4711CI CNZ INSULATION

1   GENERAL

This section relates to CNZ PIR Insulation board.
It includes PIR insulation in four facings;

- Fibreglass aluminium
- Embossed foil
- Glass fabric
- Facing free

1.1   ABBREVIATIONS AND DEFINITIONS

Refer to the general section 1232 INTERPRETATION & DEFINITIONS for abbreviations and definitions used throughout the specification.

The following abbreviations apply specifically to this section:
PIR   Polyisocyanurate

Documents

1.2   DOCUMENTS

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

NZBC C/VM2	Protection from fire
NZBC H1/AS1-AS2	Energy Efficiency
AS/NZS 3000	Electrical installations (Known as the Australian/New Zealand Wiring Rules)
NZS 4246	Energy efficiency - Installing bulk thermal insulation in residential building.
AS 1366.2	Rigid cellular plastics sheets for thermal insulation - Rigid cellular polyisocyanurate (RC/PIR)
AS 2498.3	Methods of testing rigid cellular plastics Determination of compressive stress

1.3   MANUFACTURER/SUPPLIER DOCUMENTS

Manufacturer and supplier documents relating to this part of the work:
CNZ Insulation Board Technical Specifications and Profiles
Global Green Tag CNZ:CN02:2022:GR PIR Insulated Board Embossed Foil expired.
BRANZ Group Classification Number/SMOGRA FI16214-01-1-C1
BRANZ Group Classification Number/SMOGRA FI13356-002
CETEC Emission Test Certificate P23020063
CNZ PIR Insulation Board Warranty

Manufacturer/supplier contact details:
Company: CNZ Insulation Limited
Web: www.cnzinsulation.co.nz
Email: support@cnzinsulation.co.nz
Telephone: 021 902412

Warranties

1.4   WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

10 years	For CNZ PIR Insulation Board

- Provide this warranty on the manufacturer/supplier standard form (if not available then use the standard form in the general section 1237WA WARRANTY AGREEMENT)
- Commence the warranty from the date of practical completion of the contract works.

Refer to the general section 1237 WARRANTIES for additional requirements.

Requirements

1.5   QUALIFICATIONS WORKERS - MANUFACTURER / SUPPLIER REQUIREMENTS

Workers to be approved by CNZ Insulation Limited. Refer to 1270 CONSTRUCTION for additional requirements relating to qualifications.

1.6   NO SUBSTITUTIONS

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

1.7   SAMPLES

Refer to the general section 1270 CONSTRUCTION for details of how samples will be reviewed and how instructions to proceed will be given. Provide the following samples for review:

	Sample A	Sample B	Sample C
Sample description:	~	~	~
Sample type:	~	~	~
Number:	~	~	~
Location:	~	~	~
Supporting documentation:	~	~	~
Reviewer:	Contract administrator~	Contract administrator~	Contract administrator~
Time for review:	10 working days ~	10 working days ~	10 working days ~
Review criteria:	~	~	~

1.8   INFORMATION REQUIRED FOR CODE COMPLIANCE

Provide the following compliance documentation: -
- Applicator approval certificate from the manufacturer / importer / distributor
- Manufacturer / supplier warranty
- Installer / applicator warranty
- Producer Statement - Construction from the applicator / installer
- Producer Statement - Construction Review from an acceptable suitably qualified person
- Other information required by the BCA in the Building Consent Approval documents.

Performance - General

1.9   SURFACE FIRE PROPERTIES FOR LININGS

Group Number to NZBC C/VM2, tested to AS ISO 9705. Refer to SELECTIONS.

2   PRODUCTS

CNZ PIR Insulation Board

2.1   FIBREGLASS ALUMINIUM

PIR insulation core sandwiched between fibreglass aluminium, to AS 1366.2/AS 2498.3, NZBC C/VM2 Group 2-S. Board size 2400mm x 1200mm. Standard thicknesses range from 20mm to 150mm. Refer to SELECTIONS.

2.2   EMBOSSED FOIL

PIR insulation core sandwiched between embossed foil, to AS 1366.2/AS 2498.3, NZBC C/VM2 Group 3.
 Board size 2400mm x 1200mm. Standard thicknesses range from 20mm to 150mm. Refer to SELECTIONS.

2.3   GLASS FABRIC

PIR insulation core sandwiched between glass fabric, to AS 1366.2/AS 2498.3. Board size 2400mm x 1200mm. Standard thicknesses range from 20mm to 150mm. Refer to SELECTIONS.

2.4   FACING FREE

PIR insulation core - facing free, to AS 1366.2/AS 2498.3. Board size 2400mm x 1200mm. Standard thicknesses range from 20mm to 150mm. Refer to SELECTIONS.

Components

2.5   FASTENERS

Fasteners complete with 30mm minimum diameter nylon or metal penny washer head, capable of 40mm embedment into substrate.

2.6   EXPANDING FOAM

Expanding foam, compatible with NZ Insulation PIR boards.

2.7   TAPE

100mm wide aluminium insulation tape.

3   EXECUTION

Conditions

3.1 DELIVERY, STORAGE & HANDLING OF PRODUCTS
Refer to 1270 CONSTRUCTION for requirements relating to delivery, storage and handling of products.

3.2 ROUTINE MATTERS
Refer to 1250 TEMPORARY WORKS & SERVICES for protection requirements.
Refer to 1270 CONSTRUCTION for requirements relating to defective or damaged work, removal of protection and cleaning.

3.3 PRE-COATING/FINISHING REQUIREMENTS
Check work previously carried out and confirm it is of the required standard for specified finish. Carry out such additional preparatory work as required to bring the substrate to suitable condition.

Install PIR Insulation Generally

3.4 STANDARDS AND TOLERANCES
Refer to the general section 1270 CONSTRUCTION for general requirements.

3.5 INSTALL INSULATION - GENERAL
Lay, install, fit and fix insulation without gaps to NZBC H1/AS1 or NZBC H1/AS2 and insulation manufacturer's requirements. For all housing and buildings up to 300m install in accordance to NZS 4246 sections 5 Walls, 6 Ceilings & Roofs, 7 Underfloor - Suspended Framed Floors and 10 Concrete Slab-on-Ground Insulation, for residential light timber or steel framed buildings. Do not cover vents. Lift up electrical wires, lighting transformers/controllers and lay the insulation underneath.

3.6 RECESSED LIGHT FITTINGS - CLEARANCE
Install, fit and fix to NZBC H1/AS1: Energy efficiency in accordance with AS/NZS 3000 and to manufacturer's requirements. Do not cover vents.

3.7 PIPES AND PLUMBING
Cut holes in the PIR insulation with a sharp knife and notch around obstacles such as pipes and plumbing.

3.8 ELECTRICAL CABLES
Fit PIR insulation 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.

3.9 CHECK FOILS
Ensure foils are dry, clean, bright, undamaged and free of debris before being covered.

3.10 CHECK WALL AND ROOF UNDERLAYS
Ensure underlays are dry, clean, undamaged and free of debris before being covered.

3.11 CHECK VAPOUR BARRIERS
Ensure vapour barriers form one homogeneous sheet vapour barrier and remain as such throughout the ensuing construction process.

3.12 PIR INSULATION BOARD - CUTTING
Cut PIR insulation 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.

Installation CNZ PIR Insulation Board - Soffits

3.13 INSTALLATION - DIRECT FIXING TO CONCRETE SOFFITS
Install PIR board to concrete soffits to NZ Insulation installation instructions.
Fix boards directly to concrete soffit in accordance with CNZ Insulation Brochure, with a minimum of 11 evenly distributed fasteners per board. Fasteners complete with 30mm minimum diameter nylon or metal penny washer head.
Refer CNZ Insulation brochure for fixing pattern. Minimum 40mm embedment. Boards may be staggered or aligned. Ensure joints are close butted to maintain continuity of insulation.
Design load on the board not to exceed 0.375kPa for this fixing pattern.

Installation CNZ PIR Insulation Board - Masonry/Concrete Walls

3.14 INSTALLATION - DIRECT TO CONCRETE MASONRY WALLS - ADHESIVE FIX
Ensure walls are free from moisture and contaminant. Check walls are straight and plumb. Remove any protrusions.
Install PIR board to concrete masonry walls to NZ Insulation installation instructions.
Apply a continuous bead of construction adhesive around the perimeter of the wall, and any penetrations.
Apply 25mm diameter blobs of construction adhesive across the back of the PIR board, or directly to the wall.
Ensure no blob is nearer than 25mm to any edge of the board.
Align the PIR board on the wall so that all joints are tightly butted, and apply pressure evenly over the board.
Note: Temporary support of the boards may be necessary.

3.15 INSTALLATION - DIRECT TO CONCRETE MASONRY WALLS - MECHANICAL FIX
Ensure walls are free from moisture and contaminant. Check walls are straight and plumb. Remove any protrusions.

Install PIR board to concrete masonry walls to NZ Insulation installation instructions.
Pre-drill the substrate using a suitable masonry bit. Insert masonry anchors minimum embedment 25mm, at 600mm centres horizontally, and 300mm centres vertically.
Align the PIR board on the wall so that all joints are tightly butted.
Drive the fasteners straight, into the anchors. Fasteners complete with 30mm minimum diameter nylon or metal penny washer head.
Design load on the board not to exceed 0.375kPa for this fixing pattern.

Installation CNZ PIR Insulation Board - Metal or timber battens

3.16   INSTALLATION - DIRECT TO METAL OR TIMBER BATTENS

Install PIR board to metal or timber battens to NZ Insulation installation instructions.
Fit metal or timber battens at 600mm centres.
Align the PIR board so that all joints are tightly butt along the batten.
For metal battens fix fasteners at 300mm centres along the batten.
For timber battens fix fasteners at 200mm centres.
Fasteners complete with 30mm minimum diameter nylon or metal penny washer head.
Design load on the board not to exceed 0.375kPa for this fixing pattern.

Installation CNZ PIR Insulation Board - Timber framed walls

3.17   INSTALLATION - WITHIN TIMBER STUD WALLS

Install PIR board to timber framed wall to NZ Insulation installation instructions.
Cut PIR boards accurately to fit tightly between the studs. Use nails or fit a timber batten on the warm side of the board to hold the PIR boards in place.

Installation CNZ PIR Insulation Board - Skillion roof

3.18   INSTALLATION - CONTINUOUS OVER FRAMING (SKILLION ROOFS)

Install PIR board to warm pitched roof to NZ Insulation installation instructions.
Rafter spacing maximum 600mm centres. Fix PIR board to external face of rafter with vertical joints to coincide with rafters. Lay the PIR board over the rafters so that all joints are tightly butted. Lay building paper over the PIR board.
Fix PIR board with 160mm long fasteners nailed through 40mm x 50mm counter-batten set on top of insulation.
Refer to TIMBER and ROOFING SECTIONS for further details.

Installation - Foam, Tape

3.19   APPLY EXPANDING FOAM

Apply expanding foam to fill all gaps between the boards, or between the boards and the structure so a complete air barrier is created.

3.20   APPLY TAPE TO INSULATION BOARD

Tape all board joints with a minimum 100mm wide foil tape.
Remove dust, dirt or oil and clean surface of board with a dry cloth before applying tape.
Remove liner on tape 500mm 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 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.

Completion & Commissioning

3.21   COMPLETION MATTERS

Refer to 1270 CONSTRUCTION for completion requirements and if required commissioning requirements.

4   SELECTIONS

For further details on selections go to www.cnzinsulation.co.nz
Substitutions are not permitted to the following, unless stated otherwise.

CNZ PIR Insulation Boards

4.1   CNZ PIR INSULATION BOARD - FIBREGLASS ALUMINIUM

Location:	~
Supplier:	CNZ
PIR Type:	Fibreglass aluminium
Size:	2400mm x 1200mm
Thickness:	~
mK/W:	~
Group number:	2-S

4.2   CNZ PIR INSULATION BOARD - EMBOSSED FOIL

Location:	~
Supplier:	CNZ
PIR Type:	Embossed Foil
Size:	2400mm x 1200mm
Thickness:	~
mK/W:	~
Group number:	3

4.3   CNZ PIR INSULATION BOARD - GLASS FABRIC

Location:	~
Supplier:	CNZ
PIR Type:	Glass Fabric
Size:	2400mm x 1200mm
Thickness:	~
mK/W:	~
Group number:	None

4.4   CNZ PIR INSULATION BOARD - FACING FREE

Location:	~
Supplier:	CNZ
PIR Type:	Facing Free
Size:	2400mm x 1200mm
Thickness:	~
mK/W:	~
Group number:	None