These documents must be retained on site. Inspections may not be carried out if they are not.

BC201272

A. Thermakraft Supercourse 500 DPC BRANZ Appraisal ____ 2

A. Thermakraft Supercourse 500 DPC Installation Manual ____ 7

E. Pink Batts Ceiling Installation Manual ____ 9

E. Pink Batts Classic BRANZ Appraisal ____ 14

E. Pink Batts Wall Installation Manual ____ 22

F. Thermakraft Aluband BRANZ Appraisal ____ 26

G. Thermakraft Watergate Plus Installation Guide ____ 32

G. Thermakraft Watergate PlusBRANZ Appraisal ____ 34

BUILDING CONSENT

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HUTT CITY COUNCIL

HUTT CITY
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BRANZ Appraised

Appraisal No. 329 [2016]

SUPERCOURSE 500 DAMP-PROOF COURSE AND CONCEALED FLASHING

Appraisal No. 329 (2016)

This Appraisal replaces BRANZ Appraisal No. 329 (2005)

Amended 23 February 2017

BRANZ Appraisals

Technical Assessments of products for building and construction.

Thermakraft Limited
PO Box 58 112
Greenmount
Auckland
Tel: 09 273 3727
Fax: 09 273 3726
Free phone: 0800 806 595
www.thermakraft.co.nz

BRANZ
1222 Moonshine Rd,
RD1, Porirua 5381
Private Bag 50 908
Porirua 5240,
New Zealand
Tel: 04 237 1170
branz.co.nz

Product

1.1 Supercourse 500 is a single layer black polyethylene, embossed on both faces to produce a small diamond pattern. It is for use as a general damp-proof course (DPC), and also as a concealed flashing for masonry veneer cladding.

Scope

2.1 Supercourse 500 has been appraised for use as a damp-proof course for separating timber, wood-based products and metal from concrete, masonry or clay brick in accordance with NZS 3604.

2.2 Supercourse 500 has also been appraised for use as a damp-proof course and flashing in masonry veneer walls in accordance with NZBC Acceptable Solution E2/AS1.

Building Regulations

New Zealand Building Code (NZBC)

3.1 **In the opinion of BRANZ, Supercourse 500 Damp-Proof Course and Concealed Flashing, if used, designed, installed and maintained in accordance with the statements and conditions of this Appraisal, will meet, or contribute to meeting the following provisions of the NZBC:**

Clause B2 DURABILITY: Performance B2.3.1 (a), not less than 50 years and B2.3.2. Supercourse 500 meets these requirements. See Paragraph 8.1.

Clause E2 EXTERNAL MOISTURE: Performance E2.3.2 and E2.3.3. When used as a flashing as part of a masonry veneer cladding system, Supercourse 500 will contribute to meeting the requirements of E2.3.2. When used as a DPC, Supercourse 500 will meet the requirements of E2.3.3. See Paragraphs 11.1 and 11.2.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Supercourse 500 meets this requirement and will not present a health hazard to people.

3.2 This is an Appraisal of an **Alternative Solution** DPC in terms of the New Zealand Building Code compliance. This is also an Appraisal of an **Acceptable Solution** flashing when used behind masonry veneer in accordance with NZBC Acceptable Solution E2/AS1.

Technical Specification

4.1 Supercourse 500 is 0.5 mm thick, extruded polyethylene film. It consists of a single layer of black polyethylene, embossed on both faces to produce a small diamond pattern. The total thickness of the product after embossing is 0.75 mm. Supercourse 500 is supplied in rolls 30 m long and is available in widths of 50, 75, 90, 100, 150, 200, 250, 300 and 1000 mm. Other widths are available upon request.

4.2 Each roll is labelled with the product name, dimensions, standards reference, and manufacturer's information.

Handling and Storage

5.1 Handling and storage of the product, whether on or off site, is under the control of the installer. The rolls must be protected from damage and weather and must be stored under cover, in clean, dry conditions.

Technical Literature

6.1 Refer to the Appraisals listings on the BRANZ website for details of the current Technical Literature for Supercourse 500. The Technical Literature must be read in conjunction with this Appraisal. All aspects of design, use, installation and maintenance contained in the Technical Literature and within the scope of this Certificate must be followed.

Design Information

General

7.1 Supercourse 500 exceeds the vapour resistance requirements of NZBC Acceptable Solution E2/AS1, Table 23 for DPC's and is a suitable moisture impermeable alternative to bituminous DPC's.

7.2 Supercourse 500 is intended for use as a DPC separating timber, wood-based products and metal from concrete or masonry elements, or where required, timber jack studs or bearers from concrete or timber piles, e.g. where required by NZS 3604, Paragraph 2.3.3 and Figure 6.3. When used as a DPC, the roll width selected must enable the Supercourse 500 to extend at least 6 mm beyond each face of the timber in accordance with the requirements of NZS 3604, Paragraph 2.3.3 (b).

7.3 Supercourse 500 is also intended for use as a flashing material with masonry veneer in accordance with NZBC Acceptable Solution E2/AS1, Paragraph 9.2.4 and also as a DPC in accordance with NZBC Acceptable Solution E2/AS1, Paragraph 9.2.5.

Timber Treatment

7.4 Supercourse 500 when used as a DPC or flashing, is suitable for use in contact with timber treated with light organic solvent preservative (LOSP) or water-based timber preservatives. The solvent from the timber treatment must be allowed to evaporate (generally at least one week) prior to the installation of Supercourse 500.

Exposure Zone Fixing Selection

7.5 Where Supercourse 500 is used as a flashing behind masonry veneer, fixings shall be hot dip galvanised clouts in Exposure Zones B and C and stainless steel clouts in Exposure Zone D.

Durability

Serviceable Life

8.1 Supercourse 500 is expected to have a serviceable life in excess of 50 years when it is installed in accordance with the requirements of this Appraisal and the Technical Literature, provided it is not exposed to the weather or ultra-violet (UV) light for a total of more than 30 days, and is never exposed to chemicals, or solvents that will degrade polyethylene.

Control of Internal Fire and Smoke Spread

9.1 Damp-proof courses and flashings are exempt from the surface finish requirements of NZBC Acceptable Solutions C/AS1 – C/AS6 by NZBC Acceptable Solution C/AS1, Paragraph 4.2.2 e), and NZBC Acceptable Solutions C/AS2 – C/AS6, Paragraph 4.17.6 e).

Prevention of Fire Occurring

10.1 Separation or protection must be provided to Supercourse 500 from heat sources such as fire places, heating appliances, flues and chimneys. Part 7 of NZBC Acceptable Solutions C/AS1 – C/AS6 and NZBC Verification Method C/VM1 provide methods for separation and protection of combustible materials from heat sources.

External Moisture

11.1 Supercourse 500, when installed as a flashing in accordance with the Technical Literature and this Appraisal, will assist in the masonry veneer cladding system meeting the performance requirements of Clause E2.3.2.

11.2 Supercourse 500 when used as a DPC in accordance with this Appraisal, prevents walls, floors and structural elements in contact with the ground from absorbing or transmitting moisture in quantities that could cause undue dampness or damage to building elements to meet the performance requirements of Clause E2.3.3

Installation Information

Installation Skill Level Requirements

12.1 Installation must always be carried out in accordance with the Technical Literature and this Appraisal, by competent tradespersons with an understanding of DPC and flashing installation.

Supercourse 500 Installation

General

13.1 Strips of Supercourse 500 may be cut to length with a sharp knife.

DPC Installation

13.2 The surfaces to be separated must be smooth and flat, free from projections such as small stones or sharp ridges that may puncture the membrane when pressure is applied.

13.3 When used to separate timber and wood-based products from concrete or masonry, Supercourse 500 should be temporarily held in place with small hot-dip galvanised clouts or zinc plated staples. The strip of DPC must be wide enough to fully protect the width of the material in contact with the concrete or masonry. Refer also to Paragraph 7.2.

13.4 When used under timber plates fixed over concrete floor slabs and foundation walls, a small slit should be made in the material before pushing down over the bolts or fixings. Alternatively, a small hole can be formed by gently tapping the product resting on top of the bolt until a puncture is formed.

Flashing Installation

13.5 Supercourse 500 must be fixed in place to framing members at maximum 300 mm centres with small hot-dip galvanised clouts.

13.6 Horizontal and vertical joints must be no less than 75 mm wide, with the direction of the lap ensuring that water is shed to the outer face of the flashing.

13.7 At the sill/jamb junction, the jamb flashing must overlap the sill flashing.

Basis of Appraisal

The following is a summary of the technical investigations carried out:

Tests

14.1 The following tests have been carried out on Supercourse 500 by Amdel Ltd, a NATA Certified laboratory: Water permeability, thickness, mass per unit area, pigment, impact resistance, and labelling, all in accordance with AS/NZS 2904 and AS/NZS 4347. The test results have been reviewed by BRANZ experts and found to be satisfactory.

Other Investigations

15.1 Durability and weathertightness opinions were given by BRANZ technical experts.

15.2 The practicability of installation has been assessed by BRANZ and found to be satisfactory.

15.3 The Technical Literature, including installation instructions, has been examined by BRANZ and found to be satisfactory.

Quality

16.1 The manufacture of Supercourse 500 has been examined by BRANZ, and details of the methods adopted for quality control and the quality of the materials used, have been obtained.

16.2 The quality management system of the Supercourse 500 manufacturer, Cromford Pty Ltd, has been assessed and registered as meeting the requirements of ISO 9001: 2008 by ApprovalMark International, Certificate Number QMS 27839.

16.3 The quality of supply to the market is the responsibility of Thermakraft Limited.

16.4 Building designers are responsible for the design of the building, and for the incorporation of Supercourse 500 into their design in accordance with the instructions of Thermakraft Limited.

16.5 Quality of installation is the responsibility of the installer in accordance with the instructions of Thermakraft Limited.

Sources of Information

- AS/NZS 2904: 1995 Damp-proof courses and flashings.
- AS/NZS 4347 Damp-proof courses and flashings - Methods of test.
- NZS 3604: 2011 Timber Framed Buildings.
- NZS 4229: 2013 Concrete masonry buildings not requiring specific engineering design.
- Acceptable Solutions and Verification Methods for New Zealand Building Code External Moisture Clause E2, Ministry of Business, Innovation and Employment, Third Edition July 2005 (Amendment 7, 01 January 2017).
- Ministry of Business, Innovation and Employment Record of Amendments for Compliance Documents and Handbooks.
- The Building Regulations 1992.

Amendments

Amendment No. 1, dated 23 February 2017.

This Appraisal has been amended to update the Appraisal Holder.

BRANZ

In the opinion of BRANZ, Supercourse 500 Damp-Proof Course and Concealed Flashing is fit for purpose and will comply with the Building Code to the extent specified in this Appraisal provided it is used, designed, installed and maintained as set out in this Appraisal.

The Appraisal is issued only to Thermakraft Limited, and is valid until further notice, subject to the Conditions of Appraisal.

Conditions of Appraisal

1. This Appraisal:
   a) relates only to the product as described herein;
   b) must be read, considered and used in full together with the Technical Literature;
   c) does not address any Legislation, Regulations, Codes or Standards, not specifically named herein;
   d) is copyright of BRANZ.
2. Thermakraft Limited:
   a) continues to have the product reviewed by BRANZ;
   b) shall notify BRANZ of any changes in product specification or quality assurance measures prior to the product being marketed;
   c) abides by the BRANZ Appraisals Services Terms and Conditions.
   d) Warrants that the product and the manufacturing process for the product are maintained at or above the standards, levels and quality assessed and found satisfactory by BRANZ pursuant to BRANZ's Appraisal of the product.
3. BRANZ makes no representation or warranty as to:
   a) the nature of individual examples of, batches of, or individual installations of the product, including methods and workmanship;
   b) the presence or absence of any patent or similar rights subsisting in the product or any other product;
   c) any guarantee or warranty offered by Thermakraft Limited.
4. Any reference in this Appraisal to any other publication shall be read as a reference to the version of the publication specified in this Appraisal.
5. BRANZ provides no certification, guarantee, indemnity or warranty, to Thermakraft Limited or any third party.

For BRANZ

Chelydra Percy
Chief Executive

Date of Issue:
22 December 2016

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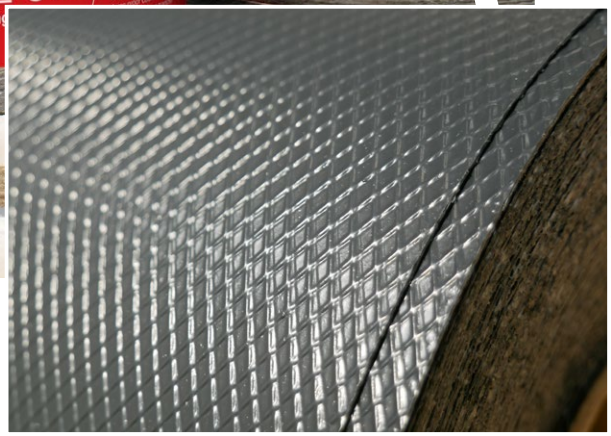
HUTT CITY COUNCIL

BC201272

Thermakraft™



Installation Guide

SUPERCOURSE 500

Synthetic Damp Proof Course

Supercourse 500 is a general damp-proof course (DPC) used to prevent moisture transfer between building materials. It is also used as a concealed flashing for masonry veneer cladding.

Manufactured using a single layer of black polyethylene, Supercourse 500 is tough, high-impact and tear resistant. It is a suitable moisture impermeable alternative to bituminous DPC.

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BRANZ Appraised
Appraisal No.329 [2016]

Installation Guide

Product usage

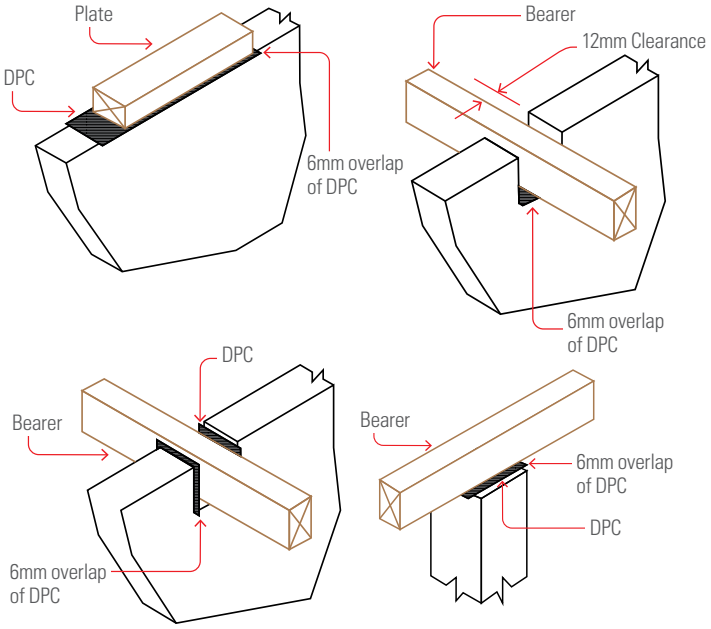
Thermakraft Supercourse 500 provides a moisture barrier protection and prevent walls, floors and structural elements in contact with the ground absorbing or transmitting moisture. When used as a flashing in masonry walls, the product provides moisture protection around window and door joinery.

Application Method

Damp-Proof Course (DPC) Installation

- Strips of Thermakraft Supercourse 500 DPC may be cut to length with a sharp knife.
- Surface must be smooth and flat, free from sharp ridges/projections such as small stones that may puncture membrane.
- The strip of Thermakraft Supercourse 500 DPC must be wide enough to fully protect the width of material in contact with concrete or masonry.
- When used to separate timber and wood-based products from concrete or masonry, Supercourse 500 should be temporarily held in place with small hot-dip galvanised clouts or zinc plated staples.

Note: when use as a DPC, the roll width selected must be enable the Supercourse 500 to extend 6mm beyond each face of the timber in accordance with the requirement of the NZ 3604 standard paragraph 2.3.3 (b). See extract image below from NZ 3604:2011.



Note: Timber, unless otherwise stated, to be treated to the levels specified in NZS 3604.

- A small slit should be made in the material to accommodate the bolts or fixings when used under timber plates or concrete floors or foundation walls. Alternative, a small hole can be formed by gently tapping the product resting on top of the bolt until a puncture is formed.

Flashing Installation

- Thermakraft Supercourse 500 must be fixed in place to framing members at 300mm centres with small hot-dip galvanised clouts.
- Horizontal and vertical joints must be no less than 75mm wide, with the direction of the lap ensuring that water is shed to the outer face of the flashing.
- At the sill/jamb junction, the jamb flashing must overlap the sill flashing.

Supercourse 500 is unaffected by LOSP or other solvent based treated timber. However, LOSP or other solvent based treated timber must have sufficient time for the solvent chemical to flash off in a well ventilated area. Recommended minimum 7 days.

Handling and Storage

Supercourse 500 must be handled with care to prevent damage such as tearing and roll deformation.

The product must be stored under cover well away from direct moisture, rainfall contact and sunlight (UV). Care should be taken not stack other materials on top of the product.

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Thermakraft Limited / 0800 806 595

Issue 2, November 2019

BC201272

INSTALLATION INSTRUCTIONS

Roof | PINK® BATTS® CEILING INSULATION

Installation Instructions

Correct installation with no compression, gaps or folds is critical to ensure Pink® Batts® ceiling insulation performance is not compromised.

Safety:

Each installation is unique so prior to installation check for all hazards that may cause injury:

- Carry out any required repair work before starting installation
- Ensure there's adequate lighting to identify any hazards
- Treat all electrical cables as live, being careful not to cut or expose cables and wires
- Beware of other sharp objects (protruding nails, splinters etc.), pests (bees and wasps), loose boards and pipe work
- Avoid installing during the warmest part of the day. The roof cavity temperature can increase to uncomfortable levels
- Do not stand on ceiling or ceiling battens

Note: Seek professional advice if you are unsure how best to isolate the hazard or have a professional installer carry out the work on your behalf.

We recommend PinkFit® professional installers. PinkFit® are a nationwide network of professional installers who guarantee that their completed installation will meet the requirements of NZS 4246:2016.

Call **0800 746 534** for your local PinkFit® installer

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Roof | PINK® BATTS® CEILING INSULATION

Installation:

Any slight irritation to exposed skin caused by the fibres in glass wool, or through their inhalation, is harmless and temporary.

However for your comfort while installing, it's recommended you wear:

- Loose fitting work clothes which cover the arms and legs
- Covered shoes
- Dust mask
- Safety glasses

For safety while installing, it's recommended you use:

- Cut resistant gloves (if knife is used)
- Kneepads (for retrofitting)

For an efficient installation, the following tools are recommended:

- Stable working platform (for new build)
- Kneeling board or planks (for retrofitting)
- Knife
- Tape measure
- Install rod for tight spaces
- Head torch (for retrofitting)

For retrofitting, take into consideration:

- Using planks laid across joists to walk and work on
- Leveling and refitting any existing insulation if required with correct clearances
- Removing any damp insulation
- Starting installation at the point furthest away from the ceiling access hole

To ensure Pink® Batts® ceiling insulation performance isn't compromised, confirm the correct product and R-value is used in ceiling applications.

- Ensure the product is installed dry
- Friction fit product between framing, ensuring there are NO gaps, folds or compression of the product to achieve optimal performance
- If cutting is required, cut oversize by 5-10mm to ensure a good friction fit
- Ensure that Pink® Batts® ceiling segments are firmly butted against each other
- For retrofitting, install over timber where insulation already exists or where appropriate. Any open air pockets beside joist/truss cord ends at the roof perimeter to be blocked off with insulation off-cuts
- Fit Pink® Batts® insulation beneath electrical wiring and plumbing work. Minimise tucks
- Install to the outer edge of the top plate covering at least 50% of it while ensuring minimal overflow to the eaves
- Maintain a 25mm gap clearance between the Pink® Batts® insulation and any roofing material. If required, to maintain 25mm clearance, trim insulation or use a thinner product around the perimeter
- Insulate access hole cover and secure in place with strapping or glue
- Remove excess material

Unlined Walls in Roof Cavities

- **Pink® Batts® Wall** or **Pink® Batts® HandyPack insulation** should be secured in place by using horizontal strapping (max spacing of 300mm)

Tip: To verify Building Code Compliance, staple a product label at an easy to find location away from any hot items such as downlights or water cylinders e.g. on truss/rafter above ceiling access hole and hot water cupboard.

Note: **Pink® Batts® ceiling insulation shall not be installed in a roof space where foil has been installed as a roof underlay.**

Refer to NZS 4246:2016 for full details.

Clearances

Follow the clearances specified by the manufacturer; if they are not known then:

Recessed Luminaire

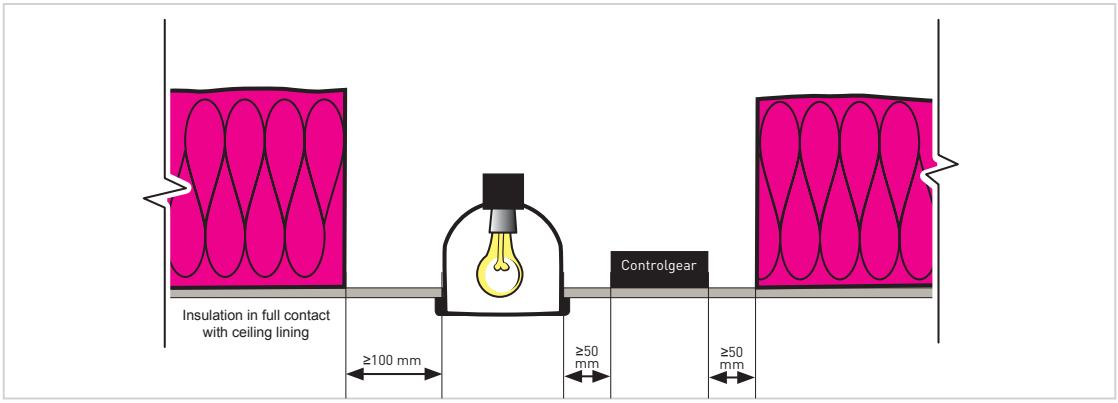
- CA rated recessed luminaires - Nil, however do not install insulation on top of the recessed luminaire
- IC rated recessed luminaires - Nil, insulation can be installed over the top of the recessed luminaire
- Unmarked - Minimum 100mm

Surface Mounted Luminaire - Minimum clearance 200mm; however it does not apply if the insulation is permanently shielded.

Controlgear

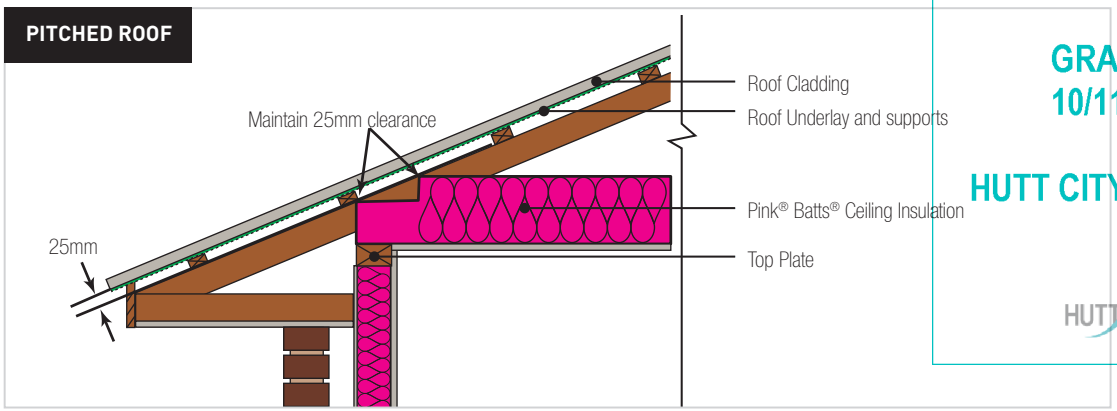
- If possible place it on top of the insulation and leave a minimum clearance of 50mm between controlgear and luminaire
- If not possible to place it on top of the insulation and leave 50mm from the insulation to the controlgear

Controlgear **shall not** sink into the insulation.



Unmarked luminaire and controlgear not placed on top of Pink® Batts® ceiling products.

- Built in appliances - Minimum 50mm
- Enclosures containing electrical equipment - Minimum 50mm
- Fan/heat/light unit - Minimum 100mm
- Ventilation systems - Minimum 50mm
- Unducted mechanical fan units - Minimum 200mm
- Unducted passive vents that remain functional - Minimum 200mm
- Metal chimney and flues - Minimum 75mm
- Brick chimney - Minimum 50mm
- Roof underlay - Minimum 25mm



Note: Pink® Batts® ceiling insulation can be installed from below when the ceiling is to be lined or replaced

*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.

Roof | PINK® BATTS® CEILING INSULATION

Product Specifications

ROOF - Thermal Insulation		PRODUCT CODE	SIZE (mm)	NOMINAL STABILISED THICKNESS (mm)	NOMINAL TOTAL AREA PER BALE (m^2)	APPROX. COVERAGE PER BALE* (m^2)	ENVIRONMENTAL CHOICE
R1.8	Pink® Batts® Classic R1.8 Ceiling	7110118	1220 x 432	95	13.7	14.4	✓
R2.2	Pink® Batts® Classic R2.2 Ceiling	7110122	1220 x 432	115	12.6	13.3	✓
R2.6	Pink® Batts® Classic R2.6 Ceiling	7110126	1220 x 432	140	10.5	11.1	✓
R3.2	Pink® Batts® Classic R3.2 Ceiling‡	7110132	1220 x 432	170	8.4	8.8	✓‡
R3.2	Pink® Batts® Skillion Roof R3.2	7110232	1220 x 432	115 max	3.7	3.9	✓
R3.6	Pink® Batts® Classic R3.6 Ceiling‡	7110136	1220 x 432	180	7.4	7.7	✓‡
R3.6	Pink® Batts® Skillion Roof R3.6	7110236	1220 x 432	165 max	6.3	6.6	✓
R4.0	Pink® Batts® Ultra® R4.0 Ceiling	7110140	1220 x 432	195	6.3	6.6	✓
R5.0	Pink® Batts® Ultra® R5.0 Ceiling	7110150	1220 x 432	220	4.2	4.4	✓
R6.0	Pink® Batts® Ultra® R6.0 Ceiling	7110160	1220 x 432	235	3.7	3.9	✓
R6.3	Pink® Batts® Ultra® R6.3 Ceiling	7110163	1220 x 432	250	3.2	3.3	✓
R7.0	Pink® Batts® Ultra® R7.0 Ceiling	7110170	1220 x 432	260	2.6	2.8	✓
ROOF - Thermal Retrofit Insulation							
R2.9	Pink® Batts® R2.9 Retrofit Ceiling	7110129	1220 x 432	150	9.5	10.0	✓
R3.3	Pink® Batts® R3.3 Retrofit Ceiling	7110133	1220 x 432	175	8.4	8.8	✓
ROOF and WALL - Thermal Insulation							
R2.4	Pink® Batts® HandyPack R2.4^	7200158	7000 x 580	90	4.06	-	

* Coverage relates to standard structures (ie with framing allowance) therefore actual coverage may vary.
‡ This product is manufactured in both New Zealand and Australia. Environmental Choice New Zealand applies to New Zealand made product only.
# For full details of the Pink® Batts® Lifetime Warranty visit pinkbatts.co.nz/lifetime-warranty.
^ Product does not have the Pink® Batts® Lifetime Warranty or BRANZ Appraised Accreditation.

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These installation instructions may have been superseded. Please refer to pinkbatts.co.nz or call **0800 746 522** for the most current information.

pink batts®
Always.

Roof | PINK® BATTS® CEILING INSULATION

Storage and Maintenance

Pink® Batts® insulation should be protected from damage and weather. Store under cover in clean dry conditions. The installed product should remain dry at all times. If the product has become wet or damp, the source of the dampness (e.g. leak in roof) should be repaired immediately and any wet or damp insulation should be removed and replaced with new product of an equivalent R-value.

Disposal of bags

Recyclable LLDPE bags are used for packaging of Pink® Batts® insulation.
For further details download the relevant product data sheet from pinkbatts.co.nz

Accreditations/Appraisals/Certifications

BRANZ Appraised
Appraisal No. 238 [2012]
Appraisal No. 632 [2012]
Appraisal No. 767 [2012]

Licence No 2504017.
Thermal Building Insulants

Tasman Insulation New Zealand Ltd
Certified QMS
Quality
ISO 9001

‡ R3.6 ceiling product is manufactured in both New Zealand and Australia. Environmental Choice New Zealand applies to New Zealand made products only.

For full details of the Pink® Batts® Lifetime Warranty visit pinkbatts.co.nz

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TASMAN INSULATION NEW ZEALAND

DISTRIBUTED BY
Tasman Insulation New Zealand Ltd
9-15 Holloway Place, Penrose, Auckland,
New Zealand

BRANZ Appraised
Appraisal No. 238 [2018]

PINK® BATTS® INSULATION

Appraisal No. 238 (2018)

This Appraisal replaces BRANZ Appraisal No. 238 (2012).

Amended 26 November 2018.

BRANZ Appraisals

Technical Assessments of products for building and construction.

Tasman Insulation New Zealand Ltd
PO Box 12 069
Penrose
Auckland
Tel: 09 579 2139
Fax: 09 571 3482
Freephone: 0800 746 522
Web: www.pinkbatts.co.nz

BRANZ
1222 Moonshine Rd,
RD1, Porirua 5381
Private Bag 50 908
Porirua 5240,
New Zealand
Tel: 04 237 1170
branz.co.nz

Product

1.1 Pink® Batts® Insulation is a range of resin bonded fibrous glasswool thermal insulating material for use in walls, ceilings and roofs of buildings. Pink® Batts® Insulation is pre-cut to suit a range of framing spacings.

Scope

2.1 Pink® Batts® Insulation has been appraised as a thermal insulation material for framed or part-framed walls, ceilings and roofs of domestic and commercial buildings.

Building Regulations

New Zealand Building Code (NZBC)

3.1 **In the opinion of BRANZ, Pink® Batts® Insulation, if designed, used, installed and maintained in accordance with the statements and conditions of this Appraisal, will meet or contribute to meeting the following provisions of the NZBC:**

Clause B2 DURABILITY: Performance B2.3.1 (a) not less than 50 years and B2.3.1 (b) 15 years. Pink® Batts® Insulation meets these requirements. See Paragraph 8.1.

Clause E3 INTERNAL MOISTURE: Performance E3.3.1. Pink® Batts® Insulation will contribute to meeting this requirement. See Paragraphs 13.1 and 13.2.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Pink® Batts® Insulation meets this requirement and will not present a health hazard to people.

Clause H1 ENERGY EFFICIENCY: Performance H1.3.1 (a) and H1.3.2 E. Pink® Batts® Insulation will contribute to meeting these requirements. See Paragraphs 14.1 and 14.2.

Technical Specification

4.1 Pink® Batts® Insulation is a resin bonded fibrous glasswool insulation manufactured from recycled and/or virgin glass and cured urea extended phenolic resin.

4.2 Pink® Batts® Insulation is manufactured in a range of sizes to suit framing centres and cavity depths. Building Insulation Blanket (BIB) is supplied in rolls for commercial applications. Pink® Batts® Insulation is available as set out in Table 1.

Table 1: Pink® Batts® Insulation product table.

R-value	Length (mm)	Width (mm)	Nominal Thickness (mm)	Nominal Total Area (m^2)	Density (kg/m^3)
Roof - Thermal Insulation					
1.8[1]	1220	432	95	13.7	8.3
2.2[1]	1220	432	115	12.6	8.2
2.6[1]	1220	432	140	10.5	7.7
3.2[1]	1220	432	170	8.4	8.4
3.2[1]	1220	432	170	8.4	6.9
3.6[1]	1220	432	180	7.4	7.4
3.6	1220	432	180	7.4	8.8
4.0[1]	1220	432	195	6.3	8.1
5.0[1]	1220	432	220	4.2	10.0
6.0[1]	1220	432	235	3.7	13.0
6.3[1]	1220	432	250	3.2	12.3
7.0[1]	1220	432	260	2.6	15.8
Roof - Building Insulation Blanket					
1.2	12,000	1200	50	28.8	12.0
1.8	8000	1200	75	19.2	12.0
2.2	8000	1200	100	19.2	9.1
2.4	8000	1200	100	19.2	11.5
2.6	6000	1200	110	14.4	11.0
3.2	8000	1200	135	9.6	10.9
Roof - Pink® Batts® Retrofit Insulation					
2.9[1]	1220	432	150	9.5	7.7
3.3[1]	1220	432	175	8.4	7.1
Wall - Masonry Insulation					
1.0[1]	1220	580	40	21.2	14.0
1.2	1220	580	50	17.0	12.8
70 mm Wall Range - Thermal Insulation					
2.2	1140	560	70	6.4	30.0
90 mm Wall Range - Thermal Insulation					
1.8[1]	1140	560	90	16.6	9.0
2.2[1]	1140	560	90	13.4	11.6
2.4[1]	1140	560	90	10.2	14.7
2.4[1]	1140	560	90	10.2	17.4
2.6[1]	1140	560	90	9.6	19.4
2.8[1]	1140	560	90	6.4	27.1

Table 1: Pink® Batts® Insulation product table cont.

R-value	Length (mm)	Width (mm)	Nominal Thickness (mm)	Nett Area (m²)	Density (kg/m³)
90 mm Narrow Wall Range - Thermal Insulation					
2.2[1]	1140	360	90	9.0	11.8
2.6[1]	1140	360	90	7.4	19.4
2.8[1]	1140	360	90	4.5	27.1
90 mm Steel Wall Range - Thermal Insulation					
2.2[1]	1220	610	90	15.6	11.8
2.6[1]	1220	610	90	9.7	19.4
140 mm Wall Range - Thermal Insulation					
3.2[1]	1140	560	140	9.6	9.6
3.6[1]	1140	560	140	7.0	14.0
4.0[1]	1140	560	140	5.1	19.5
140 mm Narrow Wall Range - Thermal Insulation					
3.2[1]	1140	360	140	7.0	9.6
4.0[1]	1140	360	140	4.1	19.5

[1] Pink® Batts® Insulation products that have the Environmental Choice license.

4.3 Pink® Batts® Insulation is pink in colour and is baled in polythene bags with labelling in compliance with AS/NZS 4859.1.

4.4 Pink® Batts® Retrofit Ceiling Insulation is pink in colour and is baled in teal polythene bags with labelling in compliance with AS/NZS 4859.1.

4.5 Accessories used with Pink® Batts® Insulation, which are supplied by the insulation installer, are wire netting, plastic strapping and fixings.

Handling and Storage

5.1 Pink® Batts® Insulation must be stored under cover and in dry conditions. Heavy objects must not be stacked on the bales. The bales must be stored in an orientation that avoids excessive compression of the product.

5.2 In general, insulation products are sensitive to the length of time they are stored under compression packaging. Product that does not recover to its nominal thickness may not achieve the stated R-value.

Technical Literature

6.1 Refer to the Appraisal listing on the BRANZ website for details of the current Technical Literature for Pink® Batts® Insulation. The Technical Literature must be read in conjunction with this Appraisal. All aspects of design, use, installation and maintenance contained in the Technical Literature and within the scope of this Appraisal must be followed.

Design Information

General

7.1 Pink® Batts® Insulation is intended for use as thermal insulation to meet the requirements of the NZBC. Pink® Batts® Insulation can be used to meet the minimum schedule method R-values of NZBC Verification Method H1/VM1 or NZBC Acceptable Solution H1/AS1. Greater construction R-values can be achieved where specific design is used. For construction R-values refer to the BRANZ House Insulation Guide. Product R-values and dimensions are given in Table 1.

7.2 Pink® Batts® Insulation thermal resistance (R-value) has been determined by testing to AS/NZS 4859.1, which is an acceptable method in NZBC Acceptable Solution H1/AS1.

7.3 Pink® Batts® Insulation is designed to be friction-fitted between wall, ceiling or roof framing. They can also be laid directly on a ceiling lining, over ceiling battens or joists/truss chords. In other horizontal situations, the insulation must be adequately supported by galvanised wire netting or some other suitable durable material.

7.4 Where the insulation is installed in exterior walls, the insulation material nominal thickness must be selected to provide a snug close fit which touches all sides of the insulation cavity between the wall underlay and the interior wall lining.

7.5 Where the insulation is retrofitted in external walls without a wall underlay, and with direct-fixed claddings, the insulation must be at least 20 mm thinner than the framing to allow a gap of at least 20 mm between the insulation and the wall cladding. Horizontal straps must be stapled into the sides of the wall studs at 300 mm centres maximum as support before the insulation is installed. Refer also to NZS 4246, Section 5.4.2.

7.6 When the insulation is installed in a wall with a drained cavity, it is recommended that specific wall products with a controlled nominal thickness be used. Where the stud spacings are greater than 450 mm, an intermediate means of restraining the insulation from bulging into the cavity must be installed in accordance with NZBC Acceptable Solution E2/AS1, Paragraph 9.1.8.5.

7.7 Building Insulation Blanket is designed specifically for commercial roof and commercial wall applications. In residential applications, installation must be completed in line with NZS 4246.

7.8 To prevent moisture transfer and to provide roof ventilation, a separation of 25 mm minimum is required between the insulation and any rigid substrate or flexible roof underlay. Selecting specifically designed skillion roof insulation products with a controlled nominal thickness can assist with this requirement.

7.9 The building envelope must be constructed to ensure the insulation remains dry during installation and throughout the life of the building.

7.10 The clearance requirements for heating appliances and downlights must be met and reference made to the manufacturer's instructions and NZS 4246. See Paragraphs 10.1 - 10.3.

Durability

Serviceable Life

8.1 Where the building is maintained so that provisions of NZBC Clauses E2 and E3 are met, and where the insulation is not crushed or exposed to conditions that will diminish its thermal performance (e.g. moisture), Pink® Batts® Insulation can be expected to have a serviceable life of at least 50 years.

Maintenance

9.1 Insulation that has become damp must be removed and the cause of dampness repaired. Cavities must be clean and dry before fitting new insulation of an equivalent thermal rating. NZS 4246 gives guidance on thermal insulation maintenance due to water damage.

Prevention of Fire Occurring

10.1 Pink® Batts® Insulation is considered a non-combustible material and need not to be separated from heat sources such as fire places, heating appliances, flues and chimneys. However, when used in conjunction with, or attached to heat sensitive materials, the heat sensitive material must be separated from fireplaces, heating appliances, flues and chimneys in accordance with the requirements of Part 7 of NZBC Acceptable Solutions C/AS1 to C/AS6 and NZBC Verification Method C/VM1.

Downlights

10.2 Recessed luminaires shall be of type and be installed in accordance with NZBC Acceptable Solution C/AS1 to C/AS6, Section 7.4.

10.3 Insulation materials must maintain a clearance of 100 mm to undefined recessed luminaires in existing buildings.

Control of Internal Fire and Smoke Spread

11.1 Pink® Batts® Insulation has been classified non-combustible when tested to AS 1530.1 and can therefore be assigned a Group Number of 1-S. Unless foamed plastics building materials are also used as part of the wall or ceiling construction, there are no internal surface finish requirements in Risk Group SH in accordance with NZBC Acceptable Solution C/AS1, Paragraph 4.2. When used in an occupied space, Pink® Batts® Insulation does not need to be enclosed in any Risk Group. Refer to NZBC Acceptable Solutions C/AS2 to C/AS6 for the specific internal surface requirements for walls or ceilings in other Risk Groups.

External Moisture

12.1 The total building envelope must be weathertight and comply with the requirements of NZBC Clause E2 to ensure that the insulation remains dry in use.

12.2 The moisture content of the construction materials at the time of installing and enclosing the insulation must meet the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 10.2 (a), or a lower moisture content if required by the lining manufacturer.

Internal Moisture

13.1 Buildings must provide an adequate combination of thermal resistance, ventilation and space temperature to all habitable spaces, bathrooms, laundries and other spaces where moisture may be generated or may accumulate. This does not apply to Communal Non-residential, Commercial, Industrial, Outbuildings or Ancillary buildings.

13.2 Roofs and walls of housing complying with the Schedule Method for Compliance with Clause H1.3.2 E will have adequate thermal resistance. Other buildings may require more thermal insulation to satisfy the requirements of NZBC Acceptable Solution E3/AS1 than that to satisfy the energy efficiency provisions alone.

Energy Efficiency

14.1 Pink® Batts® Insulation will contribute to meeting the requirements of NZBC Clause H1, Performance H1.3.1 (a) and H1.3.2 E by compliance with NZBC Verification Method H1/VM1 or NZBC Acceptable Solution H1/AS1. Refer to Paragraphs 7.1 - 7.8.

14.2 Pink® Batts® Insulation R-values have been determined by BRANZ testing to AS/NZS 4859.1 and are given in Table 1.

Installation Information

Installation Skill Level Requirements

15.1 Installation of Pink® Batts® Insulation must be completed by an installer with an understanding of insulation installation.

General

16.1 Installation of Pink® Batts® Insulation must be in accordance with the Technical Literature, Installation Instructions and this Appraisal. NZS 4246 should be used as a guide for installing insulation in residential buildings.

16.2 The product must be installed only when the building is enclosed and when the construction materials have achieved the required maximum moisture content or less.

16.3 Pink® Batts® Insulation must be released from the packaging and allowed to re-loft prior to installation. The time to loft will depend upon the length of time the product has been packaged and stored.

16.4 Pink® Batts® Insulation is supplied in segment and blanket form (see Table 1) to suit framing layouts. The product is able to be cut to suit wall cavities and when fitted between roof or ceiling framing. The insulation must be neatly friction-fitted between framing members so that the potential for gaps and convective heat loss is reduced. In wall cavities the insulation must be neatly friction-fitted between framing members to prevent sagging. In ceiling or roofs, the insulation may be fitted between framing members or fitted over framing members and butted tightly. The insulation must extend to the external wall top plate. The insulation must not be folded or compressed. A close even fit provides the most efficient thermal performance. Whenever possible, the insulation should be fitted beneath wiring or plumbing.

16.5 The clearance requirements for heating appliances and downlights must be followed. Refer also to NZS 4246.

Inspections

16.6 The Technical Literature, this Appraisal and NZS 4246 must be referred to during the inspection of Pink® Batts® Insulation installations.

Health and Safety

17.1 Refer to the Technical Literature and NZS 4246 for guidance on health and safety requirements such as personal protective clothing and installation hazard assessment.

Basis of Appraisal

The following is a summary of the technical investigations carried out:

Tests

18.1 BRANZ has carried out thermal resistance testing of Pink® Batts® Insulation in accordance with AS/NZS 4859.1.

18.2 Tests have been carried out in accordance with AS 1530.1. Pink® Batts® Insulation is not deemed combustible according to the test criteria. The results have been reviewed by BRANZ technical experts.

Other Investigations

19.1 An assessment of the durability of Pink® Batts® Insulation has been made by BRANZ technical experts.

19.2 The manufacturer's Technical Literature including installation instructions have been reviewed by BRANZ and found to be satisfactory.

Quality

20.1 The manufacture of Pink® Batts® Insulation has been examined by BRANZ, including methods adopted for quality control. Details of the manufacturing processes, and quality and composition of the raw materials used were obtained and found to be satisfactory.

20.2 The range of Pink® Batts® Insulation products have been assessed for their environmental impact by the New Zealand Ecolabelling Trust and comply with the requirements of the Environmental Choice Specification, Licence No. 2504017 - Thermal (resistive type) Building Insulants. The products that have the Environmental Choice license are noted in Table 1.

20.3 Tasman Insulation New Zealand Ltd is responsible for the quality of the product supplied.

20.4 Quality of installation of the product on site is the responsibility of the installer.

20.5 Quality of maintenance of the building to ensure the insulation material remains dry is the responsibility of the building owner.

Sources of Information

- AS 1530.1: 1994 Combustibility test for materials.
- AS/NZS 4859.1: 2002 Materials for the thermal insulation of buildings.
- NZS 4246: 2016 Energy efficiency - Installing bulk thermal insulation in residential buildings.
- BRANZ Bulletin Number 525 Preventing moisture problems in timber-framed skillion roofs.
- BRANZ House Insulation Guide, Fifth Edition 2014.
- Acceptable Solution and Verification Methods for New Zealand Building Code Energy Efficiency Clause H1, Ministry of Business, Innovation and Employment, Fourth Edition, (including Amendment 3, 1 January 2017).
- Ministry of Business, Innovation and Employment record of Amendments - Acceptable Solutions, Verification Methods and Handbooks.
- The Building Regulations 1992.

Amendments

Amendment No. 1, dated 05 September 2018.

This Appraisal has been amended to include the use of Pink® Batts® Insulation when retrofitting external walls without wall underlay with direct-fixed claddings.

Amendment No. 2, dated 26 November 2018.

This Appraisal has been amended to update Table 1 to include the Roof - Building Insulation Blanket product range.

In the opinion of BRANZ, Pink® Batts® Insulation is fit for purpose and will comply with the Building Code to the extent specified in this Appraisal provided it is used, designed, installed and maintained as set out in this Appraisal.

The Appraisal is issued only to Tasman Insulation New Zealand Ltd, and is valid until further notice, subject to the Conditions of Appraisal.

Conditions of Appraisal

1. This Appraisal:
   a) relates only to the product as described herein;
   b) must be read, considered and used in full together with the Technical Literature;
   c) does not address any Legislation, Regulations, Codes or Standards, not specifically named herein;
   d) is copyright of BRANZ.
2. Tasman Insulation New Zealand Ltd:
   a) continues to have the product reviewed by BRANZ;
   b) shall notify BRANZ of any changes in product specification or quality assurance measures prior to the product being marketed;
   c) abides by the BRANZ Appraisals Services Terms and Conditions;
   d) warrants that the product and the manufacturing process for the product are maintained at or above the standards, levels and quality assessed and found satisfactory by BRANZ pursuant to BRANZ's Appraisal of the product.
3. BRANZ makes no representation or warranty as to:
   a) the nature of individual examples of, batches of, or individual installations of the product, including methods and workmanship;
   b) the presence or absence of any patent or similar rights subsisting in the product or any other product;
   c) any guarantee or warranty offered by Tasman Insulation New Zealand Ltd.
4. Any reference in this Appraisal to any other publication shall be read as a reference to the version of the publication specified in this Appraisal.
5. BRANZ provides no certification, guarantee, indemnity or warranty, to Tasman Insulation New Zealand Ltd or any third party.

For BRANZ

Chelydra Percy
Chief Executive

Date of Issue:
03 August 2018

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HUTT CITY COUNCIL
HUTT CITY TE AWA KAIRANGI

BC201272

INSTALLATION INSTRUCTIONS

Wall | PINK® BATTS® WALL INSULATION

Installation Instructions

Correct installation with no compression, gaps or folds is critical to ensure Pink® Batts® wall insulation performance is not compromised.

Safety:

Each installation is unique, so prior to installation check for all hazards that may cause injury:

- Carry out any required repair work before starting installation
- Ensure there's adequate lighting to identify any hazards
- Treat all electrical cables as live, being careful not to cut or expose cables and wires
- Beware of other sharp objects (protruding nails, splinters etc.), pests (bees and wasps), loose boards and pipe work

Note: Seek professional advice if you are unsure how best to isolate the hazard or have a professional installer carry out the work on your behalf.

We recommend PinkFit® professional installers. PinkFit® are a nationwide network of professional installers who guarantee that their completed installation will meet the requirements of NZS 4246:2016.

For your local PinkFit® installer call **0800 746 534** or visit **pinkbatts.co.nz/installing-pink-batts/**

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HUTT CITY
TE AWA KAIRANGI

Wall | PINK® BATTS® WALL INSULATION

Installation:

Any slight irritation to exposed skin caused by the fibres in glass wool, or through their inhalation, is harmless and temporary.

However for your comfort while installing, it's recommended you wear:

- Loose fitting work clothes which cover the arms and legs
- Covered shoes
- Dust mask
- Safety glasses

For safety while installing, it's recommended you use:

- Cut resistant gloves (if knife is used)

For an efficient installation, the following tools are recommended:

- Stable working platform
- Knife
- Tape measure

To ensure Pink® Batts® wall insulation performance isn't compromised, use only wall products for installing in wall applications.

- Ensure the product and all cavities are dry
- If cutting is required, cut oversize by 5 mm to ensure a good friction fit
- Ensure there are no gaps, folds or compression of the product to achieve optimal performance
- Fill gaps around windows and doors with off-cuts
- Follow the manufacturer's instructions for minimum clearances from hot inbuilt appliances. If they are unknown, refer to NZS 4246:2016
- Do not cover vents. Insulate around vents to allow unhindered ventilation
- Fit Pink® Batts® insulation tight and close around electrical cables and pipes. It's important to minimise compression, gaps and folds in the insulation. For electrical cables and small diameter pipes, partially cut insulation and place around the cables and pipes
- In new construction, it is recommended that Pink® Batts® insulation is installed once the cladding system is completely installed.

Retrofitting insulation in external walls without wall underlay/or in poor condition

a) Direct Fixed Cladding

- Use insulation that is at least 20mm thinner than the framing width - if the frame is 90mm we recommend to use **Pink® Batts® Classic R2.2 70mm** OR
- Fit inserts of Bitumac® 720 wall underlay.

b) Drained Cavity

- The insulation can be the same thickness as the frame. The use of horizontal strapping is recommended , OR
- Fit inserts of Bitumac® 720 wall underlay.

Unlined Walls in Roof Cavities

- **Pink® Batts® Wall** or **Pink® Batts® HandyPack insulation** should be secured in place by using horizontal strapping (max spacing of 300mm)

Pink® Batts® Masonry Wall Insulation

- It is recommended that an absorbent building paper or a waterproof membrane is placed between the insulation and the concrete. This is not intended to replace the DPC which must still be fixed between strapping and masonry.

CAUTION: Electrical cables and equipment installed prior 1989 may overheat and fail when partially or completely covered with bulk thermal insulation

Tip: To verify Building Code Compliance, staple a product label and installer information at an easy to find location away from any hot items such as downlights or water cylinders. An alternative is to supply the information to the building owner or authorised person.

Refer to NZS 4246:2016 for further information related to the correct installation of insulation and clearances.

Wall | PINK® BATTS® WALL INSULATION

Product Specifications

WALL - Thermal Insulation	PRODUCT CODE	SIZE (mm)	NOMINAL STABILISED THICKNESS (mm)	NOMINAL TOTAL AREA PER BALE (m^2)	APPROX. COVERAGE PER BALE* (m^2)	ENVIRONMENTAL CHOICE
Masonry						
R1.0 Pink® Batts® Masonry R1.0	7160110	1220 x 580	40	21.2	-	✓
R1.2 Pink® Batts® Masonry R1.2	7160134	1220 x 580	50	17.0	-	
70mm Wall Range						
R2.2 Pink® Batts® Classic R2.2 70mm Wall	7160248	1140 x 560	70	6.4	7.5	
90mm Wall Range						
R1.8 Pink® Batts® Classic R1.8 Wall	7127118	1140 x 560	90	16.6	19.6	✓
R2.2 Pink® Batts® Classic R2.2 Wall	7127122	1140 x 560	90	13.4	15.8	✓
R2.2 Pink® Batts® Steel R2.2 Wall	7160214	1220 x 610	90	15.6	15.6	✓
R2.2 Pink® Batts® R2.2 Narrow Wall	7160243	1140 x 360	90	9.0	11.2	✓
R2.4 Pink® Batts® Classic R2.4 Wall	7127124	1140 x 560	90	10.2	12.1	✓
R2.6 Pink® Batts® Ultra® R2.6 Wall	7127126	1140 x 560	90	9.6	11.3	✓
R2.6 Pink® Batts® Ultra® Steel R2.6 Wall	7160215	1220 x 610	90	9.7	9.7	✓
R2.6 Pink® Batts® Ultra® R2.6 Narrow Wall	7160244	1140 x 360	90	7.4	9.2	✓
R2.8 Pink® Batts® Ultra® R2.8 Wall	7127128	1140 x 560	90	6.4	7.5	✓
R2.8 Pink® Batts® Ultra® R2.8 Narrow Wall	7160247	1140 x 360	90	4.5	5.6	✓
140mm Wall Range						
R3.2 Pink® Batts® Ultra® R3.2 140mm Wall	7127132	1140 x 560	140	9.6	11.3	✓
R3.2 Pink® Batts® Ultra® R3.2 140mm Narrow Wall	7160245	1140 x 360	140	7.0	8.6	✓
R3.6 Pink® Batts® Ultra® R3.6 140mm Wall	7127136	1140 x 560	140	7.0	8.3	✓
R4.0 Pink® Batts® Ultra® R4.0 140mm Wall	7127140	1140 x 560	140	5.1	6.0	✓
R4.0 Pink® Batts® Ultra® R4.0 140mm Narrow Wall	7160246	1140 x 360	140	4.1	5.0	✓
ROOF and WALL - Thermal Insulation						
R2.4 Pink® Batts® HandyPack R2.4^	7200158	7000 x 580	90	4.06	-	

* Coverage relates to standard structures (ie with framing allowance) therefore actual coverage may vary.
\# For full details of the Pink® Batts® Lifetime Warranty visit pinkbatts.co.nz/lifetime-warranty.
^ Product does not have the Pink® Batts® Lifetime Warranty or BRANZ Appraised Accreditation.

Wall | PINK® BATTS® WALL INSULATION

Storage and Maintenance

Pink® Batts® insulation should be protected from damage and weather. Store under cover in clean, dry conditions. The installed product should remain dry at all times. If the product becomes wet or damp, the source of dampness (e.g. leak in building) should be repaired and any wet or damp insulation should be removed and replaced with new insulation of an equivalent R-value.

Disposal of bags

Recyclable LLDPE bags are used for packaging of Pink® Batts® insulation.

For further details download the relevant product data sheet from pinkbatts.co.nz

Accreditations/Appraisals/Certifications

BRANZ Appraised
Appraisal No. 238 [2012]

Licence No 2504017.
Thermal Building Insulants

Tasman Insulation New Zealand Ltd
Certified QMS
Telarc. Registered
Quality
ISO 9001

GREENGUARD

pink batts Lifetime WARRANTY

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DISTRIBUTED BY
Tasman Insulation New Zealand Ltd
9-15 Holloway Place, Penrose, Auckland,
New Zealand

BRANZ Appraised
Appraisal No. 878 [2019]

THERMAKRAFT ALUBAND WINDOW FLASHING TAPE

Appraisal No. 878 (2019)

This Appraisal replaces BRANZ Appraisal No. 878 (2014)

BRANZ Appraisals

Technical Assessments of products for building and construction.

Thermakraft Limited
PO Box 58 112
Greenmount
Auckland
Tel: 09 273 3727
Fax: 09 273 3726
Free phone: 0800 806 595
www.thermakraft.co.nz

BRANZ
1222 Moonshine Rd,
RD1, Porirua 5381
Private Bag 50 908
Porirua 5240,
New Zealand
Tel: 04 237 1170
branz.co.nz

Product

1.1 Thermakraft Aluband Window Flashing Tape in conjunction with the Thermakraft Corner Moulded Piece is a flexible flashing tape system for use around framed joinery openings as a secondary weather resistant barrier.

1.2 The system is installed into and around the framed joinery opening over the wall underlay and exposed frame to cover both the face and edge of the opening framing. Thermakraft Aluband Window Flashing Tape is also used at joinery heads to seal flashing upstands to the wall underlay.

Scope

2.1 Thermakraft Aluband Window Flashing Tape has been appraised as a flexible flashing system for use around window and door joinery openings for buildings within the following scope:

- constructed with timber framing in accordance with the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1; or,
- constructed with steel framing subject to specific engineering design with building height and floor plan area scope limitations in accordance with NZBC Acceptable Solution E2/AS1; and,
- with a risk score of 0-20, calculated in accordance with NZBC Acceptable Solution E2/AS1, Table 2; and,
- with wall cladding systems complying with NZBC Acceptable Solution E2/AS1 or a valid BRANZ Appraisal that specifies a flexible flashing system; and,
- with flexible wall underlays compatible with the flashing tape and complying with the NZBC; and,
- situated in NZS 3604 Wind Zones up to, and including, Extra High (refer to Paragraph 7.3).

Building Regulations

New Zealand Building Code (NZBC)

3.1 **In the opinion of BRANZ, Thermakraft Aluband Window Flashing Tape, if designed, used, installed and maintained in accordance with the statements and conditions of this Appraisal, will meet or contribute to meeting the following provisions of the NZBC:**

Clause B2 DURABILITY: Performance B2.3.1 (b), 15 years and B2.3.2. Thermakraft Aluband Window Flashing Tape meets these requirements. See Paragraphs 8.1 and 8.2.

Clause E2 EXTERNAL MOISTURE: Performance E2.3.2. Thermakraft Aluband Window Flashing Tape contributes to meeting this requirement. See Paragraphs 7.1 - 7.4 and 11.1.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Thermakraft Aluband Window Flashing Tape meets this requirement and will not present a health hazard to people.

Technical Specification

4.1 System components and accessories supplied by Thermakraft Limited are:

- Thermakraft Aluband Window Flashing Tape is a polymeric faced, bituminous modified, self-adhesive tape with a release backing paper. The tape is supplied in rolls 200, 150 and 75 mm wide x 25 m long. The rolls are wrapped in clear polythene film.
- The Thermakraft Corner Moulded Piece is made from inert polyethylene and is coloured orange. It is used in conjunction with the Thermakraft Aluband Window Flashing Tape and building underlays as part of the Thermakraft Aluband Window Flashing Tape system.
- The Thermakraft Tool is used to ensure proper adhesion of the Thermakraft Aluband Window Flashing Tape and to achieve a tight fit into corners.

4.2 Accessories used with the system which are supplied by the installer are:

- Thermakraft Corner Moulded Piece fixings - staples, clouts or other temporary fixings to attach the corner mould to the framing prior to the installation of the Thermakraft Aluband Window Flashing Tape.
- Scotch® Super 77™ Multipurpose Adhesive is a clear spray primer.

Handling and Storage

5.1 Handling and storage of all materials supplied by Thermakraft Limited, whether on or off site, is under the control of the installer. Thermakraft Aluband Window Flashing Tape and accessories must be protected from damage and weather. Rolls must be stored under cover, in clean, dry conditions away from direct exposure to sunlight.

Technical Literature

6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for Thermakraft Aluband Window Flashing Tape. The Technical Literature must be read in conjunction with this Appraisal. All aspects of design, use, installation and maintenance contained in the Technical Literature and within the scope of this Appraisal must be followed.

Design Information

General

7.1 Thermakraft Aluband Window Flashing Tape meets the requirements of AC148: 2001 which is an alternative solution to the version of AC148 referenced by NZBC Acceptable Solution E2/AS1 Paragraph 9.1.5 (b). The installation method for Thermakraft Aluband Window Flashing Tape is an alternative solution to the installation method shown within NZBC Acceptable Solution E2/AS1, Figures 72A and 72B.

7.2 The use of flexible flashing systems around window and door joinery openings is critical to assist the overall weathertightness performance of window and door joinery installations.

7.3 Thermakraft Aluband Window Flashing Tape is suitable for use over flexible wall underlays compatible with the flashing tape in NZS 3604 Wind Zones up to and including Extra High. In the Extra High Wind Zone, the flexible underlay must be installed over a rigid underlay complying with NZBC Acceptable Solution E2/AS1, Table 23.

7.4 Thermakraft Aluband Window Flashing Tape is designed to prevent air leakage and water penetration around window and door openings at framing junctions (e.g. at the sill trimmer and opening stud junction), and to keep any water that gets past the cladding, or through the joinery, from direct contact with the framing timber.

7.5 Thermakraft Aluband Window Flashing Tape is not designed to overcome poor detailing and workmanship of the window or door joinery installation. The system must not be considered in isolation, but be considered as part of the wall cladding system. Thermakraft Aluband Window Flashing Tape is designed to be used in conjunction with air seals and joinery flashing systems, not as a substitute.

7.6 When Thermakraft Aluband Window Flashing Tape is used in conjunction with LOSP (light organic solvent preservative) treated timber, the solvent from the timber treatment must be allowed to evaporate (generally at least one week) prior to the installation of the system.

Durability

8.1 Assessment of durability to meet the NZBC is based on difficulty of access and replacement, and the ability to detect failure of Thermakraft Aluband Window Flashing Tape both during normal use and maintenance of the building.

Serviceable Life

8.2 Provided it is not exposed to the weather or ultra-violet light for a total of more than 42 days, and provided the exterior cladding is maintained in accordance with the cladding manufacturer's in-structions and the cladding remains weather resistant, Thermakraft Aluband Window Flashing Tape is expected to have a serviceable life equal to that of the cladding.

Maintenance

9.1 No maintenance is required for Thermakraft Aluband Window Flashing Tape. Regular checks, at least annually, must be made of the junctions between the joinery and wall cladding to ensure that they are maintained weathertight and that the primary means of weather resistance for the junction e.g. flashing, sealant, etc continues to perform its function, to ensure that water will not penetrate the cladding.

Prevention of Fire Occurring

10.1 Separation or protection must be provided to Thermakraft Aluband Window Flashing Tape from heat sources such as fireplaces, heating appliances and chimneys. Part 7 of NZBC Acceptable Solution C/AS1 and C/AS2, and NZBC Verification Method C/VM1 provide methods for separation and protection of combustible materials from heat sources.

External Moisture

11.1 Where a cladding manufacturer specifies the use of generic flashing tapes around window and door joinery openings at framing junctions as part of their system, or they specify the use of flexible flashing tapes that comply with NZBC E2/AS1, Paragraph 9.1.5 (b), Thermakraft Aluband Window Flashing Tape may be used.

Installation Information

Installation Skill Level Requirements

12.1 All design and building work must be carried out in accordance with the Thermakraft Aluband Window Flashing Tape Technical Literature and this Appraisal by competent and experienced tradespersons conversant with flashing tapes. Where the work involves Restricted Building Work (RBW) this must be completed by, or under the supervision of, a Licensed Building Practitioner (LBP) with the relevant License class.

General

13.1 The selected wall underlay must be installed in accordance with the manufacturer's instructions, and must completely cover the joinery opening. The underlay is then cut on a 45° angle away from each corner of the opening so the flaps can be folded into the opening and secured to the interior face of the timber framing.

13.2 Fit a Thermakraft Corner Moulded Piece into each of the bottom corners to create a seal at the corner junction. The corner piece must be fixed to the framing with staples or clouts.

13.3 Before the Thermakraft Aluband Window Flashing Tape is applied, the substrate surfaces must be clean, dry and free from any surface contaminants such as dust and grease that may cause loss of adhesion. When installing Thermakraft Aluband Window Flashing Tape on difficult to bond substrates, Scotch® Super 77™ Spray Adhesive may be used. Ensure that the wall underlay/substrate is dry and free of dirt before applying the spray adhesive. Apply a light spray/coating of the spray adhesive onto the underlay/substrate. Wait for a minute to allow the spray adhesive to become tacky. When tacky to the touch apply the flashing tape in the normal manner.

13.4 A length of Thermakraft Aluband Window Flashing Tape must be cut to the length of the sill plus 400 mm. The tape is installed flush with the interior face of the opening and is applied along the entire length of the sill and 200 mm up each jamb. The overhanging tape is cut at the corner of the opening to allow the tape to be folded onto the face of the building underlay. The Thermakraft Tool must be used to ensure that adequate adhesion of the tape is achieved and that the tape is installed tight into the sill/jamb junction.

13.5 A 400 mm length of Thermakraft Aluband Window Flashing Tape must be installed 200 mm down the jamb and 200 mm along the lintel at each of the top corners of the window or door joinery opening. A 75 mm wide x 100 mm long sealing tape 'butterfly' must be installed at 45° across the corner of the head/jamb junction overlapping the corner by 3 mm to create a seal at the corner junction.

13.6 Thermakraft Aluband Window Flashing Tape must not be stretched. To avoid wastage, the tape can be lapped 100 mm minimum onto itself without reducing the performance of the Thermakraft Aluband Window Flashing Tape system.

13.7 If the Thermakraft Aluband Window Flashing Tape is exposed to the weather or UV light for more than 42 days, then it must be replaced with new material.

Installation Temperature

13.8 Thermakraft Aluband Window Flashing Tape must not be installed at temperatures of less than 5°C.

Inspections

13.9 The Technical Literature must be referred to during the inspection of Thermakraft Aluband Window Flashing Tape installations.

Basis of Appraisal

The following is a summary of the technical investigations carried out:

Tests

14.1 Testing of Thermakraft Aluband Window Flashing Tape has been completed by BRANZ to the requirements of ICC Evaluation Service Acceptance Criteria for Flashing Materials AC148:2001. The adhesion of Thermakraft Aluband Window Flashing Tape to black bituminous Kraft building paper complying with the requirements of NZBC Acceptable Solution E2/AS1, Table 23 and selected other synthetic wall underlays has been tested and found to be satisfactory.

Other Investigations

15.1 An assessment was made of the durability of Thermakraft Aluband Window Flashing Tape by BRANZ technical experts.

15.2 Site inspections were carried out by BRANZ to examine the practicability of installation.

15.3 The Technical Literature has been reviewed by BRANZ and found to be satisfactory.

Quality

16.1 The manufacture of Thermakraft Aluband Window Flashing Tape has not been examined by BRANZ, but details of the quality and composition of the materials used were obtained and found to be satisfactory.

16.2 The quality of supply to the market is the responsibility of Thermakraft Limited.

16.3 Designers are responsible for the building design, and building contractors are responsible for the quality of installation of framing systems and wall underlays in accordance with the instructions of the designer.

16.4 The quality of installation, handling and storage on site is the responsibility of the installer in accordance with the instructions of Thermakraft Limited.

Sources of Information

- ICC Evaluation Service, Inc, AC148 Acceptable Criteria for Flexible Flashing Materials, July 2001.
- NZS 3604: 2011 Timber-framed buildings.
- Ministry of Business, Innovation and Employment Record of amendments - Acceptable Solutions, Verification Methods and handbooks.
- The Building Regulations 1992.

BRANZ

In the opinion of BRANZ, Thermakraft Aluband Window Flashing Tape is fit for purpose and will comply with the Building Code to the extent specified in this Appraisal provided it is used, designed, installed and maintained as set out in this Appraisal.

The Appraisal is issued only to Thermakraft Limited, and is valid until further notice, subject to the Conditions of Appraisal.

Conditions of Appraisal

1. This Appraisal:
   a) relates only to the product as described herein;
   b) must be read, considered and used in full together with the Technical Literature;
   c) does not address any Legislation, Regulations, Codes or Standards, not specifically named herein;
   d) is copyright of BRANZ.
2. Thermakraft Limited:
   a) continues to have the product reviewed by BRANZ;
   b) shall notify BRANZ of any changes in product specification or quality assurance measures prior to the product being marketed;
   c) abides by the BRANZ Appraisals Services Terms and Conditions;
   d) warrants that the product and the manufacturing process for the product are maintained at or above the standards, levels and quality assessed and found satisfactory by BRANZ pursuant to BRANZ's Appraisal of the product.
3. BRANZ makes no representation or warranty as to:
   a) the nature of individual examples of, batches of, or individual installations of the product, including methods and workmanship;
   b) the presence or absence of any patent or similar rights subsisting in the product or any other product;
   c) any guarantee or warranty offered by Thermakraft Limited.
4. Any reference in this Appraisal to any other publication shall be read as a reference to the version of the publication specified in this Appraisal.
5. BRANZ provides no certification, guarantee, indemnity or warranty, to Thermakraft Limited or any third party.

For BRANZ

Chelydra Percy
Chief Executive
Date of Issue:
18 December 2019

BUILDING CONSENT
GRANTED
10/11/2020
HUTT CITY COUNCIL
HUTT CITY TE AWA KAIRANGI

BC201272

Thermakraft

Thermakraft
ONE WRAP SYSTEM
10 Products - One system
One warranty

Installation Guide

WATERGATE PLUS

New Zealand's premium all-purpose, fire retardant wall wrap.

BUILDING CONSENT
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10/11/2020
HUTT CITY COUNCIL
HUTT CITY TE AWA KAIRANGI

Watergate Plus is specifically designed as a wall underlay behind exterior wall cladding. Made from synthetic materials Watergate Plus is fire retardant, water resistant and vapour permeable. The water vapour transfer rate of the product has been optimised to minimise condensation risk in homes without compromising its primary water barrier properties.

Watergate Plus is part of the Thermakraft One Wrap System. Its unique construction allows for easier installation while maintaining best in class performance qualities.

Smarter products. Better buildings.
thermakraft.co.nz

CodeMark BRANZ-CM-1002

BRANZ Appraised
Appraisal No.695 [2017]

Installation Guide

Application Method

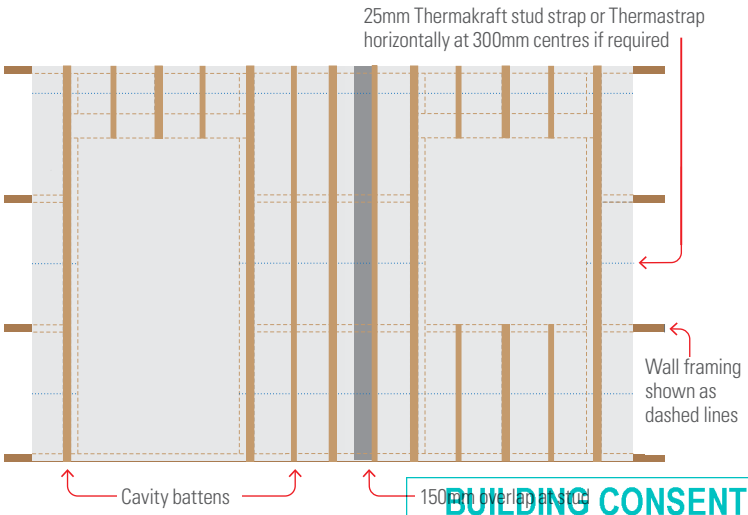
- Fix Watergate Plus underlay with printed side facing the exterior.
- Fix to all exterior walls from below bearers to the top plate. Pull the Watergate Plus underlay tight and fix securely to the frame with fasteners such as galvanized Little Grippers, 6mm-8mm staples or 20mm large head galvanized clouts at 300mm centres horizontally and vertically. Additional fasteners should be used around each opening to be cut out. Fixing types and requirements for steel framed structure can be found in the MRM Code of Practice.
- Watergate Plus underlays are available in widths of 2740mm and 1370mm. The 2740mm width product is generally wide enough to come from below the bottom plate to the top plate.
- When fixing Watergate Plus underlay to Steel framing the same procedures applies, use adhesive spray or tape or flat head screws to fasten to the framing or thermal break, the exterior cladding fastenings will act as the permanent fixings.
- Cover all windows and door openings with Watergate Plus underlay.
- It is recommended that the Watergate Plus underlay is not cut and prepared for window installation until the arrival of the windows. minimum of 150mm lap is required at joins, all vertical laps must be made over studs. Horizontal laps to be laid ship lap style allowing water to be shed to the outer face of the membrane.
- When windows and doors are ready for installation, the Watergate Plus underlay covering the openings should cut at 45° and folded into the opening and securely fastened. Thermakraft window flashing tapes are recommended as the window flashing system.
  Note: In accordance with NZBC Acceptable Solution E2/AS1, wall underlay must be prevented from bulging into the drained cavity. Where stud spacing is greater than 450mm Thermakraft stud strap run horizontal at 300 centres is an acceptable means of prevention.
- Once installed, Watergate Plus must not be left exposed to the weather or UV for a maximum of 60 days. Watergate Plus underlays will provide temporary weather protection during construction allowing work to continue. Internal linings and insulation must not be installed until the exterior cladding is completed.
- Fastenings behind Brick Veneer Cladding must have an equivalent service life to that of Brick Veneer (50 years). Refer to NZS 3604.
- Make good any forced tears with Thermakraft window flashing tapes. Any large areas which require repair may be covered with a second layer of underlay, a lap of 150mm is required.
- Watergate Plus underlay must be installed by a licensed building practitioner.

Fix securely to the frame with fasteners such as 6-8mm staples

On arrival of doors and windows, cut Watergate at each opening on a 45° angle away from each corner. Pull the Watergate flaps inside and fasten to the inside of frame.

Application Tips

Unaffected by LOSP or other solvent based treated timber. However, LOSP or other solvent based treated timber must have sufficient time for the solvent chemical to flash off in a well ventilated area. Recommended minimum 7 days.



Handling and Storage

Thermakraft Watergate Plus underlay must be handled with care to prevent damage such as tearing and roll deformation. Due to the width of the product, care should be taken when installing in windy conditions.

The product must be stored under cover well away from direct moisture, rainfall contact and sunlight (UV). Care should be taken not stack other materials on top of the product.

Thermakraft Limited / 0800 806 595

Issue 1, November 2019

BRANZ Appraised

Appraisal No. 695 [2017]

WATERGATE PLUS WALL UNDERLAY

Appraisal No. 695 (2017)

Amended 26 February 2020

This Appraisal replaces BRANZ Appraisal No. 695 (2010)

BRANZ Appraisals

Technical Assessments of products for building and construction.

Thermakraft

Thermakraft Limited

PO Box 58 112
Greenmount
Auckland

Tel: 09 273 3727

Fax: 09 273 3726

Free phone: 0800 806 595

www.thermakraft.co.nz

BRANZ

BRANZ

1222 Moonshine Rd,
RD1, Porirua 5381
Private Bag 50 908
Porirua 5240,
New Zealand
Tel: 04 237 1170
branz.co.nz

Product

1.1 Watergate Plus is a fire retardant, flexible synthetic wall underlay for use under direct fixed and non-direct fixed wall cladding on timber and steel framed buildings. The product is manufactured from coated, non-woven polyolefin and is coloured white.

Scope

Flexible Wall Underlay

2.1 Watergate Plus has been appraised for use as a flexible wall underlay for buildings within the following scope:

- the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1 for timber framed buildings; or,
- the scope limitations of NASH Building Envelope Solutions, Paragraph 1.1 for steel framed buildings; and,
- with direct fixed absorbent and non-absorbent wall claddings; or,
- with absorbent and non-absorbent wall claddings installed over an 18 mm minimum drained cavity; or,
- with masonry veneer in accordance with NZBC Acceptable Solution E2/AS1 for timber framed buildings or to NASH Building Envelope Solutions for steel framed buildings; and,
- situated in NZS 3604 Wind Zones up to and including Very High.

Use over Rigid Wall Underlay

2.2 Watergate Plus has been appraised for use as a flexible wall underlay over rigid wall underlays on buildings within the following scope:

- the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1 for timber framed buildings; or,
- the scope limitations of NASH Building Envelope Solutions Paragraph 1.1 for steel framed buildings; and,
- with absorbent and non-absorbent wall claddings installed over an 18 mm minimum drained cavity; and,
- with masonry veneer in accordance with NZBC Acceptable Solution E2/AS1 for timber framed buildings or NASH Building Envelope Solutions for steel framed buildings; and,
- situated in NZS 3604 and NASH Standard Part 2 Wind Zones up to and including Extra High.

Specific Design

2.3 Watergate Plus has also been appraised for use on buildings subject to specific weathertightness design. Building designers are responsible for the building design and for the incorporation of Watergate Plus into their design in accordance with the declared properties and the instructions of Thermakraft Limited.

Building Regulations

New Zealand Building Code (NZBC)

3.1 **In the opinion of BRANZ, Watergate Plus, if used, designed, installed and maintained in accordance with the statements and conditions of this Appraisal, will meet, or contribute to meeting the following provisions of the NZBC:**

Clause B2 DURABILITY: Performance B2.3.1 (a), not less than 50 years, B2.3.1 (b), 15 years and B2.3.2. Watergate Plus meets these requirements. See Paragraphs 9.1 and 9.2.

Clause C3 FIRE AFFECTING AREAS BEYOND THE FIRE SOURCE: Performance C3.4 (c). Watergate Plus meets this requirement. See Paragraph 10.1.

Clause E2 EXTERNAL MOISTURE: Performance E2.3.2. When used as part of the cladding system, Watergate Plus will contribute to meeting this requirement. See Paragraphs 12.1 and 12.2.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Watergate Plus meets this requirement and will not present a health hazard to people.

Technical Specification

4.1 Watergate Plus is a white, 105 g/m^2 non-woven, microporous polyolefin fabric underlay.

4.2 The product is supplied in rolls 1.370 m wide x 54.8 and 30 m long, 2.740 m wide x 30 and 18.5 m long and 3 m wide x 30 m long. The product is printed with the Watergate Plus logo repeated along the length of the roll and can also be co-branded with custom printing. The rolls are wrapped in clear polythene film.

Accessories

4.3 Accessories used with Watergate Plus which are supplied by the installer are:

- Fixings - staples, clouts, screws or proprietary underlay fixings, or other temporary fixings to attach the wall underlay to the framing.
- Wall underlay restraint (timber frame) - polypropylene strap, 75 mm galvanised mesh or galvanised wire, or vertical cavity battens where required to restrain the wall underlay in accordance with NZBC Acceptable Solution E2/AS1, Paragraph 9.1.8.5.
- Wall underlay restraint (steel frame) - polypropylene strap, 75 mm galvanised mesh or galvanised wire, or vertical cavity battens where required to restrain the wall underlay in accordance with NASH Building Envelope Solutions, Paragraph 9.1.9.5. Thermal break sheathing installed in accordance with NASH Building Envelope Solutions Paragraph 11.4.3.2.

Handling and Storage

5.1 Handling and storage of the product, whether on or off site, is under the control of the installer. The rolls must be protected from damage and weather. They must be stored on end, under cover, in clean, dry conditions and must not be crushed.

Technical Literature

6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for Watergate Plus. The Technical Literature must be read in conjunction with this Appraisal. All aspects of design, use, installation and maintenance contained in the Technical Literature and within the scope of this Appraisal must be followed.

Design Information

7.1 Watergate Plus is intended for use as an alternative to conventional building papers which are fixed over timber or steel framed walls in order to limit the entry of wind into building cavities, and to act as a secondary barrier to wind-driven rain. Refer to Table 1 for material properties.

7.2 The material also provides a degree of temporary weather protection during early construction. However, the product will not make the building weathertight and some wetting of the underlying structure is always possible before the building is closed in. Hence, the building must be closed-in and made weatherproof before moisture sensitive materials such as wall or ceiling linings and insulation materials are installed.

7.3 Watergate Plus must not be exposed to the weather or ultra violet light for a total of more than 60 days before being covered by the wall cladding.

7.4 Watergate Plus is suitable for use as an air barrier where walls are not lined, such as attic spaces at gable ends, in accordance with NZBC Acceptable Solution E2/AS1 or NASH Building Envelope Solutions, Paragraph 9.1.4 (c).

7.5 In cavity installations where the cavity battens are installed at greater than 450 mm centres, the wall underlay must be restrained between the battens to prevent the underlay bulging into the cavity space when bulk insulation is installed in the wall frame cavity. Refer to NZBC Acceptable Solution E2/AS1, Paragraph 9.1.8.5 for timber frame or NASH Building Envelope Solutions, Paragraph 9.1.9.5 for steel frame. Wall underlay restraint options include polypropylene strap, 75 mm galvanised mesh or galvanised wire, or vertical cavity battens or thermal break sheathing (steel frame only).

Table 1: Material Properties

NZS 2295 Property	Property Performance Requirement	Actual Property Performance
Absorbency	≥ 100 g/m^2	Pass
Vapour Resistance	≤ 7 MN s/g	Pass
Water Resistance	≥ 20 mm	Pass
pH of Extract	≥ 6.0 and ≤ 9.0	Pass
Shrinkage	≤ 0.5%	Pass
Mechanical	Edge tear and tensile strength	**Edge tear (Average):** Machine direction = 77 N Cross direction = 56 N **Tensile strength (Average):** Machine direction = 2.5 kN/m Cross direction = 1.8 kN/m
Air Barrier	Air resistance: ≥ 0.1 MN s/m^3	Pass. Watergate Plus can be used as an air barrier.

Claddings

7.6 Watergate Plus is suitable for use under wall claddings as a wall underlay as called up in NZBC Acceptable Solution E2/AS1, Table 23 on timber framed buildings and NASH Building Envelope Solutions Table 23 a steel framed buildings, including non-absorbent wall claddings such as vinyl and metal-based weatherboards in direct fixed situations.

Stucco Plaster

7.7 Watergate Plus is suitable for use as a non-rigid backing material for stucco plaster in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.3.5.1 for timber framing or NASH Building Envelope Solutions Paragraph 9.3.5.1 for steel framing. The underlay must be supported with 75 mm galvanised mesh or plastic tape or wire at 150 mm centres run across the cavity battens to limit deflection to a maximum of 5 mm.

7.8 Watergate Plus may also be used as a slip layer over rigid backings for stucco plaster in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.3.3.1 (b) for timber framing or NASH Building Envelope Solutions Paragraph 9.3.3.1 b) for steel framing.

Structure

8.1 Watergate Plus is suitable for use in all Wind Zones of NZS 3604 and NASH Standard Part 2 up to, and including, Very High when used as a stand-alone flexible wall underlay, and all Wind Zones of NZS 3604 up to, and including, Extra High when used as an overlay for rigid wall underlays.

Durability

9.1 Watergate Plus meets code compliance with NZBC Clause B2.3.1 (a), not less than 50 years for wall underlays used where the cladding durability requirement or expected serviceable life is not less than 50 years, e.g. behind masonry veneer, and code compliance with NZBC Clause B2.3.1 (b), 15 years for wall underlays used where the cladding durability requirement is 15 years.

Serviceable Life

9.2 Provided it is not exposed to the weather or ultra-violet light for a total of more than 60 days, and provided the exterior cladding is maintained in accordance with the cladding manufacturer's instructions and the cladding remains weather resistant, Watergate Plus is expected to have a serviceable life equal to that of the cladding.

Control of Internal Fire and Smoke Spread

10.1 Watergate Plus has an AS 1530 Part 2 flammability index of not greater than 5 and therefore meets the requirements of NZBC Acceptable Solutions C/AS2, Paragraph 4.17.8 (b), for the surface finish requirements of suspended flexible fabric used as an underlay to exterior cladding that is exposed to view in occupied spaces.

Prevention of Fire Occurring

11.1 Separation or protection must be provided to Watergate Plus from heat sources such as fire places, heating appliances, flues and chimneys. Part 7 of NZBC Acceptable Solutions C/AS1, C/AS2 and NZBC Verification Method C/VM1 provide methods for separation and protection of combustible materials from heat sources.

External Moisture

12.1 Watergate Plus must be used behind claddings that meet the requirements of the NZBC, such as those covered by NZBC Acceptable Solution E2/AS1 or NASH Building Envelope Solutions, or claddings covered by a valid BRANZ Appraisal.

12.2 Watergate Plus, when installed in accordance with the Technical Literature and this Appraisal will assist in the total cladding systems compliance with NZBC Clause E2.

Installation Information

Installation Skill Level Requirements

13.1 All design and building work must be carried out in accordance with the Watergate Plus Wall Underlay Technical Literature and this Appraisal by competent and experienced tradespersons conversant with wall underlays. Where the work involves Restricted Building Work (RBW) this must be completed by, or under the supervision of, a Licensed Building Practitioner (LBP) with the relevant Licence Class.

Underlay Installation

14.1 Watergate Plus must be fixed to all framing members at maximum 300 mm centres with large-head clouts 20 mm long, 6-8 mm staples, self drilling screws or proprietary underlay fixings. The underlay must be pulled taut over the framing before fixing.

14.2 Watergate Plus must be run horizontally and must extend from the upper-side of the top plate to the under-side of the bearers or wall plates supporting ground floor joists, or below bottom plates on concrete slabs. Horizontal laps must be no less than 150 mm wide, with the direction of the lap ensuring that water is shed to the outer face of the membrane. End laps must be made over framing and be no less than 150 mm wide.

14.3 The wall underlay should be run over openings and these left covered until windows and doors are ready to be installed. Openings are formed in the underlay by cutting on a 45 degree diagonal from each corner of the penetration. The flaps of the cut underlay must be folded inside the opening and stapled to the penetration framing. Excess underlay may be cut off flush with the internal face of the wall frame.

14.4 Watergate Plus can be added as a second layer over head flashings in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.1.10.3 for timber frames or NASH Building Envelope Solutions Paragraph 9.1.11.3 for steel framing.

14.5 When fixing the product in windy conditions, care must be taken due to the large sail area created by wide roll widths.

14.6 Any damaged areas of Watergate Plus, such as tears, holes or gaps around service penetrations, must be repaired. Damaged areas can be repaired by covering with new material lapping the damaged area by at least 150 mm and taping, or by taping small tears.

Inspections

14.7 The Technical Literature must be referred to during the inspection of Watergate Plus installations.

Basis of Appraisal

The following is a summary of the technical investigations carried out:

Tests

15.1 The following tests have been carried out on Watergate Plus in accordance with NZBC Acceptable Solution E2/AS1, Table 23: tensile strength, edge-tear resistance and resistance to water vapour transmission in accordance with AS/NZS 4200.1, shrinkage in accordance with AS/NZS 4201.3, resistance to water penetration in accordance with AS/NZS 4201.4, surface water absorbency in accordance with AS/NZS 4201.6, pH of extract in accordance with AS/NZS 1301.421s and air resistance to BS 6538.3. A range of these tests were completed before and after Watergate Plus was exposed to ultra-violet light.

15.2 The flammability Index of Watergate Plus has been evaluated in accordance with AS/NZS 1530.2.

Other Investigations

16.1 A durability opinion has been given by BRANZ technical experts.

16.2 An evaluation of the expected performance of Watergate Plus in direct contact with metal wall cladding has been completed by BRANZ.

16.3 The practicability of installation of Watergate Plus has been assessed by BRANZ and found to be satisfactory.

16.4 The Technical Literature, including installation instructions, has been examined by BRANZ and found to be satisfactory.

Quality

17.1 The manufacture of Watergate Plus has not been examined by BRANZ, but details of the methods adopted for quality control and the quality of the materials used, have been obtained and found to be satisfactory.

17.2 The quality of supply to the market is the responsibility of Thermakraft Limited.

17.3 Building designers are responsible for the design of the building, and for the incorporation of the wall underlay into their design in accordance with the instructions of Thermakraft Limited.

17.4 Quality of installation is the responsibility of the installer in accordance with the instructions of Thermakraft Limited.

Sources of Information

- AS 1530.2: 1993 Test for flammability of materials.
- AS/NZS 1301.421s: 1998 Determination of the pH value of aqueous extracts of paper, board and pulp - Cold extraction method.
- AS/NZS 4200.1: 1994 Pliable building membranes and underlays - Materials.
- AS/NZS 4201.1: 1994 Pliable building membranes and underlays - Methods of test – Resistance to dry delamination.
- AS/NZS 4201.2: 1994 Pliable building membranes and underlays - Methods of test – Resistance to wet delamination.
- AS/NZS 4201.3: 1994 Pliable building membranes and underlays - Methods of test – Shrinkage.
- AS/NZS 4201.4: 1994 Pliable building membranes and underlays - Methods of test – Resistance to water penetration.
- AS/NZS 4201.6: 1994 Pliable building membranes and underlays - Methods of test – Surface water absorbency.
- BS 6538.3: 1987 Method for determination of air permeance using the Garley apparatus.
- NZS 2295: 2006 Pliable, permeable building underlays
- NZS 3604: 2011 Timber-framed buildings.
- NASH Building Envelope Solutions: 2019 Light steel framed buildings.
- NASH Standard Part Two: 2019 Light Steel Framed Buildings
- Ministry of Business, Innovation and Employment Record of Amendments - Acceptable Solutions, Verification Methods and Handbooks.
- The Building Regulations 1992.

BRANZ

Amendments

Amendment No 1, dated 30 November 2018

This Appraisal has been amended to change the Appraisal name to Watergate 295 Synthetic Underlay and to update Table 1.

Amendment No 2, dated 15 February 2019

This Appraisal has been amended to change the Appraisal name to Watergate Plus Wall Underlay

Amendment No 3, dated 26 February 2020

This Appraisal has been amended to change the Appraisal name to Watergate Plus, include roll size of 3.0 m x 30 m, update Table 1 and update NZBC referenced documents.

In the opinion of BRANZ, Watergate Plus Wall Underlay is fit for purpose and will comply with the Building Code to the extent specified in this Appraisal provided it is used, designed, installed and maintained as set out in this Appraisal.

The Appraisal is issued only to Thermakraft Limited, and is valid until further notice, subject to the Conditions of Appraisal.

Conditions of Appraisal

1. This Appraisal:
   a) relates only to the product as described herein;
   b) must be read, considered and used in full together with the Technical Literature;
   c) does not address any Legislation, Regulations, Codes or Standards, not specifically named herein;
   d) is copyright of BRANZ.
2. Thermakraft Limited:
   a) continues to have the product reviewed by BRANZ;
   b) shall notify BRANZ of any changes in product specification or quality assurance measures prior to the product being marketed;
   c) abides by the BRANZ Appraisals Services Terms and Conditions.
   d) Warrants that the product and the manufacturing process for the product are maintained at or above the standards, levels and quality assessed and found satisfactory by BRANZ pursuant to BRANZ's Appraisal of the product.
3. BRANZ makes no representation or warranty as to:
   a) the nature of individual examples of, batches of, or individual installations of the product, including methods and workmanship;
   b) the presence or absence of any patent or similar rights subsisting in the product or any other product;
   c) any guarantee or warranty offered by Thermakraft Limited.
4. Any reference in this Appraisal to any other publication shall be read as a reference to the version of the publication specified in this Appraisal.
5. BRANZ provides no certification, guarantee, indemnity or warranty, to Thermakraft Limited or any third party.

For BRANZ

Chelydra Percy
Chief Executive

Date of Issue:
21 September 2017

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10/11/2020
HUTT CITY COUNCIL
HUTT CITY TE AWA KAIRANGI