

# 4711KS KINGSPAN KOOLTHERM® SOFFIT & FRAMING BOARDS

## 1 GENERAL

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.

### 1.1 RELATED WORK

Refer to ~ for ~

#### Documents

### 1.2 DOCUMENTS

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

<a href="#">NZBC C/AS1-AS7</a>	Protection from fire
<a href="#">NZBC H1/AS1</a>	Energy efficiency
<a href="#">AS/NZS 1530.3</a>	Methods for fire tests on building materials, components and structures - Simultaneous determination of ignitability, flame propagation, heat release and smoke release
<a href="#">AS/NZS 3837</a>	Method of test for heat and smoke release rates for materials and products using an oxygen consumption calorimeter
<a href="#">NZS 4218</a>	Thermal insulation - Housing and small buildings
<a href="#">NZS 4220</a>	Code of practice for energy conservation in non-residential buildings
<a href="#">NZS 4243.1</a>	Energy efficiency - Large buildings - Building thermal envelope
<a href="#">NZS 4246</a>	Energy efficiency - Installing bulk thermal insulation in residential buildings
<a href="#">AS/NZS 4859.1:2002</a>	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 <a href="#">ISO 9001</a> : 2008	Quality management systems - Requirements

### 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- Kooltherm K12 Framing Board  
[CM20099](#)

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

#### Warranties

### 1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:  
 10 years For Kooltherm® products

- A Project Specific Warranty provided by Kingspan Insulation must be submitted subsequent to a satisfactory site inspection.
- Registration for the Project Specific Warranty to be made online at: [www.kingspaninsulation.co.nz/PSW](http://www.kingspaninsulation.co.nz/PSW)

Refer to the general section 1237 WARRANTIES for additional requirements.

#### 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.

**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
Kooltherm® K10G2 Soffit Board	2 - S

Kooltherm® K12 Framing Board is tested to [AS/NZS 1530.3](#).

**1.9 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](#)

**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 4859.1:2002](#).

A smoke obscuration of not more than 100m<sup>2</sup>/kg, when tested to [AS/NZS 3837](#).

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.

**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 4859.1:2002](#).

A smoke obscuration of not more than 100m<sup>2</sup>/kg, when tested to [AS/NZS 3837](#).

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.

**Components****2.3 FASTENERS - GENERALLY**

Fasteners to suit the particular application in accordance with Kooltherm® installation instructions.

**2.4 TAPE**

Kingspan Foil Tape, aluminium foil tape, minimum of 48mm and 96mm wide.

**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.

## 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.

## 3.8 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**

## 3.9 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.

## 3.10 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.

## 3.11 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.

4 No. fasteners along each length - no less than 50mm - no more than 150mm from edge of board, 3 No. fasteners along the middle.

## 3.12 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.

## 3.13 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.

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

## 3.14 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 join 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**

**3.15 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.
- 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.

**3.16 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.

**3.17 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****3.18 FASTENERS - STEEL FURRING CHANNEL CLIPS FIXED TO CONCRETE**

Install selected furring channel clips at required spacing for plasterboard lining.

**3.19 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 joint boards to provide continuous insulation layer. Install furring channels by clipping into channel clips. Furring channels should be tight against face of Kingspan Kooltherm®.

**3.20 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.

**3.21 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.

**Installation - Kooltherm® K12 Framing Board, taping****3.22 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.

## Installation - Kooltherm® K12 Framing Board

### 3.23 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.

### 3.24 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.

### 3.25 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

### 3.26 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.

### 3.27 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.

### 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: ~  
 R value: ~

#### 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: ~