

Appraisal of a Building Product



Spec Batt™ - a shaped insulating cavity batten, especially useful with metal cladding systems

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CA621 Completed December 2006
Verification of Clauses B2, E3 and H1
of the New Zealand Building Code



General Information

Description of Product

The Spec Batt™ is designed for use as a cavity batten behind light to medium weight cladding systems that are used on houses and light commercial buildings.

Owing to its high insulating properties it is ideal for meeting the performance requirement of clause E3, which

requires metal cladding systems to have a thermal break.

Maintaining a clear pathway for moisture and air movement is also essential for the proper functioning of a cavity behind the rain screen of a cladding system.

Trade Literature

The Spec Batt™ Data Sheet Version 1 ref: TB000207 dated January 2006 describes installation of Spec Batt™ cavity batten.

Applicant

The applicant is A Class Industry Supplies Ltd.

Scope & Limitations

The Spec Batt™ cavity batten must be used in conjunction with framing and other 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.

Fixings must not be over-tightened.

E2/AS1 refers to the acceptable solution contained in the Department of Building and Housing's Compliance Document for New Zealand Building Code Clause E2 'External moisture', Third Edition including Amendments 1 and 2 and Erratum 1.

The Spec Batt™ cavity batten has been appraised as complying with acceptable solution E3/AS1.

Detailed Information

Technical Description

The Spec Batt™ cavity batten is made from a closed cell material which exhibits complete moisture resistance. The product comprises of nominally 20 mm thick strips 2400mm long of extruded polystyrene cut to a unique "S" shape to provide full width of cover of a nominal ex 100 x 50mm timber or typical width steel framing stud. As Spec Batt™ is made of a rigid foam plastic, it is easy for the installer to obtain the required length of Spec Batt™, to suit the height of the stud, using a sharp knife or saw.

The Spec Batt™ cavity batten can be temporarily attached to the timber

stud by way of a construction adhesive or staple, before being nailed or screw-fixed through, to fix the outer cladding or rain screen material to the framing. For steel stud construction adhesive or screw fixing is recommended. Note that the adhesive must be checked before use to ensure the Spec Batt™ cavity batten is not adversely affected by the adhesive's use.

Product Data

The 20mm thick product is supplied in 1.2 or 2.4m lengths. Extruded polystyrene used in the manufacture of the Spec Batt™ has a compressive strength 3 times that of common expanded polystyrene (EPS) resulting in a stiff, difficult to compress material. For further advice contact A Class Industry Supplies Ltd.

The product is impervious to water and nearly impervious to moisture vapour.

The product is of relative low density, being about one ninth that of typical dry pinus radiata.

The product has a low co-efficient of expansion and low fire ignitability index making it a suitable material for use as a batten.

Storage & Handling

The Spec Batt™ cavity batten can be stored indefinitely when kept dry and out of the weather.

Specific Performances with the NZ Building Code

Clause B2 - Durability

The Spec Batt™ cavity batten when used in accordance with this Appraisal will meet Performance B2.3.1(b) of the New Zealand Building Code. In other words, the product as appraised will be durable for the life of the building.

Clause E3 - Internal Moisture

The Spec Batt™ cavity batten contributes to a cladding system meeting the performance requirements of clauses E3.3.1 (and E2.3.2) of the Building Code when installed in accordance with this Appraisal.

In other words, the product as appraised will prevent the loss of thermal energy that could cause "illness, injury or loss of amenity".

SPEC BATT™
NON TIMBER INSULATING
CAVITY BATTEN



calculated R-Value R0.9 for 20mm thick strips and R-Value R1.1 for 25mm thick strips.

How to Install the Product

The installation of the Spec Batt™ cavity batten is described in the Spec Batt™ Data Sheet Version 1 ref: TB000207 dated January 2006.

It is important that fixings through the batten are not over tightened.

Examples of fixing methods with various cladding type products using Spec Batt™ are -

- For use under fibre-cement sheets – using 75mm 3.15mm dia. galvanised nails or 75mm class 3 screws;
- For use under timber weatherboards – using 75mm 3.15mm dia. ring-shanked or annular grooved galvanised nails or 75mm class 3 screws;
- For use under plywood – using 75mm 3.15mm dia. ring-shanked or annular grooved galvanised nails or 75mm class 3 screws;
- For use under vertical or horizontal profiled metal cladding – using 12 gauge hexagonal head self-drilling wood screw, hot dip galvanised, class 4 to AS 3566.2, - with a minimum penetration into stud framing of 25mm;
- For use under 40mm Expanded Polystyrene – using 90mm 3.75mm dia. galvanised nails or 90mm class 3 screws ;
- For use under 60mm Expanded Polystyrene – using 110mm 4 mm dia. galvanised nails or 110mm class 3 screws.

For steel frame fixing screw type and length may vary – see manufacturer. For other applications specific design must be sought from the manufacturer

Basis of Appraisal

Clause B2 - Durability

For assessing the durability of the The Spec Batt™ cavity batten, historic use of the material is relied on. Though extruded polystyrene was invented in the late 30's, it has only been available for use since 1954.

The performance over the past fifty years has shown that the product is resistant to the New Zealand environment. [Refer to the Verification of Compliance on page 4.]

E3 - Internal Moisture

The Spec Batt™ cavity batten was assessed for proper design and the product's thermal performance values in order to verify or otherwise compliance with the requirements of Clause E3.3.1 of the Building Code.

H1 - Energy Efficiency

The Spec Batt™ cavity batten was evaluated using known thermal performance values for the base material supplied by the manufacturer.

The Spec Batt™ cavity batten was also evaluated in practical building situations to assess the following:

- Ease of installing the product /system
- Potential risks of non performance when being installed
- Any external factors that could effect the quality of the installed product
- The impact of other building products /systems when in contact
- Comparison with other similar products.

Product QA Information

The base material is high density extruded polystyrene and is manufactured overseas to in-house standards. The Spec Batt™ cavity batten is manufactured in New Zealand. The product is covered by a Quality Assurance programme to ensure continuous compliance with the New Zealand Building Code.

Design Considerations

The Spec Batt™ cavity batten can be installed over timber framing complying with NZS 3604 and over light-weight steel framing complying with NASH 3405:2006 to provide a 20mm cavity.

Spec Batt™ is not designed to provide structural support.

Note:

When specifying the Spec Batt™ cavity batten the product name should be accompanied by the BEAL Appraised number. E.g. *Spec Batt™ cavity batten: BEAL Appraised CA621.*

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Verification of Compliance

Methods Used

- In service history
- Trade literature
- A calculation or test method from a laboratory or testing facility

This appraisal uses the in service history and trade literature provided by the manufacturer, being 50 years internationally, together with the testing carried out by the Building Element Assessment Laboratory Ltd. (BEAL), as the 'methods' for demonstrating compliance with the relevant clauses of the Building Code.

[Methods suggested by the Department of Building and Housing - refer www.dbh.govt.nz]

In addition, the following documentation was consulted:

- New Zealand Building Code
- Acceptable Solutions E2/AS1 and H1/AS1
- NZS 4214(INT):2002 Methods of determining the total thermal resistance of parts of buildings
- NZS 4218:2004 Energy Efficiency – Small Building Envelope
- HERA Report R4-72 The Thermal Insulation Performance Of Light-Weight Steel External Wall Elements
- Various web based documents giving a historic background to the origin, manufacture and performance of extruded polystyrene.
- An assessment for ease of use carried out by BEAL.
- Technical and trade literature provided by the manufacturer.

Installation Information

Spec Batt™ cavity battens can be installed by any competent tradesman using the appropriate tools and equipment.

The Spec Batt™ Data Sheet Version 1 ref: TB000207 dated January 2006 describes installation of Spec Batt™ cavity batten.

Ordering Information

The Spec Batt™ cavity batten can be ordered from A Class Industry Supplies Limited.

Health & Safety Information

The Spec Batt™ cavity batten presents no known health and safety issues when installed. Refer to the Material Safety Data Sheet.





Conditions of this Appraisal

1. The Products continue to comply with the quality assurance measures of A Class Industry Supplies Ltd. These quality assurance measures have been viewed and approved by BEAL.
2. The products comply with the conditions of this appraisal and with the Spec Batt™ Data Sheet Version 1 ref: TB000207 dated January 2006.
3. A Class Industry Supplies Ltd continues to have the product range reviewed and quality assurance programme audited annually by BEAL.
4. The overall quality and performance of the products are maintained.
5. A Class Industry Supplies Ltd. shall notify BEAL of any changes in specification or quality assurance measures prior to them coming into effect.
6. BEAL staff use BQI Interim Performance Standards (in the absence of a relevant AS/NZS Standard) for carrying out field-testing and assessment of External Moisture factors. These assessments are performed either on site or in BEAL's facilities and carried out by experienced and qualified specialists.
7. The system has been tested against one or more of the following criteria which was applicable at the time of the initial assessment:
 - a measurable criteria described in the Building Code
 - a relevant New Zealand or Australian or International Standard
 - a requirement set out in a Building Quality Institute Interim Performance Standard
 - an appropriate requirement set out in a New Zealand Department of Building & Housing document
8. BEAL's verification of the building product or system as complying with one or more criteria is given on the basis that the criteria used were those that were used to demonstrate compliance with the Building Code at the date of this appraisal. In the event that the criteria are withdrawn or amended at a future date, this Appraisal may no longer remain valid.



BEAL's approval logo is the assurance that a building product complies with the requirements of the New Zealand Building Code.

Using the latest in Australasian and overseas testing and assessment methods and criteria, BEAL's logo is a sign of confidence -



- ◆ Confidence for the architect or designer that the product literature and details will meet their specific needs;
- ◆ Confidence for the Building Certifying Authority that the product has been evaluated in a rigorous manner to demonstrate or otherwise, compliance with the relevant Clauses of the NZ Building Code;
- ◆ Confidence for the builder and installer that the Technical Manuals are clear and easy to understand.

BEAL's 'Approval Logo' is being promoted throughout the building industry thus ensuring maximum exposure for all products that carry this logo. For further information contact Colin Prouse at BEAL on (+64) 4 233 6661 or e-mail at sales@beal.co.nz



Contact Details



The distributor of the Spec Batt™ cavity batten is A Class Industry Supplies Ltd.

A Class Industry Supplies Ltd. can be contacted at:

Head Office 06 329 8065

Fax 06 329 8064

E-mail sales@acis.co.nz

Web Site www.acis.co.nz

Sales enquires to Mr. Mathew Noud

Technical enquiries to Mr. John Villani



BEAL can be contacted at:

Head Office 04 233 6661

Fax 04 233 6662

E-mail sales@beal.co.nz

Web Site <http://www.beal.co.nz>

Further information about this Appraisal can be directed to Mr Colin Prouse