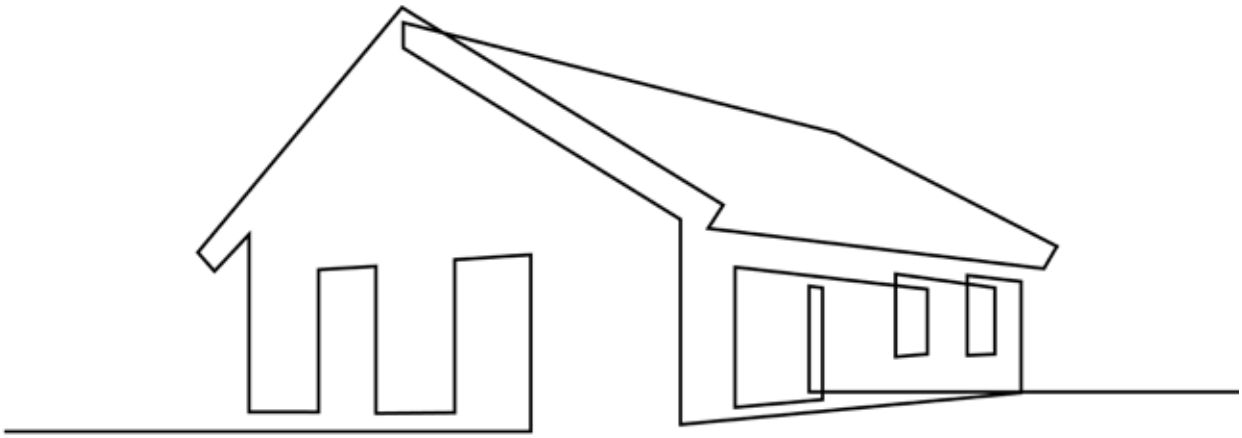
Insulation

Kingspan Residential Solutions

Insulation and Membranes for New Builds and Renovations

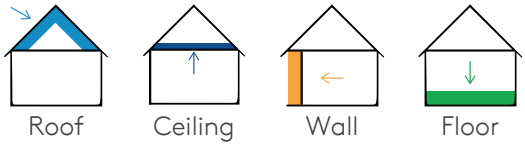


Kingspan®

7 Star Partner

Kingspan Insulation manufactures flexible insulation, rigid board insulation, wall & roof membrane and roof safety mesh for buildings. Our products are supported by technical advice on product performance and application; and customer service.

Our extensive range of products are suitable for a variety of applications:



Kooltherm®

Kooltherm is a range of rigid phenolic insulation boards. It is the thinnest commonly used insulation board for any specific R-value. This means that you can benefit from reduced heating or cooling demand or use thinner boards to gain more space in your building.

Kingspan Kooltherm is CodeMark certified* and exhibit fire performance characteristics. It is made up of thermoset material which hardens and chars in fire situations, giving off very little smoke; unlike thermoplastics, such as polystyrene which melt, soften, and give off thick black smoke.

Kooltherm rigid insulation boards are not only popular in the commercial building sector but are also rapidly gaining fame for residential buildings and modular construction. In fact, Kooltherm help build 7+ star energy efficient homes and helps save space in the restricted modular build-ups.

CODEMARK Australia
CM20045
CM20047
CM80003

Fibre-free Core

AUSTRALIAN MADE

Thermakraft®

Thermakraft is a range of vapour-permeable wraps that protect buildings, and help in condensation management. The range includes synthetic roof underlay and wall wraps which are fire retardant**, water resistant and vapour permeable.

Scan the QR Code to read more on the Kingspan Residential Solutions:

Kingspan GreenGuard®

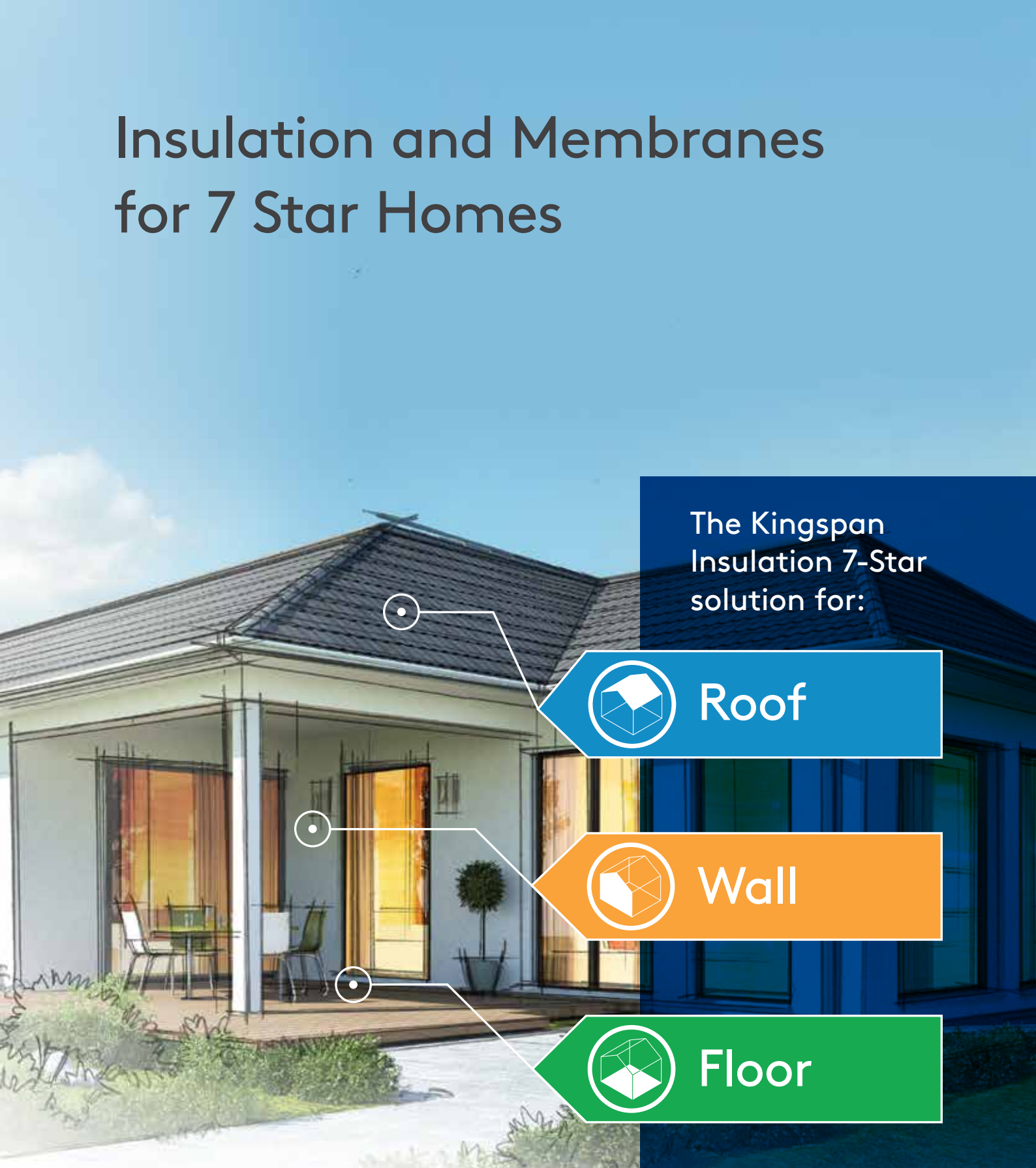
Kingspan GreenGuard is a fibre-free, extruded polystyrene rigid board suitable as slab edge insulation in residential projects.

Scan the QR Code to Book a One-on-One!

*Not Kingspan Kooltherm K3 Floorboard and K10 Plus Soffit Board

**Kingspan Thermakraft Watergate Plus

Insulation and Membranes for 7 Star Homes



The Kingspan Insulation 7-Star solution for:

- Roof
- Wall
- Floor

Kooltherm®
Thermakraft®
Kingspan GreenGuard®

Get In Touch

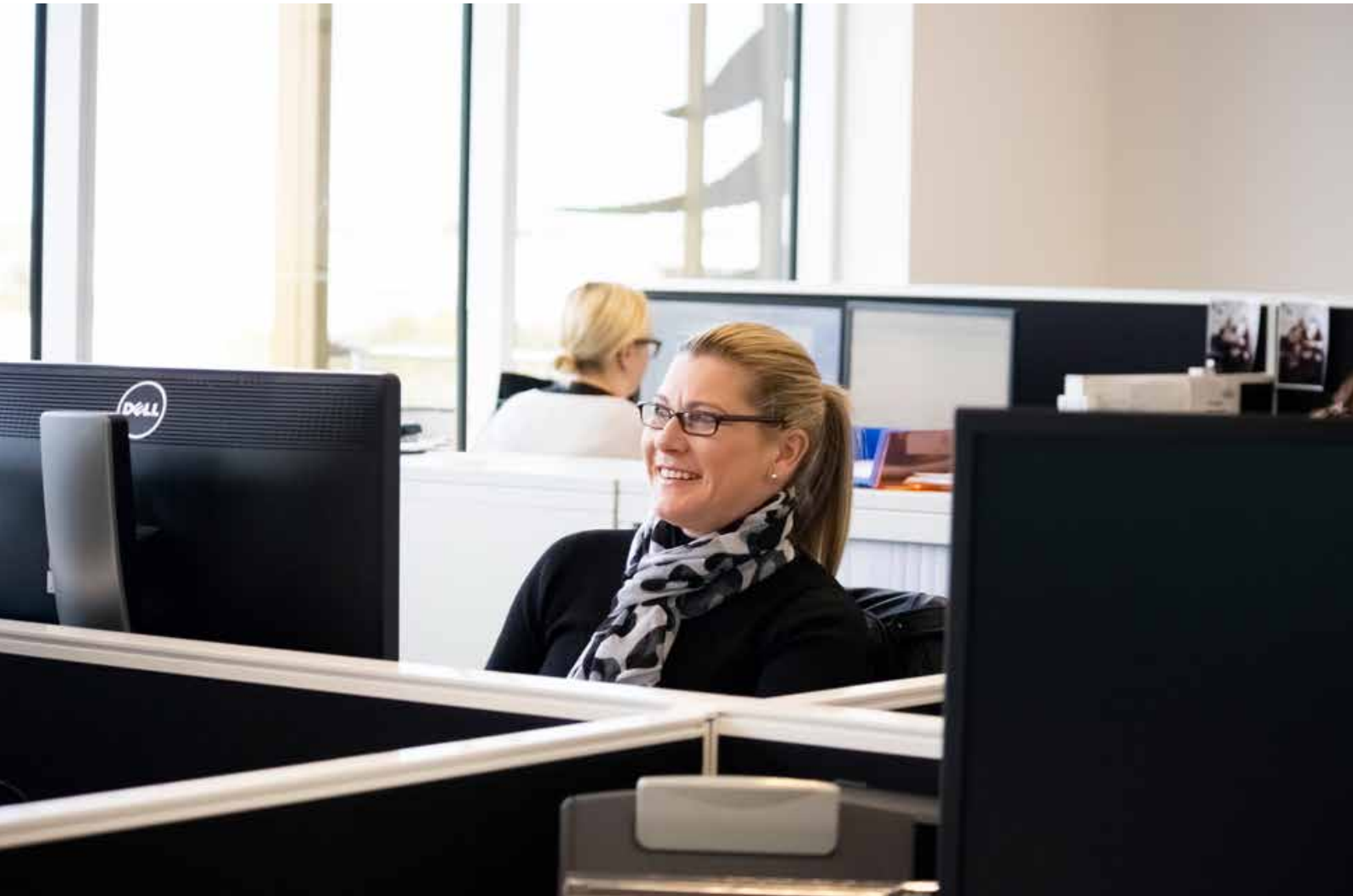
For customer service, please get in touch:

Kingspan Insulation Pty Ltd

T: 1300 247 235
E: info@kingspaninsulation.com.au
www.kingspaninsulation.com.au

For technical enquiries please contact Kingspan Insulation Technical Services on 1300 247 235, email technical@kingspaninsulation.com.au or contact your sales representative.

Scan the QR Code to Book a One-on-One!



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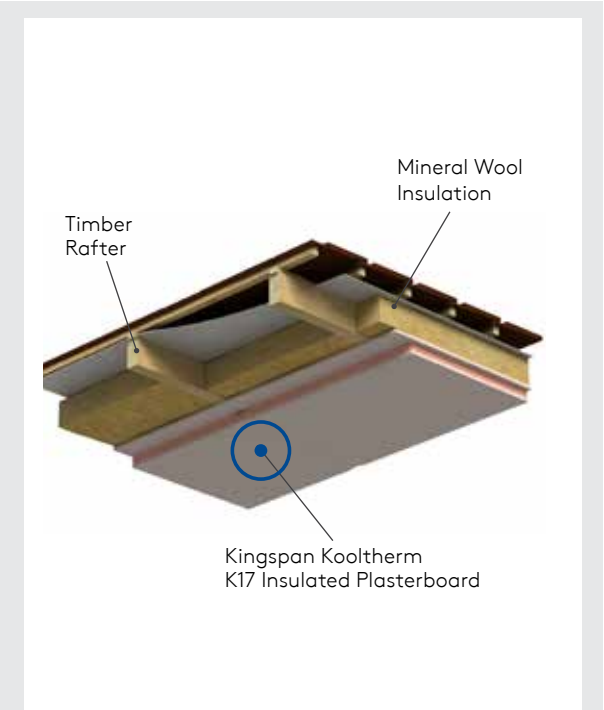
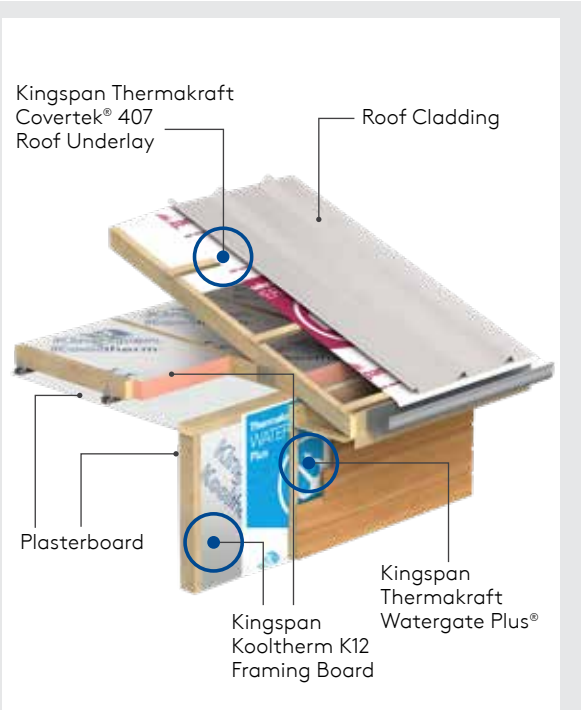
Product Solutions

Kingspan 7+ Star Residential Solution: Roof and Floor



Continuous Insulation for Timber Frame for Skillion Roof

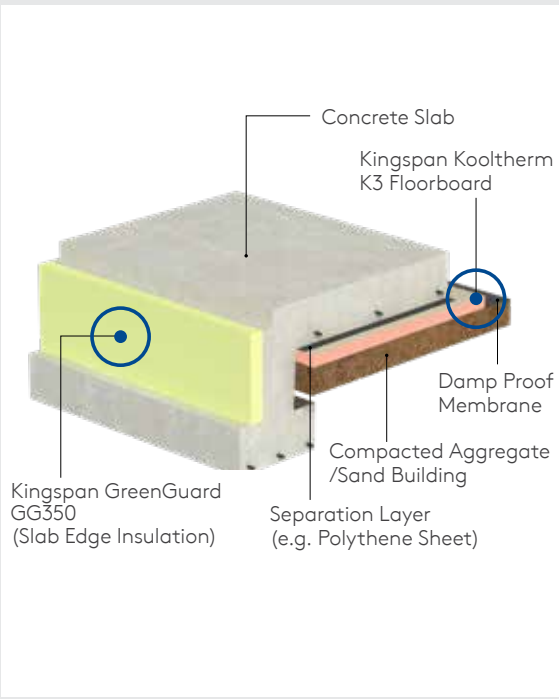


Rigid Board Insulation between Studs for Timber Frame for Pitched Roof

How to achieve a 7+ Star Energy Rated Home by Insulating Ceilings and Floors?

- To increase the thermal performance of your home, start from the ground with Kingspan Kooltherm K3 Floorboard 25mm R1.1* or 50mm R2.3*.
- Using Kingspan Kooltherm K12 Framing Board between the horizontal ceiling battens in a timber/steel frame system can result in achieving a higher R-value compared to standard glasswool batts. Various thicknesses of Kingspan Kooltherm K12 Framing Board can achieve an R-value as high as R7.2
- By fitting the Kooltherm K17 Insulated Plasterboard as continuous insulation on internal ceiling applications in conjuction with conventional glasswool insulation, a higher R-value can be achieved. Furthermore it also reduces thermal bridging especially when steel frames are used.
- In combination with Kingspan Thermakraft Covertek 407 vapour permeable wall wrap, your home will be warmer in winter, cooler in summer and drier all year round.

*These are declared product R-values for these products.



Underfloor and Slab Edge Insulation

Kingspan Kooltherm K12 Framing Board

Kingspan Kooltherm K3 Floor Board

Kingspan GreenGuard GG350

Kingspan Thermakraft Watergate Plus Wall Wrap

Kingspan Thermakraft Covertek 407 Roof Underlay

Insulation Pack Sizes
Kingspan Kooltherm K3 Floorboard
25mm x 2400mm x 1200mm (12 x per pack)
50mm x 2400mm x 1200mm (6 x per pack)
Kingspan GreenGuard GG350 (Slab Edge Insulation)
40mm x 2400mm x 300mm (5 x per pack)

Membranes Pack Sizes
Kingspan Thermakraft Watergate Plus
1370mm wide 36.5m long 50m² coverage*
1500mm wide 30m long 45m² coverage*
2740mm wide 30m long 82m² coverage*
3000mm wide 30m long 90m² coverage*
Kingspan Covertek 407
1250mm wide 40m long 50m² coverage*

*Note: m² is the roll size. For actual coverage, allow for laps and joins.

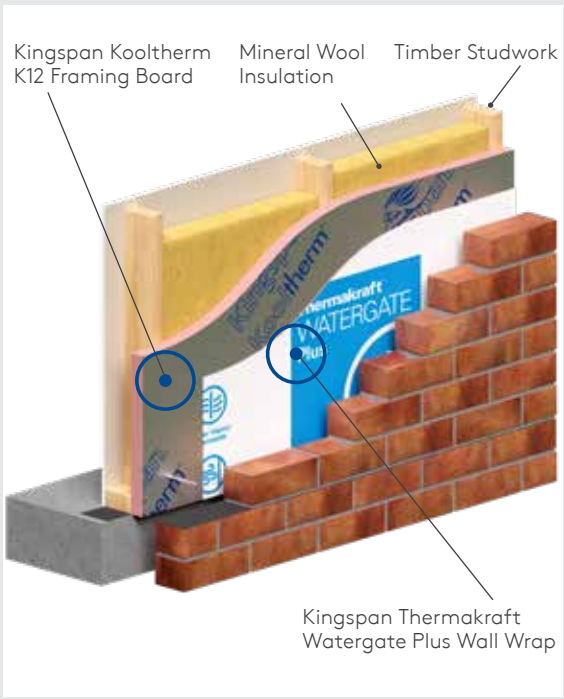
Scan the QR Code to Book a One-on-One!

Kingspan®

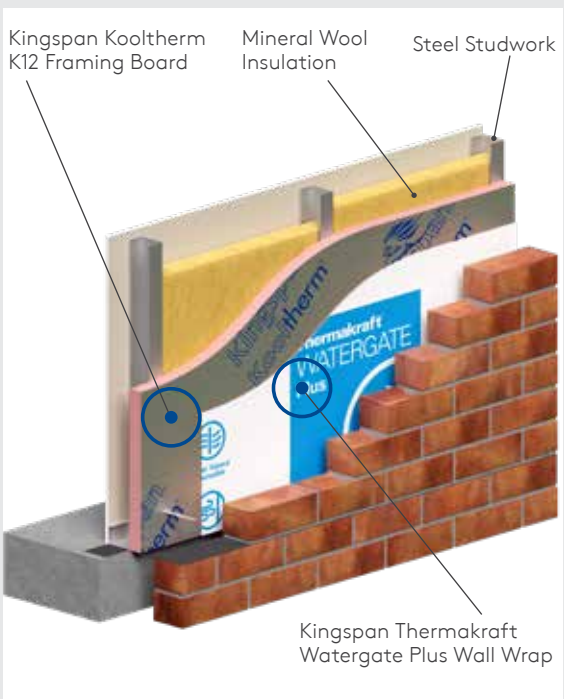
7 Star Partner

Kingspan 7+ Star Residential Solution: Wall

External Insulation



Externally Lined Continuous Insulation for Timber Frame



Externally Lined Continuous Insulation for Steel Frame

In Between Stud Insulation

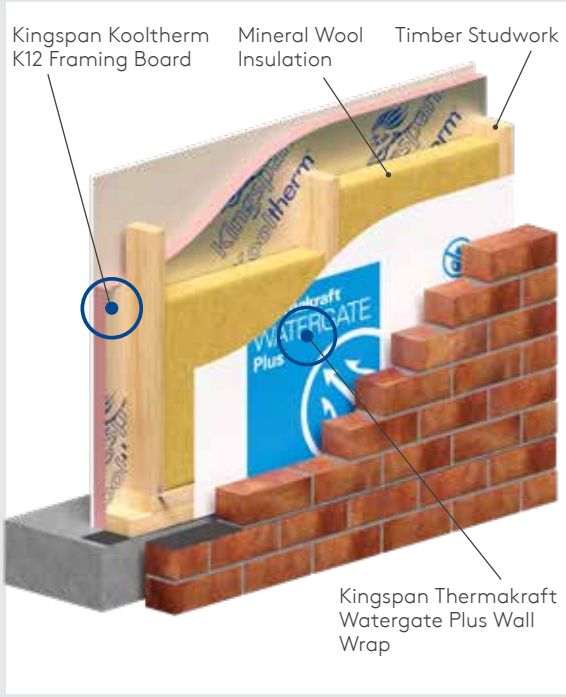
Rigid Board Insulation between Studs for Timber Frame

How to achieve a 7+ Star Energy Rated Home by Insulating Walls?

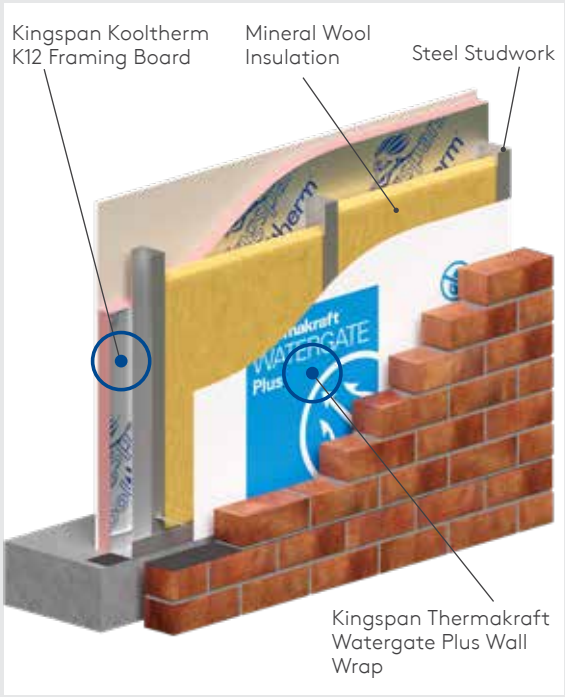
- By fitting the Kingspan Kooltherm K12 Framing Board between the vertical studs of the timber/steel frame system, a higher R-value can be achieved. By replacing your standard glasswool R2.5* 90mm batt with Kingspan Kooltherm K12 Framing Board R3.6* 80mm, between the studs, can help deliver a 7+ Star rating and negate the need to increase the ceiling insulation.
- By fitting the Kingspan Kooltherm K12 Framing Board as continuous insulation on either the internal or the external side of the frame in conjuction with conventional glasswool insulation, a higher R-value can be achieved. Furthermore it also reduces thermal bridging especially when steel frames are used.
- In combination with Thermakraft Watergate Plus vapour permeable wall wrap, your home will be warmer in winter, cooler in summer and drier all year round.

*These are declared product R-values for these products.

Internal Insulation



Internally Lined Continuous Insulation for Timber Frame



Internally Lined Continuous Insulation for Steel Frame

Product Pack Sizes
Kingspan Kooltherm K12 Framing Board
80mm x 1200mm x 403mm (6 x per pack)
80mm x 1200mm x 413mm (6 x per pack)
80mm x 1200mm x 553mm (6 x per pack)
80mm x 1200mm x 563mm (6 x per pack)
Kingspan Thermakraft Watergate Plus
1370mm wide 36.5m long 50m² coverage*
1500mm wide 30m long 45m² coverage*
2740mm wide 30m long 82m² coverage*
3000mm wide 30m long 90m² coverage*

*Note: m² is the roll size. For actual coverage, allow for laps and joins.

Kingspan Kooltherm K12 Framing Board

Kingspan Kooltherm K17 Insulated plasterboard

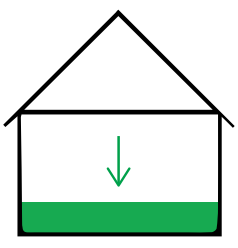
Thermakraft Watergate Plus Wall Wrap

Scan the QR Code to Book a One-on-One!

Kingspan

7 Star Partner

Floor Applications



Slab On Ground

Insulation to required thickness is laid over the damp proof membrane ideally in a 'break bonded' (i.e. 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 polythene sheet to ensure that wet concrete cannot penetrate the joints of the insulation boards.

If required, insulation can be placed vertically along the entire perimeter of the external slab edge to ensure that the concrete slab is separated from the external soil/earth - this will create a robust detail and therefore prevent cold bridging.

Consideration should be given to the position of the insulation when there is in-slab heating & cooling systems. The insulation can either expose the system to the thermal mass of the concrete or isolate it. For a 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. The designer or supplier of the heating/cooling system should be consulted prior to making a decision on the insulation location.

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.

The vertical slab edge insulation should be the Kingspan GreenGuard GG350, which is an XPS material and suitable for use in wet/damp applications.

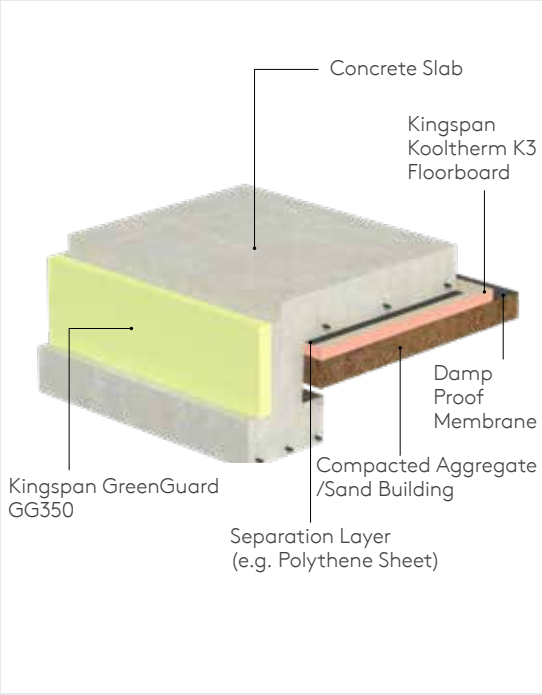


Figure 1. Kingspan Kooltherm K3 Floorboard and Kingspan GreenGuard GG350 as Slab Edge

Kingspan Kooltherm K3 Floorboard Declared Product R-value (AS/NZS 4859.1:2018 / ASTM C518-2017)	
Nominal Product Thickness	Declared Product R-value (W/m.K) at 23 °C
25 mm	R1.10
50 mm	R2.30

Kingspan GreenGuard GG350 Declared Product R-value (AS/NZS 4859.1:2018 / ASTM C518-2017)	
Nominal Product Thickness	Declared Product R-value (W/m.K) at 23 °C
40 mm	Exceeds R1.0

Kingspan GreenGuard Product Pack Size
40mm x 2400mm x 300mm (5 x per pack)

Do

Ensure boards are protected during installation from wheeled/foot traffic by using scaffold planks or other protective measures.

Don't

Do not place under any direct point loads or foundations including slab thickening.

Suspended Timber Ground Floor

Insulation to required thickness can be placed in suspended floor construction both in a new construction or as a retrofit solution on existing properties.

Unlike Kooltherm, mineral wool is not rigid, and it is therefore difficult to ensure complete fill of the void between floor joists in suspended timber floors, without special attention to detail in the installation of its support e.g. netting.

Fitting the insulation boards snugly between the floor joists will ensure optimum thermal performance can be achieved with minimal air leakage. Measure the distance between the joists accurately prior to cutting the boards as spacings can vary.

Side–nail 25 mm x 25 mm timber battens to the joists or partially drive galvanised nails into the side of the joists in the appropriate position to hold the boards in place.

Any narrow gaps between a joist and perimeter wall should be insulated by specially cut pieces of board which in turn should be supported on blocks nailed to the underside of the joists. Gaps less than 25 mm wide should be filled with expanding urethane foam sealant.

Kooltherm K3 Floorboard does not provide a nutritional source for pests/vermin.

Kingspan Kooltherm K3 Floorboard Declared Product R-value (AS/NZS 4859.1:2018 / ASTM C518-2017)	
Nominal Product Thickness	Declared Product R-value (W/m.K) at 23° C
25 mm	R1.10
50 mm	R2.30

Kingspan Kooltherm K3 Floorboard Product Pack Sizes
25mm x 2400mm x 1200mm (12 x per pack)
50mm x 2400mm x 1200mm (6 x per pack)

Do

Push the cut insulation boards between the joists so they are in contact with the underside of the floor boards.

Don't

Do not leave gaps or voids between the insulation boards, which would negatively impact the thermal efficiency of the system.

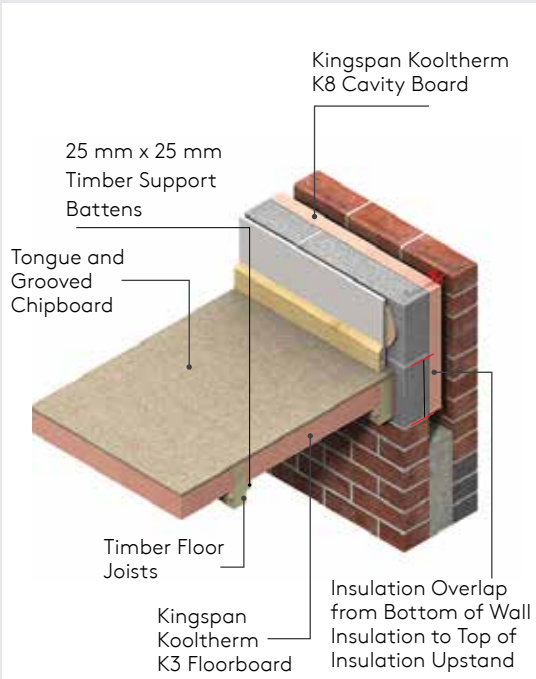
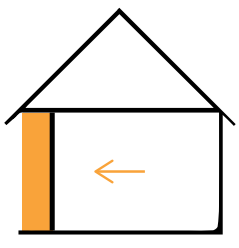


Figure 2. Kingspan K3 Floorboard

Kooltherm K3 rigid board is easy to install compared to mineral wool, which requires extra care to ensure complete void fill between floor joists.

Wall Applications



Timber Framed Wall

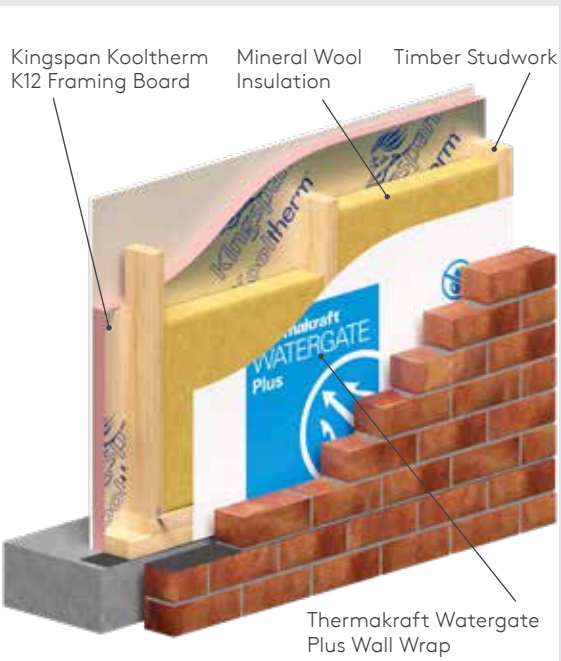


Figure 3. Internally Lined Insulation

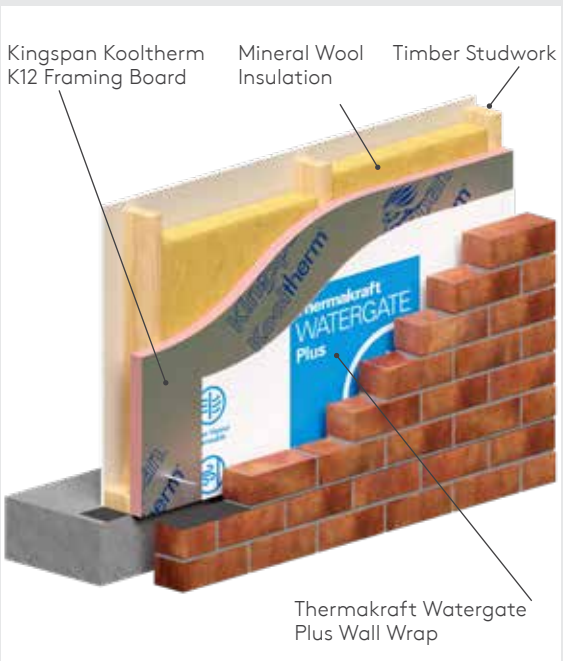


Figure 4. Externally Lined Insulation

Insulation to required thickness is fitted between the vertical studs of the timber frame system. Ensure accurate trimming to achieve close butting joints and continuity of the insulation. Avoid any gaps within the mineral wool insulation and ensure the mineral wool insulation is not over compressed. To avoid thermal bridging through the timber studs, an additional layer of insulation inside the timber frame studs is recommended.

For meeting higher R-value requirements an additional insulated plasterboard can be fitted to the inside of the stud frame. Kingspan Thermakraft Watergate Plus is fixed to timber framing using fasteners such as galvanised 6-8mm staples or 20mm large head galvanised clouts.

Kingspan Kooltherm K12 Framing Board Product R-value (AS/NZS 4859.1:2018 / ASTM C518-2017)	
Nominal Product Thickness	Declared Product R-value (W/m.K) at 23°C
80 mm	R3.60

Thermakraft Watergate Plus (AS/NZS 4200.1:2017)	
Properties	Classification
Duty Classification	Light Wall
Vapour Permeance	Class 4 Vapour Permeable

A continuous layer of closed cell insulation will significantly improve the level of airtightness.

Do

Ensure the depth of insulation used in the stud is the correct thickness. Compressing mineral wool insulation will reduce the materials efficiency.

Always run the Watergate Plus product horizontally.

Don't

Do not leave Watergate Plus exposed to the weather or UV for more than 60 days.

The average area of the timber framing that makes up external walls in residential new builds is over 34%.*

*BRANZ: External Research Report ER64 [2021]

Steel Framed Wall

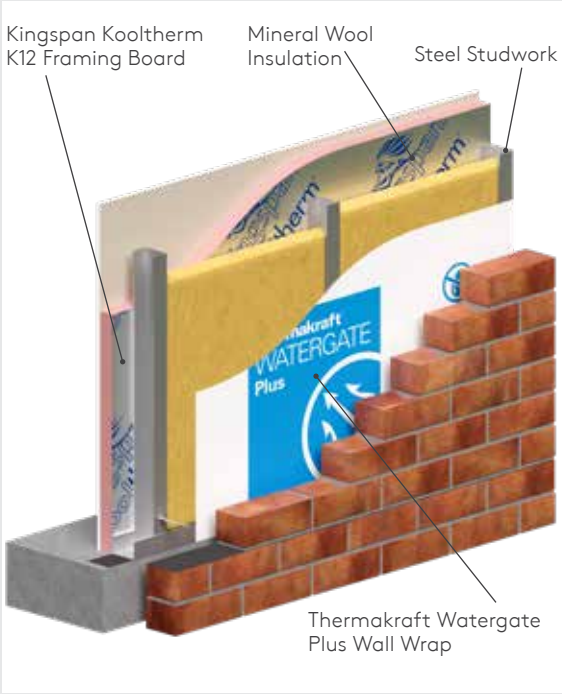


Figure 5. Internally Lined Insulation

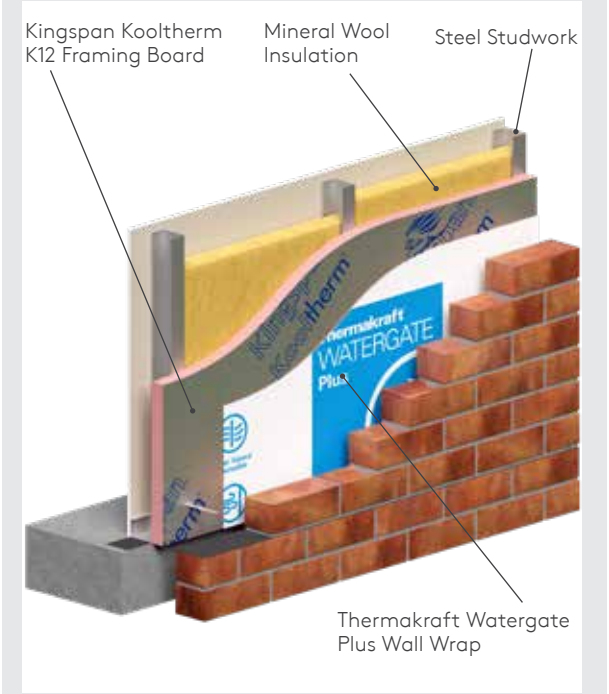


Figure 6. Externally Lined Insulation

Insulation to required thickness is fitted between the vertical studs of the steel frame system. Ensure accurate trimming to achieve close butting joints and continuity of the insulation. Avoid any gaps within the mineral wool insulation and ensure the mineral wool insulation is not over compressed. To avoid thermal bridging through the steel studs, an additional layer of insulation outside/inside the timber frame studs is recommended.

The Watergate Plus is fixed to steel framing using construction grade double-sided tape or adhesive.

Do

Ensure the depth of insulation used in the stud is the correct thickness. Compressing mineral wool insulation will reduce the materials efficiency.

Always run the Watergate Plus product horizontally.

Don't

Do not leave Watergate Plus exposed to the weather or UV for more than 60 days.

Kingspan Kooltherm K12 Framing Board Product R-value (AS/NZS 4859.1:2018 / ASTM C518-2017)	
Nominal Product Thickness	Declared Product R-value (W/m.K) at 23°C
80 mm	R3.60

Thermakraft Watergate Plus (AS/NZS 4200.1:2017)	
Properties	Classification
Duty Classification	Light Wall
Vapour Permeance	Class 4 Vapour Permeable

Cladded Wall

Figure 7. Internally Lined Insulation

Figure 8. Externally Lined Insulation

When an external wall has a large level of services or requires a tiled finish, utilise the Kingspan Kooltherm K12 Framing Board in combination with a batten or internal frame.

Insulation to the required thickness can be paced on framed and masonry constructions in both a new construction or as a retrofit solution. Applying a batten or internal frame fixed through the insulation into the structure will enable the use of a specialty plasterboard lining or architectural designed finishes.

The specific insulation thickness may be built up from two thinner layers. As far as practically possible, the board joints in the two adjacent layers should be offset relative to each other, offering a robust thermal solution.

The Watergate Plus wall wrap is fixed to timber framing using construction grade double-sided tape or adhesive.

Do

Ensure adequate fixings are used to fasten the batten to the wall structure, through the layer of insulation.

Don't

Do not leave gaps or voids between the insulation boards, which would negatively impact the thermal efficiency of the system.

Kingspan Kooltherm K12 Framing Board Product R-value (AS/NZS 4859.1:2018 / ASTM C518-2017)	
Nominal Product Thickness	Declared Product R-value (W/m.K) at 23° C
25 mm	R1.10
30 mm	R1.30
40 mm	R1.75
45 mm	R2.05
50 mm	R2.30
80 mm	R3.60

Kingspan Kooltherm K12 Framing Board Product Pack Sizes
80mm x 1200mm x 403mm (4 x per pack)
80mm x 1200mm x 553mm (4 x per pack)

Thermakraft Watergate Plus (AS/NZS 4200.1:2017)	
Properties	Classification
Duty Classification	Light Wall
Vapour Permeance	Class 4 Vapour Permeable

Renovated Wall

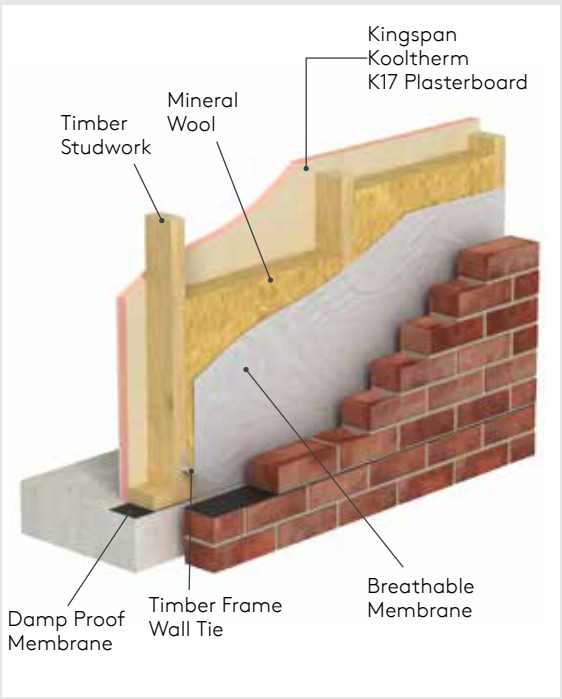


Figure 9. Internally Lined Insulation

Figure 10. Adhesive Bonding to Masonry Block Wall (140 mm)

Insulation to required thickness can be placed on framed and masonry constructions in both a new construction or as a retrofit solution.

The Kooltherm K17 Insulated Plasterboard can reduce heating bills and/or increase thermal comfort, while having no impact on the external appearance of the building.

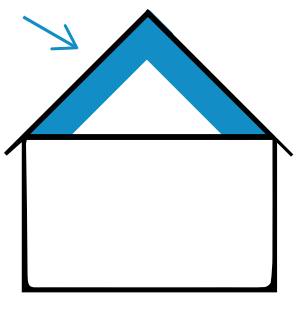
Likely to be the most acceptable solution to refurbishing the wall if the wall is being re-plastered or constraints on external aesthetics

Rooms heat up more quickly as the insulation is close to the internal surface of the room.

Kingspan Kooltherm K17 Insulated Plasterboard Product R-value (AS/NZS 4859.1:2018 / ASTM C518-2017)	
Nominal Product Thickness (inc. Plasterboard)	Declared Product R-value (W/m.K) at 23 °C
35 mm	R1.15
40 mm	R1.35
50 mm	R1.80

Wall insulation on the internal face of masonry, will reduce heating bills and increase thermal comfort.

Roof Applications



Skillion Roof

When upgrading an existing raked/cathedral ceiling, applying an insulated plasterboard to the underside of the rafters is an effective continuous insulation solution. Insulation to the required depth pre-bonded to plasterboard can be screw fixed to the existing roof structure.

If the existing ceiling lining is in good condition it may be possible to fasten the insulated plasterboard through the existing lining, into the structure. It would be recommended to identify and mark the fixing points on the ceiling, prior to covering with the new insulated plasterboard. This process can also be used for flat ceiling where adequate headroom exists.

Thermakraft Covertek 407 can be run both vertically or horizontally when being fixed at maximum 300 mm centres to all framing members

Kingspan Kooltherm K17 Insulated Plasterboard Product R-value (AS/NZS 4859.1:2018 / ASTM C518-2017)	
Nominal Product Thickness (inc. Plasterboard)	Declared Product R-value (W/m.K) at 23 °C
35 mm	R1.15
40 mm	R1.35
50 mm	R1.80

Kingspan Thermakraft Covertek 407 (AS/NZS 4200.1:2017)	
Properties	Classification
Vapour Permeance	Class 4 Vapour Permeable

Do

Ensure the roof structure is in good dry condition prior to lining over with an insulated plasterboard.

Ensure that mandatory minimum requirements for ceiling height/headroom are not compromised.

The roof underlay can be installed above roof battens.

Don't

Don't use an adhesive fix to existing ceiling linings. Mechanical fixings should only be used.

Do not use the roof underlay in roof pitches less than 3 degrees.

Kingspan Kooltherm offers the thinnest commonly used solution. Greater thicknesses of under rafter insulation could mean an unacceptable reduction in headroom.

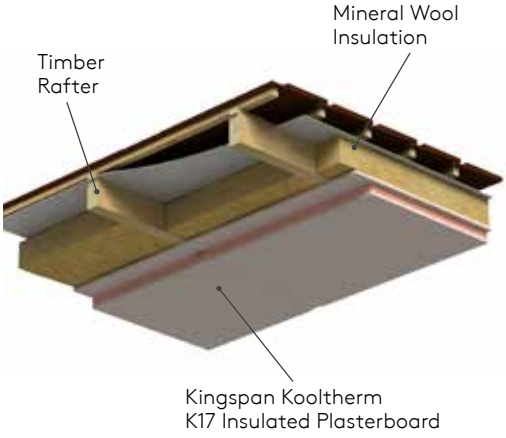


Figure 11. Kingspan K17 insulated Plasterboard in Skillion Roof

Pitched Roof

Insulation to required thickness is fitted between and under the rafters leaving an airspace between the top of the insulation and the underside of sarking membrane for drainage. Technical advice should be should be sought for very cold climates.

This system can also be known as a 'ventilated' roof, where traditional ventilation is required at eaves, ensuring adequate displacement of moisture which may build up underneath the sarking membrane. Care should be taken at wall/roof junctions to ensure continuity of the insulation and airtightness.

Thermakraft Covertek 407 can be run both vertically or horizontally when being fixed at maximum 300 mm centres to all framing members.

Kingspan Kooltherm K12 Framing Board Product R-value (AS/NZS 4859.1:2018 / ASTM C518-2017)	
Nominal Product Thickness	Declared Product R-value (W/m.K) at 23° C
25 mm	R1.10
30 mm	R1.30
40 mm	R1.75
45 mm	R2.05
50 mm	R2.30
80 mm	R3.60

Kingspan Thermakraft Covertek 407 (AS/NZS 4200.1:2017)	
AS/NZS 4200.1 Properties	AS/NZS 4200.1 Classification
Vapour Permeance	Class 4 Vapour Permeable

Do

Ensure an appropriate air space is provided between insulation and sarking membrane. This can vary depending on the specific sarking used.

Can be installed above roof battens

Don't

Don't use a thickness of an insulated plasterboard which would reduce the headroom to below mandatory minimum requirements.

Do not use in roof pitches less than 3 degrees

If renovating, creating a 'room in the roof' will virtually always increase sale value by significantly more than the renovation costs.

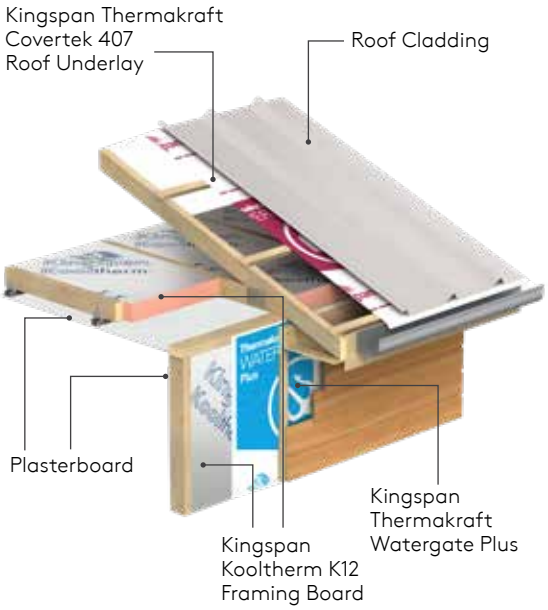


Figure 12. Rigid Board Insulation between Studs for Timber Frame for Pitched Roof

Contact Details

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