

I have checked this specification and related Q&A thoroughly and have verified its content and technical accuracy.

It is approved for issue

It is approved for issue with changes as marked

Signed: A. Robertson.....Date: 12 November 2018

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## 4711KS KINGSPAN KOOLTHERM® SOFFIT & FRAMING BOARDS

### 1. GENERAL

*If you have pre-customised this work section using the "questions and answers" provided as part of the downloading process, it may be necessary to amend some clauses to suit the final project-specific version.*

*The section must still be checked and customised to suit the project being specified, by removing any other irrelevant details and adding project-specific details and selections.*

This section relates to the supply and installation of **Kingspan Kooltherm®** products providing thermal insulation for concrete soffits and behind wall lining and framed walls.

It includes:

- Kooltherm® K10G2 Soffit Board
- Kooltherm® K12 Framing Board
- and associated componentry necessary to complete the installation.

*Modify expand this clause to suit requirements of this specification section.*

### 1.1 RELATED WORK

Refer to ~ for ~

*Include cross references only to other work sections where they include directly related work:*

*Also refer to the appropriate concrete section for insulation under concrete slabs.*

*Refer to the appropriate concrete section for reinforcement*

*Refer to the appropriate concrete section for handling, placing and curing of concrete.*

### Documents

### 1.2 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

[NZBC C/AS1-AS7](#) Protection from fire

[NZBC H1/AS1](#) Energy efficiency

[AS/NZS 1530.3](#) Methods for fire tests on building materials, components and structures - Simultaneous determination of ignitability, flame propagation, heat release and smoke release

[NZS 4218:2004](#) Energy efficiency - Small building envelope

[NZS 4220](#) Code of practice for energy conservation in non-residential buildings

[NZS 4243.1](#) Energy efficiency - Large buildings - Building thermal envelope

[NZS 4246](#) Energy efficiency - Installing insulation in residential buildings

[AS/NZS 4859.1](#) Materials for the thermal insulation of buildings - General criteria and technical provisions

[ISO 9705](#) Fire tests - Full scale room test for surface products

[BS EN ISO 9001: 2008](#) Quality management systems - Requirements

*NZS 4218:2004 Energy Efficiency - Small Building Envelope, is recognised by NZBC, NZS*

*4218:2009 Thermal Insulation - Housing and Small Buildings, has not at the time of writing been recognised by NZBC. Consult with the BCA as to their requirements.*

*Delete from the DOCUMENTS clause any document not cited. List any additional cited documents.*

*The following are related documents and if referred to in the work section need to be added to the list of DOCUMENTS.*

[NZBC E3/AS1](#) Internal moisture

[NZBC B2/AS1](#) Durability

[NZBC F2/AS1](#) Hazardous building materials

[NZS 3602](#) Timber and wood-based products for use in building

[NZS 3604](#) Timber-framed buildings

[NZS 4220](#) Energy conservation in non-residential buildings

[BRANZ BU 427](#) Improving thermal insulation

[BRANZ BU 429](#) Calculating R-values for timber framed buildings

[BRANZ BU 460](#) Internal moisture control

[BRANZ publication](#) House insulation guide

### 1.3 MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer's and supplier's documents relating to this part of the work:

Kooltherm® K10G2 Soffit Board brochure

Kooltherm® K12 Framing Board brochure

CodeMark™ SAIG-CM20099 Kooltherm K12 Framing Board

*List documents relating to this part of the work, i.e. technical product/system specifications, test reports, appraisals, certification, etc. Normally they will be referred to in the text by the abbreviated title.*

Manufacturer/supplier contact details

Company: **Kingspan Insulation NZ Ltd**

Web: [www.kingspaninsulation.co.nz](http://www.kingspaninsulation.co.nz)

Email: [info@kingspaninsulation.co.nz](mailto:info@kingspaninsulation.co.nz)

Telephone: 09 969 1613

*It is important to ensure that all personnel on site have access to accurate, up to date technical information on the many products, materials and equipment used on a project. In most cases individual products are not used in isolation, but form part of a building process. Also a particular manufacturer's and/or supplier's requirements for handling, storage, preparation, installation, finishing and protection of their product can vary from what might be considered the norm. Access to technical information can help overcome this potential problem.*

### Warranties

#### 1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

10 years	For Kooltherm® products
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Warranty: A Project Specific Warranty provided by Kingspan Insulation must be submitted subsequent to a satisfactory site inspection.

To register your specification for your Project Specific Warranty enter the details here [www.kingspaninsulation.co.nz/PSW](http://www.kingspaninsulation.co.nz/PSW)

Refer to the general section 1237 WARRANTIES for additional requirements.

*Modify or expand the clause to suit project or manufacturer/supplier requirements, options include:*

- *Change the standard form to be used (check with the manufacturer/supplier, use the general section 1237WA WARRANTY AGREEMENT if required)*
- *Commence the warranty from the date of purchase (check with the manufacturer/supplier)*

### Requirements

#### 1.5 QUALIFICATIONS

Installers to be experienced, competent trades people familiar with the materials and techniques specified.

#### 1.6 NO SUBSTITUTIONS

Substitutions are not permitted to any of the Kooltherm® specified systems, components and associated products listed in this section.

### Performance

#### 1.7 ENERGY EFFICIENCY

Maintain the energy efficiency requirements to [NZBC H1/AS1](#), 2.0 Building thermal envelope. Install to [NZS 4218](#) for small buildings, to [NZS 4243.1](#) for large buildings and to the Kooltherm® technical requirements.

*Modify to suit requirements, particularly if using NZBC H1/VM1. NZBC H1 requires that the building performance index (BPI) of the complete envelope does not exceed a set figure. NZBC H1 sets the minimum requirements. NZS 4218 and NZS 4243.1 provide a schedule, a calculation and a modelling method for determining insulation. Ensure SELECTIONS reflect this.*

#### 1.8 FIRE GROUP NUMBERS

The Group Number Classification to [NZBC C/AS2-C/AS6](#), table 4.1, has been determined in accordance with [NZBC C/VM2](#) Appendix A, following testing to ISO 9705.

Product	Group Number
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- 1.9 Kooltherm® K12 Framing Board is tested to [AS/NZS 1530.3](#).  
**COMPLIANCE - K12 FRAMING BOARD**  
 Kooltherm® K12 Framing Board meets the requirements of the CodeMark™ certificate CodeMark™ [SAIG-CM20099](#) when used within the conditions and limitations of its Certificate of Conformity. Achieves compliance with NZBC as follows:
- [NZBC B1.3.1](#), [3.2](#), [3.3](#), [3.4](#)
  - [NZBC B2.3.1 \(c\)](#)
  - [NZBC C3.3.4](#)
  - [NZBC E2.3.2](#)
  - [NZBC E3.3.1](#)
  - [NZBC F2.3.1](#)
  - [NZBC H1. 3.1](#)

*The certificate provides third parties with compliance to NZBC Clauses and standards specified within the certificate, provided that installation of the system is in accordance with .Kingspan Insulation Pty Ltd and Kooltherm® K12 Framing Board Installation Manual.*

## 2. PRODUCTS

### Materials

- 2.1 **INSULATION FOR CONCRETE SOFFITS**  
 Kingspan Kooltherm® K10G2 Soffit Board, a high performance, fibre-free rigid thermoset phenolic insulation core, sandwiched between an upper tissue based facing and a lower facing of reflective aluminium foil bonded to the insulation core during manufacture. Complies with [AS/NZS 4859.1](#). **A tested smoke obscuration of not more than 100 m<sup>2</sup>/kg.** Manufactured under quality control systems approved to BS EN [ISO 9001](#).  
 Designed to thermally insulate concrete floor soffits / concrete roofs. Supplied in a 2270mm x 1200mm board and available in a range of thicknesses and R-values. Refer to SELECTIONS for options.  
*Manufactured with a CFC/HCFC free blowing agent that has zero ODP and low GWP.*
- 2.2 **INSULATION FOR USE BEHIND WALL LINING AND FRAMED WALLS**  
 Kingspan Kooltherm® K12 Framing Board, a high performance, fibre-free rigid thermoset phenolic insulation, faced on both sides with a low emissivity composite foil bonded to the insulation during manufacture. Complies with [AS/NZS 4859.1](#). **A tested smoke obscuration of not more than 100 m<sup>2</sup>/kg.** Manufactured under quality control systems approved to BS EN [ISO 9001](#).  
 Designed to thermally insulate concrete, block and framed walls. Supplied in a 2270mm x 1200mm board and available in a range of thicknesses and R-values. Refer to SELECTIONS for options.  
*Manufactured with a CFC/HCFC-free blowing agent that has zero ODP and low GWP.*

### Components

- 2.3 **FASTENERS - GENERALLY**  
 Fasteners to suit the particular application in accordance with Kooltherm® installation instructions.
- 2.9 **TAPE**  
 Kingspan Foil Tape, aluminium foil tape, minimum of 48mm and 96mm wide.  
*Used to seal joints in Kooltherm® insulation boards.*

## 3. EXECUTION

### Conditions

- 3.1 **DELIVERY, STORAGE AND HANDLING**  
 Take delivery of materials and goods and store on site and protect from damage. Protect finished surfaces, edges and corners from damage. Move/handle goods in accordance with manufactures requirements. Reject and replace goods that are damaged or will not provide the required finish.

### Installation - generally

- 3.2 **INSTALL INSULATION - GENERAL**  
Lay, install, fit and fix to [NZBC H1/AS1](#): Energy efficiency, 2.0 Building thermal envelope, and to manufacturer's requirements. Install in housing to [NZS 4218](#) and [NZS 4246](#). Install in large buildings to [NZS 4243.1](#) and [NZS 4220](#). Do not cover vents. Allow a clear gap around metal flues as recommended by the fireplace manufacturer. Lift up electrical wires, lighting transformers/controllers and lay the insulation underneath.  
*These standards give minimum building element thermal resistance (R-values). Achieving these will depend on the quality of the insulation.*
- CAUTION: Electrical cables and equipment partially or completely surrounded with bulk thermal insulation may overheat and fail. This applies to wiring installed prior to 1989.*
- 3.3 **PIPES AND PLUMBING**  
Cut holes in the Kooltherm® with a sharp knife and notch around obstacles such as pipes and plumbing.
- 3.4 **ELECTRICAL CABLES**  
Fit Kooltherm® board behind or in front of electrical wiring and plumbing. Ensure there are no gaps or undesirable compression at edges.  
Use extreme caution when working around electrical cables.
- 3.5 **CHECK FOILS**  
Ensure foils are dry, clean, bright, undamaged and free of debris before being covered.
- 3.6 **CHECK WALL AND ROOF UNDERLAYS**  
Ensure these are dry, clean, undamaged and free of debris before being covered.
- 3.7 **CHECK VAPOUR BARRIERS**  
Ensure these form one homogeneous sheet vapour barrier and remain as such throughout the ensuing construction process.
- 3.13 **INSULATION BOARD - CUTTING**  
Cut Kooltherm® board 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 joints are close-butted to maintain continuity of insulation.

### **Installation - Kooltherm® K10G2 Soffit Board, fastening**

- 2.3 **FASTENERS - TIMBER BATTENS FIXED TO CONCRETE**  
Use 50mm x 25mm battens placed at 600 mm centres to coincide with edges/centres of boards fixed to soffit by suitable fixing method e.g. shot-fire may be considered.  
*Used to provide fixing for Kooltherm® K10G2 Soffit Board to concrete soffit.*
- 2.4 **FASTENERS - STEEL FURRING CHANNELS FIXED TO CONCRETE**  
Use 50mm x 25mm furring channels placed at 600 mm centres to coincide with edges/centres of boards fixed to soffit by suitable fixing method e.g. shot-fire may be considered.  
*Used to provide fixing for Kooltherm® K10G2 Soffit Board to concrete soffit.*
- 2.5 **FASTENERS - KOOLTHERM® BOARD DIRECT FIXED TO CONCRETE**  
Use a minimum 11 appropriate insulation fasteners with a minimum 35mm head diameter and 40mm penetration into solid substrate.  
**Alternatively, a designer can calculate the required design strength to identify a suitable embedment for the design loading.**  
4 No. fasteners along each length - no less than 50mm - no more than 150mm from edge of board, 3 No. fasteners along the middle.  
*Used to provide fixing for Kooltherm® K10G2 Soffit Board to concrete soffit.*
- 2.6 **FASTENERS - KOOLTHERM® BOARD FIXED TO STEEL FURRING CHANNELS**  
Fix Kingspan Kooltherm® K10G2 Soffit Board to treated furring channels using suitable fixings placed at maximum 300mm (maximum 200mm when using nails) in rows not greater than 600mm apart.  
*Used to provide fixing for Kooltherm® K10G2 Soffit Board to concrete soffit.*

- 2.7 FASTENERS - KOOLTHERM® BOARD FIXED TO TIMBER BATTENS  
Fix Kingspan Kooltherm® K10G2 Soffit Board to treated timber battens using suitable fixings placed at maximum 300mm (maximum 200mm when using nails) in rows not greater than 600mm apart.  
*Used to provide fixing for Kooltherm® K10G2 Soffit Board to concrete soffit.*

**Installation - Kooltherm® K10G2 Soffit Board, taping**

3.9 INSULATION BOARD - TAPING

Tape all board joints with a minimum 96mm wide foil tape.

- Check climate conditions are suitable for application of tape. Confirm details with Kingspan Insulation NZ Ltd if unsure of conditions.
- Remove dust, dirt or oil and clean surface of board with a dry cloth before applying tape.
- Remove liner on tape 300mm to 600mm at a time and press adhesive firmly on to the insulation. Do not stretch tape.
- Ensure tape is applied over the centre of the joint so that there is adequate area on both sides of the joint.
- Wipe tape firmly from the centre out (like wallpaper) with a plastic squeegee. The more pressure applied, the greater the bond surface.
- Cut and fit tape with a knife and scissors. Repeat wiping instructions as above.

Protect exposed edges, in the absence of other protection, using foil tape with a minimum of 48mm wide overlap on to the board face or alternatively use an uPVC C-section.

**Installation - Kooltherm® K10G2 Soffit Board**

3.10 INSTALL INSULATION - FIXED DIRECTLY TO CONCRETE SOFFITS

Install Kooltherm® K10G2 Soffit Board directly to concrete soffits to Kooltherm® installation instructions and as follows:

- Fix Soffit Board using a minimum of 11 No. fasteners per board, with a minimum head diameter of 35mm.
- Evenly distribute fasteners over the whole area of the board with a minimum 40mm penetration into the substrate. **Alternatively, a designer can calculate the required design strength to identify a suitable embedment for the design loading**
- Install boards in either a staggered or square pattern and tape edges using a 96mm wide aluminium foil tape.
- Position fasteners 4 No. along each length (between 50mm and 150mm from edge) and 3 No. fasteners along the middle (offset from the edge positions).
- If board is considered to be subject to external wind pressure, provide additional fixings as required by the appropriate wind load standards.

3.11 INSTALL INSULATION - FIXED TO TIMBER BATTENS / FURRING CHANNELS

Install Kooltherm® K10G2 Soffit Board fixed to H3.1 timber battens or steel furring channels to Kooltherm® installation instructions, and as follows (necessary where substrate is uneven or services prevent direct fixing):

- Locate battens / furring channels at 600mm centres to coincide with the edges / centres of the board.
- Fix Soffit Board to battens / furring channels with fixings placed at a maximum 300mm apart (200mm when using nails into timber battens) in rows not greater than 600mm apart.
- Install boards in either a staggered or square pattern and tape edges using a 96mm wide aluminium foil tape.
- If board is considered to be subject to external wind pressure, provide additional fixings as required by the appropriate wind load standards.

3.12 INSTALL INSULATION - AROUND FIRE COLLARS

Install Kooltherm® K10G2 Soffit Board around fire collars to Kooltherm® installation instructions, and as follows:

- Fit Kooltherm® K10G2 Soffit Board tight around the fire collar. This helps to reduce the effects of thermal bridging through the slab.
- Do not cover the face of the fire collar with board - the front face of the collar needs to be exposed to activate in a fire situation.

**Installation - Kooltherm® K12 Framing Board, fastening**

- 2.8 FASTENERS - STEEL FURRING CHANNEL CLIPS FIXED TO CONCRETE  
Install chosen furring channel clips at required spacing for plasterboard lining.  
*Used to provide fixing for Kooltherm® K12 Framing Board to concrete walls.*
- 2.9 FASTENERS – KOOLTHERM® FIXED TO STEEL FURRING CHANNEL CLIPS  
Fit Kingspan Kooltherm® K12 Framing Board over furring channel clips to abut wall and so that wings of clips penetrate board. Neatly trim foil face where clips penetrate to avoid separating from insulation core. Butt join boards to provide continuous insulation layer. Install furring channels by clipping into channel clips. Furring channels should be tight against face of Kingspan Kooltherm®.  
*Used to provide fixing for Kooltherm® K12 Framing Board to concrete walls.*
- 3.0 FASTENERS – KOOLTHERM® BOARD FIXED OVER WALL TIES  
Fix Kingspan Kooltherm® K12 Framing Board to external surface of frame structure (maximum 600mm centres stud spacing) ensuring vertical board joints coincide with vertical member. Ensure boards are lightly butted for continuity of insulation. Use large headed galvanized clout nails or screws as fixings prior to boards being tied to frame with appropriate timber frame wall tie and insulation retaining disc. Ensure fixings are coincident with underlying timber studs, top and bottom wall plates.  
*Used to provide fixing for Kooltherm® K12 Framing Board to concrete walls.*
- 3.1 FASTENERS - KOOLTHERM® BOARD FIXED TO STEEL / TIMBER-FRAME  
Fix Kingspan Kooltherm® K12 Framing Board to external surface of frame structure (maximum 600mm centres stud spacing) ensuring vertical board joints coincide with vertical member. Ensure boards are lightly butted for continuity of insulation. Use large headed galvanized clout nails or screws as temporary fixings prior to the secondary support batten being fitted. Fix preservative treated softwood battens vertically to wall frame, through insulation sheathing, ensuring battens and fixings are coincident with underlying timber studs, top and bottom plates.  
*Used to provide fixing for Kooltherm® K12 Framing Board to concrete walls.*
- 3.14 **Installation - Kooltherm® K12 Framing Board, taping**  
INSULATION BOARD - TAPING  
Tape all board joints with a minimum 48mm wide foil tape.  
  - Check climate conditions are suitable application of tape. Confirm details with Kingspan Insulation NZ Ltd if unsure of conditions.
  - Remove dust, dirt or oil and clean surface of board with a dry cloth before applying tape.
  - Remove liner on tape 300mm to 600mm at a time and press adhesive firmly on to the insulation. Do not stretch tape.
  - Ensure tape is applied over the centre of the joint so that there is adequate area on both sides of the joint.
  - Wipe tape firmly from the centre out (like wallpaper) with a plastic squeegee. The more pressure applied, the greater the bond surface.
  - Cut and fit tape with a knife and scissors. Repeat wiping instructions as above.
- 3.15 **Installation - Kooltherm® K12 Framing Board**  
INSTALL INSULATION - CONCRETE WALL, CLIP / CHANNEL SYSTEM  
Install Kooltherm® K12 Framing Board directly to concrete wall to Kooltherm® installation instructions and as follows:  
  - Install furring channel clips at required spacing for plasterboard lining.
  - Fit Kooltherm® K12 Framing Board over furring channel clips to abut the wall, so that the wings of the clips penetrate the board. Make sure the foil facing does not separate from the core by neatly trimming the foil face at the point where the furring channel clip penetrates the insulation.
  - Butt join boards to provide a continuous insulation layer.
  - Install furring channels by clipping into the channel clips. Ensure furring channels are tight up against the face of the board.
  - Install plasterboard lining to the appropriate plasterboard section(s) specification.
- 3.16 INSTALL INSULATION - BRICK VENEER WALL, EXTERNAL SIDE OF FRAME  
Install Kooltherm® K12 Framing Board to brick veneer wall to Kooltherm® installation instructions and as follows:

- Stud spacing to be maximum of 600mm centres.
- Screw fix brick veneer ties to framing to support external wall.
- Fix Kooltherm® K12 Framing Board to frame with joints to coincide with studs, top and bottom plates, using large headed clouts or screws.
- Lightly butt boards to provide a continuous insulation layer.
- Construct brick veneer wall to the appropriate masonry veneer section(s) specification.

### 3.17 INSTALL INSULATION - STEEL & TIMBER FRAMED WALL, EXTERNAL SIDE OF FRAME

Install Kooltherm® K12 Framing Board to steel or timber framed walls to Kooltherm® installation instructions and as follows:

- Stud spacing to be maximum of 600mm centres.
- Fix Kooltherm® K12 Framing Board to external face of frame with vertical joints to coincide with studs.
- Lightly butt boards to provide a continuous insulation layer.
- Use large headed galvanized clouts or screws as temporary fixings prior to the secondary support batten being fitted.
- Fix H3.1 timber battens vertically to the wall frame, through the insulation board, ensuring that the joints coincide with studs, top and bottom plates.
- Fix external cladding to secondary support batten to the appropriate cladding section(s) specification.

#### Completion

### 3.18 ROUTINE CLEANING

Carry out routine trade cleaning of this part of the work including periodic removal all debris, unused materials and elements from the site.

### 3.19 PROTECT

Protect new work from damage.

## 4. SELECTIONS

For further details on selections go to [www.kingspaninsulation.co.nz](http://www.kingspaninsulation.co.nz).

Substitutions are not permitted to the following, unless stated otherwise.

*If substitutions are permitted modify the statement above, ensure the NO SUBSTITUTIONS clause from GENERAL is treated the same.*

*Select the options to suit the project and delete options not specified.*

#### Materials

### 4.1 KINGSPAN KOOLTHERM® INSULATION FOR CONCRETE SOFFITS

Location: ~  
 Manufacturer: Kingspan Insulation NZ Ltd  
 Brand/type: Kingspan Kooltherm® K10G2 Soffit Board  
 Board size: 2270mm x 1200mm  
 Construction type:  
 Fixing type: ~  
 Thickness: ~mm  
 R value: ~

*Options:*

*Construction type Roof application, no ceiling (150mm concrete)*

<i>Thickness</i>	<i>Kingspan Kooltherm® K10G2 Soffit Board</i>	
	<i>Heat flow in</i>	<i>Heat flow out</i>
<i>25mm</i>	<i>R1.4</i>	<i>R1.4</i>
<i>30mm</i>	<i>R1.7</i>	<i>R1.7</i>
<i>40mm</i>	<i>R2.1</i>	<i>R2.1</i>
<i>50mm</i>	<i>R2.7</i>	<i>R2.7</i>
<i>60mm</i>	<i>R3.2</i>	<i>R3.2</i>
<i>70mm</i>	<i>R3.7</i>	<i>R3.7</i>
<i>80mm</i>	<i>R4.2</i>	<i>R4.2</i>
<i>90mm</i>	<i>R4.7</i>	<i>R4.7</i>

*Construction type Roof application, suspended ceiling (150mm concrete)*

Thickness	Kingspan Kooltherm® K10G2 Soffit Board	
	Heat flow in	Heat flow out
25mm	R2.3	R1.9
30mm	R2.6	R2.1
40mm	R3.1	R2.6
50mm	R3.6	R3.2
60mm	R4.2	R3.7
70mm	R4.7	R4.2
80mm	R5.2	R4.7
90mm	R5.6	R5.2

**Construction type** Unenclosed sub-floor application (150mm concrete)

Thickness	Kingspan Kooltherm® K10G2 Soffit Board	
	Heat flow in	Heat flow out
25mm	R1.4	R1.4
30mm	R1.7	R1.7
40mm	R2.1	R2.1
50mm	R2.7	R2.7
60mm	R3.2	R3.2
70mm	R3.7	R3.7
80mm	R4.2	R4.2
90mm	R4.7	R4.7

**Construction type** Enclosed sub-floor application (150mm concrete)

Thickness	Kingspan Kooltherm® K10G2 Soffit Board	
	Heat flow in	Heat flow out
25mm	R1.8	R1.8
30mm	R2.1	R2.1
40mm	R2.6	R2.6
50mm	R3.2	R3.2
60mm	R3.8	R3.8
70mm	R4.2	R4.2
80mm	R4.7	R4.7
90mm	R5.2	R5.2

**Product R-value:**

Thickness	Kingspan Kooltherm® K10G2 Soffit Board
25mm	R1.2
30mm	R1.4
40mm	R1.9
50mm	R2.5
60mm	R3.0
70mm	R3.5
80mm	R4.0
90mm	R4.5

**NOTE:** Climate zone R value requirements are referenced from NZS 4218 and refer to construction R values.

4.2 **KINGSPAN KOOLTHERM® INSULATION FOR USE BEHIND WALL LINING & FRAMED WALLS**

Location: ~  
 Manufacturer: Kingspan Insulation NZ Ltd  
 Brand/type: Kingspan Kooltherm® K12 Framing Board  
 Board size: 2270mm x 1200mm  
 Construction type:  
 Fixing type: ~  
 Thickness: ~mm  
 R value: ~

**Options:**

**Construction type** Concrete wall installation (clip/channel system)

Thickness	Kingspan Kooltherm® K12 Framing Board	
	Heat flow in	Heat flow out
30mm	R2.1	R2.1
40mm	R2.5	R2.5

**Construction type** Concrete Block wall installation (clip/channel system)



Thickness	Kingspan Kooltherm® K12 Framing Board	
	Heat flow in	Heat flow out
30mm	R2.1	R2.1.
40mm	R2.6	R2.6

Construction type *Brick veneer installation (external side of frame)*

Thickness	Kingspan Kooltherm® K12 Framing Board	
	Heat flow in	Heat flow out
25mm	R2.9	R2.9.
30mm	R3.2	R3.2

Construction type *Steel framed wall installation (external side of frame)*

Thickness	Kingspan Kooltherm® K12 Framing Board	
	Heat flow in	Heat flow out
25mm	R2.4	R2.4
30mm	R2.6	R2.6

Construction type *Timber framed wall installation (external side of frame)*

Thickness	Kingspan Kooltherm® K12 Framing Board	
	Heat flow in	Heat flow out
25mm	R2.7	R2.6.
30mm	R2.9	R2.9

Product R-value:

Thickness	Kingspan Kooltherm® K12 Framing Board
25mm	R1.2
30mm	R1.4
40mm	R1.9
50mm	R2.5

NOTE: Climate zone R value requirements are referenced from NZS 4218 and refer to construction R values.