



BEAL Appraisal Certificate



NZ Tape Specs' FUTURESEAL Waterproof Butyl Sealing Tape

futureseal



tape^{spec}TM
NEW ZEALAND'S TAPE SPECIALISTS

Product

1.1 NZ TAPE SPECIALISTS' FUTURESEAL waterproof butyl sealing tape is a flexible, waterproofing jointing system made from self-adhesive butyl rubber tape with a nonwoven polyester backing. The FUTURESEAL tape is suited to the exterior waterproofing of joints on fibre-cement sheets and for interior junctions of impervious wall linings with concrete, such as fibre-cement sheet wall lining and plasterboard linings designed for wet areas, to a sealed concrete floor, which is to be tiled over.

The adhesion of the tape improves with time and remains watertight with periodic wetting.

Building Regulations

2.1 In the opinion of BEAL, the FUTURESEAL tape, if designed, installed and maintained in accordance with the statements and conditions of this Appraisal Certificate, will meet the following provisions of the NZBC:

2.2 Clause B2 DURABILITY

Performance B2.3.1 (a) and (b), at least 50yrs or 15 years. The FUTURESEAL tape meets this requirement. See paragraphs XX

2.3 Clause E3 INTERNAL MOISTURE

Performance E3.3.1. The FUTURESEAL tape will contribute towards meeting this requirement. See paragraph XX

2.4 Clause E2 EXTERNAL MOISTURE

Performance E2.3.2. FUTURESEAL tape contributes to a building meeting the performance requirements of clause E2.3.2 of the Building Code when installed in accordance with this Appraisal. See paragraph XX

2.5 Clause F2 HAZARDOUS BUILDING MATERIALS

Performance F2.3.1. The FUTURESEAL tape Cellulose Loose Fill Insulation meets this requirement and will not present a health hazard to people.

2.6 The FUTURESEAL tape has been appraised as an **Acceptable Solution** in terms of New Zealand Building Code compliance.

Applicant:

NZ Tape Specialists Limited



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Scope and Limitations

3.1 FUTURESEAL tape must be used in conjunction with components of a wall assembly that comply with E2/AS1 in all respects, except as varied herein, in order to meet the Performances of the Building Code claimed in this Appraisal. This limitation includes restricting the use of the products to timber framed buildings complying with NZS 3604: 1999 'Timber Framed Buildings' and to wall wraps that comply with Table 23 of E2/AS1.

- The tape when installed shall not be left exposed to the weather for more than 24 hours

3.2 FUTURESEAL tape must be installed in accordance with the Technical Literature to produce the performance determined within this Appraisal Certificate.

Technical Literature

4.1 Refer to the FUTURESEAL TAPE Technical Literature dated Oct 2012. The Technical Literature must be read in conjunction with this Appraisal Certificate. All aspects of design, use, installation and maintenance contained within the Technical Literature and scope of this Appraisal Certificate must be followed.

4.2 For a copy of this Technical Literature and any subsequent updates please refer to:

www.tapespec.co.nz

Technical Specification

5.1 FUTURESEAL TAPE is an organic cellulose product manufactured from 100% clean recycled paper. During the milling process it is treated with a Boron/Borax based fire retardant and a vermin repellent. The insulation material is then packed into bales (16kg) in preparation for transport to site. FUTURESEAL TAPE is grey in colour.

5.2 On site, the insulation material is mechanically blown into the wall cavity or ceiling space in combination with a continuous flow of adhesive to the desired density and depth to achieve the appropriate R-value. A depth measuring device is used to check that the minimum thickness of insulation has been applied over the top of the ceiling lining.

Table 1.0: R-Values

5.3 Labeling complying with AS/NZS 4859.1 is supplied with each installation.

Handling and Storage

6.1 The insulation material must be stored under

cover and kept dry.

Design Information

General

7.1 The building envelope must be constructed to ensure the insulation material remains dry for the life of the building.

7.2 A 25mm air gap (minimum) is required between the FUTURESEAL TAPE and the roof underlay.

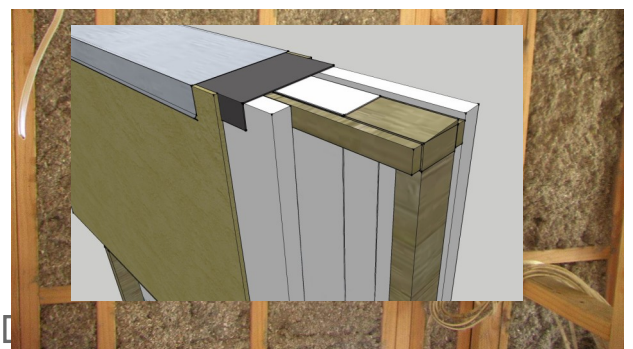
7.3 Clearances specified in the Technical Literature, or those specified by the manufacturer of heating appliances or recessed down-light fittings must be met. Note that the use of recessed lights may reduce the thermal performance of the insulated ceiling space. This should be considered when determining compliance with NZBC Clause H1 Energy Efficiency. Refer to Table 1 in NZS 4246:2006 for recommended clearances.

7.4 Where recessed down-lights are used, in order to meet both energy efficiency and fire safety requirements, it is essential to incorporate an approved 'down-light heat barrier' meeting the appropriate performances.

FUTURESEAL TAPE Ltd allows the use of the 'InsulGuard Recessed Luminaries Heat Barrier', to meet this requirement. The Heat Barrier is designed to be fitted over recessed down-light fittings by a suitably trained tradesman. Other proprietary Heat Barriers that may be suitable have not been assessed and are outside the scope of this Appraisal Certificate.

7.5 Where FUTURESEAL TAPE is installed into a wall with stud spacings that are greater than 450mm, a means of restraining the insulation from bulging into the drained cavity must be installed in accordance with NZBC Acceptable Solution E2/AS1 Paragraph 9.1.8.5.

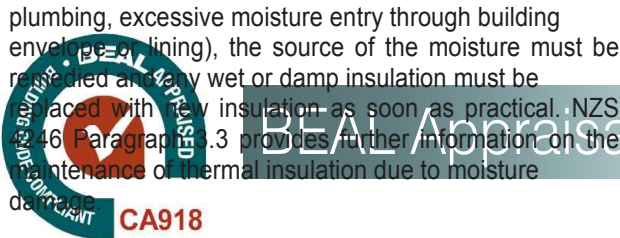
7.6 Where the insulation material is blown into a wall, the installer shall ensure a tight fit between the building wrap and internal lining.



8.1 When FUTURESEAL TAPE is used and installed in accordance with this Appraisal Certificate and Technical Literature, and the building is maintained so that the conditions of NZBC Clauses E2 and E3 are met, and the product is not crushed or exposed to external conditions (moisture and rain), then it is expected to have a serviceable life of at least 50 years.

Maintenance

8.2 The building must remain weatherproof at all times. During normal routine maintenance the condition of the insulation should be checked. Should evidence of the presence of moisture be discovered (e.g. leaking



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Outbreak of fire

9.1 Though FUTURESEAL TAPE is treated with a fire retardant, the product must be properly separated from sources of heat such as chimneys, fire places, flues and fuel burning appliances to ensure compliance in accordance with Clause C1.3.2 of the NZBC.

External Moisture

10.1 The total building envelope must meet the requirements of the NZBC Clause E2.3.2, to prevent the insulation material from being exposed to moisture. The insulation material must remain dry at all times. *(If FUTURESEAL TAPE becomes wet its thermal performance will be reduced. For material affected by dampness consult the manufacturer for advice).*

10.2 The moisture content of the construction materials, including timber framing and lining materials at the time of installing the insulation must not exceed the 18% moisture content or the moisture content requirements specified by manufacturer of the wall or ceiling linings to be fixed under or over the insulation.

Internal Moisture - Clause E3

11.1 An adequate combination of thermal resistance, ventilation, and space temperature must be provided to all habitable spaces, bathrooms, laundries, and other spaces where moisture may be generated or may accumulate. Please note this applies to all buildings except for the following: Communal Non-residential, Commercial, Industrial, Outbuildings or Ancillary buildings.

Energy Efficiency– Clause H1 Building Thermal Envelope

12.1 The Verification Method H1/VM1 can be used for verifying the compliance of Housing, Communal residential, Communal non-residential and Commercial buildings.

Modeling of Housing and Small Buildings

12.2 The modelling method described in NZS 4218 section 3.3 (as modified by Paragraphs 1.1.2 and 1.1.3 below of H1/VM1) is a Verification Method for NZBC Clause H1.3.1(a) for the following types of buildings:

- a) Housing, regardless of total floor area (the method is also a means of compliance with H1.3.2 (A and B, or C and D, or E, as appropriate), which applies only to housing), and
- b) Small buildings with a net lettable area no greater than 300 m².

12.3 Compliance with NZBC Clause H1.3.2E (Building Performance Index or BPI) satisfies Clause H1.3.1(a).

Modeling of Large Buildings other than Housing

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12.4 The modelling method described in NZS 4243.1 section 4.4 is a Verification Method for NZBC Clause H1.3.1(a) for buildings other than housing having a net lettable area greater than 300 m².

12.5 The thermal resistance (R-values) of building elements may be verified by using NZS4214.

Housing and small Buildings

12.6 Construction in accordance with NZS 4218 sections 3.1 or 3.2 (as modified by Paragraphs 2.1.3 and 2.1.4) satisfies NZBC H1.3.1(a) for housing of any size and all buildings having a net lettable area no greater than 300m².

12.7 Construction in accordance with NZS 4218 sections 3.1 or 3.2 (as modified by Paragraphs 2.1.3 and 2.1.4) satisfies NZBC Clause H1.3.2 (A and B, or C and D, or E, as appropriate) for housing of any size, including the external walls of multi-unit dwellings. (Note that common walls between household units of multi-unit dwellings need not comply with NZS 4218.)

Installation Information

Installation Skill Level Requirement

13.1 Installation of the FUTURESEAL TAPE shall be by an applicator licensed by FUTURESEAL TAPE Ltd.

General

14.1 Installation of the FUTURESEAL TAPE material must be made in accordance with the manufacturer's Technical Literature and this Appraisal Certificate. NZS 4246 should be referred to for the installation of insulation in residential buildings.

14.2 FUTURESEAL TAPE must only be installed when the building envelope is complete and the construction materials have reached their required moisture content (paragraph 10.2) to ensure the thermal insulation material does not get wet.

14.3 The areas to be insulated are to be inspected to ensure all timber framing is complete, all plumbing and drainage service pipe-work is installed properly, all other mechanical service installation equipment are installed and electrical fittings protected.

14.4 FUTURESEAL TAPE material is emptied from the bales into the hopper of the blow/spray unit where the contents of the bale is fluffed up ready for installation.

14.5 FUTURESEAL TAPE is mechanically blown into lined ceilings or wall cavities to the required thickness to produce the required minimum R-value.

14.6 The adhesive is continuously applied to the product as it is blown into the ceiling rather than just a layer on top. The process is similar for walls but with less glue added to ensure the insulation does not slump and that the appropriate thickness maintained.

14.7 The insulation must be installed into every space in the wall cavity. For ceiling applications, the insulation must be continuous across the entire ceiling plane NZ between the top plates of external walls, and installed either between or over rafters, ceiling joists or truss chords according to the depth of rafter/ceiling joist.

14.8 In ceiling areas where recessed light fittings and

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heat sources are fitted, special attention is required to ensure recommended clearances are maintained in accordance with paragraphs 7.3 and 7.4.

A down-light heat barrier, such as the InsulGuard recessed luminaires Heat Barrier shall be installed above and any recessed down-lights.

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Health and Safety

15.1 FUTURESEAL TAPE is a Green Choice organic product and is a non irritant to human skin and does not pose a health threat. Safety equipment should be worn to protect the applicator breathing or swallowing the insulation material during handling and installation. NZS 4246 provides further guidance for health and safety requirements.

Basis of Appraisal

BEAL use the compliance verification procedure to demonstrate compliance with the relevant clauses of the NZBC based on a risk analysis procedure. The following is a summary of the technical investigations carried out

Tests

16.1 The thermal performance of the FUTURESEAL TAPE material has been measured in accordance with ASTM C518 as part of AS/NZS 4859.1 requirements by an accredited laboratory.

16.2 The resistance to fungal growth in accordance with ASTM C1328 (modified) was assessed by Biodet Services Ltd

16.3 The resistance to surface ignition by way of measuring ignition indices were carried out by APL Applied Physics Laboratory in accordance with AS 1530 Part 3 1999.

16.4 The resistance to the effects of high temperature and humid conditions were assessed by BEAL using an in-house test method.

Other Investigations

17.1 An assessment of the durability of the FUTURESEAL TAPE has been made by BEAL based on in-service history.

17.2 The manufacturer's Technical literature and Installation instructions have been assessed by BEAL and found to be satisfactory.

Quality

18.1 The manufacture of FUTURESEAL TAPE has been assessed by BEAL, including quality control measures. Details of the manufacturing process, quality and composition of the raw materials used were obtained by BEAL and found to be satisfactory.

18.2 The quality of materials, components and accessories supplied by COMPANY NAME is managed through the use of a **BEAL Tape Specialists Limited** **CA918** **NEW ZEALAND'S TAPE SPECIALISTS** **www.tapespec.co.nz** **09 272 9020** **www.tapespec.co.nz**

18.4 The COMPANY NAME Building Product Quality

Plan is reviewed at least annually by BEAL.

18.5 Quality on site is the responsibility of the FUTURESEAL TAPE Ltd licensed applicators.

18.6 For a copy of this Technical Literature and any subsequent updates please refer to: www.companyname.co.nz

18.7 Building owners are responsible for the maintenance of the building to ensure the FUTURESEAL TAPE remains dry .

Sources of Information

- ASTM C518-04 Standard test method for steady state heat flux measurements and thermal properties by means of the heat flow meter apparatus.
- ASTM C1338-08 Standard Test Method for Determining Fungi Resistance of Insulation Materials and Facings
- AS 1530 Part 3, 1999 Simultaneous determination of Ignitability, flame propagation, heat release and smoke release
- AS/NZS 4859.1:2002 Materials for the thermal insulation of buildings.
- NZS 4214: 2006 Method of determining the total thermal resistance of parts of buildings.
- NZS 4218: 2004 Energy Efficiency - housing and small building envelope
- NZS 4243: 1996 Energy Efficiency - large buildings
- NZS 4246:2006 Energy efficiency - Installing Insulation in residential buildings
- Compliance Document E2/AS1 published by the Department of Building and Housing, Third edition May 2008, incorporating amendments 1 to 4.
- The Building Regulations 1992, up to, and including October 2004 Amendment including the Building Code
- The "Verification Report for INSULATION PRODUCT" produced by the Joyce Group Ltd.

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C R Prouse - Director
[MONTH YEAR]

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[Expires Feb 2015]

Concluding statement

19.1 In the opinion of BEAL, the INSULATION PRODUCT material is fit for purpose and will comply with the NZBC to the extent specified provided that it is used, designed, installed and maintained as set out in this Appraisal Certificate.

The Appraisal Certificate is issued only to Green Choice Insulation Ltd, and is valid until further notification, subject to the conditions of this Appraisal.

Conditions of Appraisal

1. This Appraisal Certificate :
 - A) Relates only to the FUTURESEAL TAPE 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 BEAL

2. The Appraisal Certificate holder continues to meet the quality requirements of the COMPANY NAME Building Product Quality Plan and has the plan revalidated by BEAL on an annual basis.

3. FUTURESEAL TAPE Ltd, shall notify BEAL and obtain approval of any changes in product specification or quality assurance prior to product being marketed including any trade literature, web site info or the like.

4. BEAL makes no representation 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 the Appraisal Certificate holder

5. BEAL's verification of the building product or system being able to comply with one or more above-mentioned criteria is given on the basis that the criteria used were those that were appropriate to demonstrate compliance with the NZBC at the date of this Appraisal Certificate. In the event that the criteria is withdrawn or amended at a later date, this Appraisal may no longer be valid.

6. Any reference in this Appraisal Certificate to a publication shall be read as a reference to the version of the publication specified in this Appraisal Certificate.

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