



BRANZ Appraised

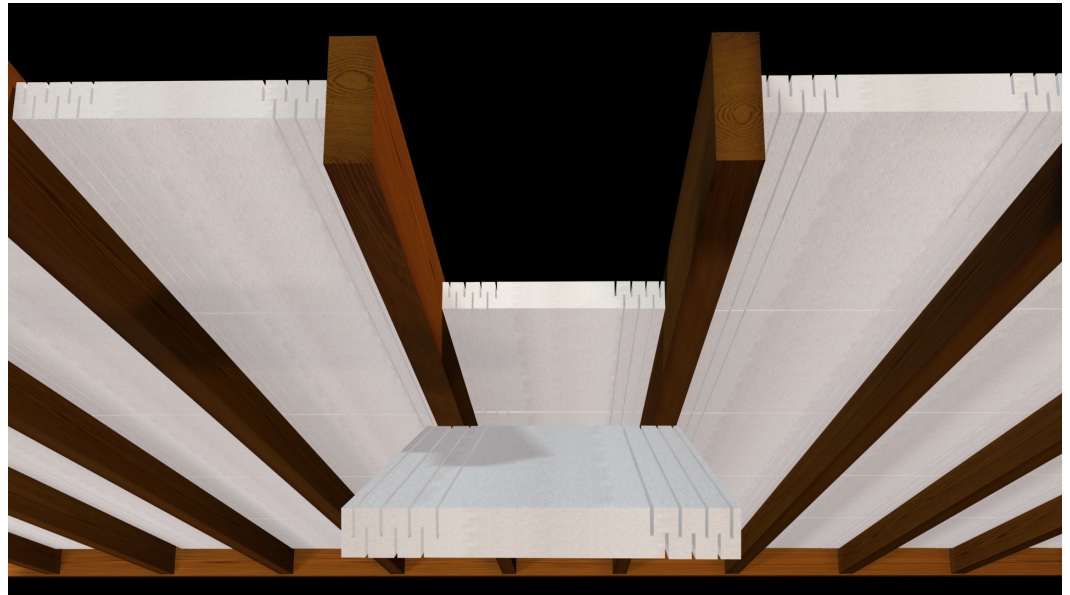
Appraisal No. 871 [2020]

EXPOL UNDERFLOOR INSULATION

Appraisal No. 871 [2020]

This Appraisal replaces Appraisal No. 871 [2014].

Amended 1 May 2020



BRANZ Appraisals

Technical Assessments of products for building and construction.



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Product

1.1 EXPOL Underfloor Insulation is an Expanded Polystyrene [EPS] foam board for use as thermal insulation for timber framed floors. The insulation is pre-cut to fit a range of floor joist spacings.

Scope

2.1 EXPOL Underfloor Insulation has been appraised as a thermal insulation material for timber framed floors in new and existing houses. In bushfire areas the provisions of BCA Volume 2 Part 3.10.5 must be complied with.

Building Regulations

National Construction Code Series [NCC 2019] Building Code of Australia [BCA]

3.1 In the opinion of BRANZ, EXPOL Underfloor 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 BCA:

BCA Volume 2 - Class 1 and Class 10 Buildings

Part 2.6 Energy Efficiency: Performance Requirement P2.6.1 EXPOL Underfloor Insulation will contribute to meeting this requirement.

Technical Specification

Description

4.1 EXPOL Underfloor Insulation is Expanded Polystyrene [EPS] foam boards with pre-cut concertina cuts to both edges. EXPOL Underfloor Insulation is available as set out in Table 1.

Table 1: EXPOL Underfloor Insulation product range.

R-value	Nominal Thickness (mm)	Width (mm)	Length (mm)	Pieces per Bag
R1.4	60	360	1200	12
R1.4	60	410	1200	11
R1.4	60	470	1200	10
R1.4	60	560	1200	9

4.2 EXPOL Underfloor Insulation is white in colour and is supplied in colour coded packaging to identify the different widths.



- 4.3 EXPOL Underfloor Insulation is manufactured from flame retardant bead to meet the manufacturing requirements of AS 1366.3.
- 4.4 Accessories used with EXPOL Underfloor insulation, which are supplied by the insulation installer, are nylon brackets and stainless steel nails as an optional method of fixings.

Handling and Storage

- 5.1 EXPOL Underfloor Insulation must be stored under cover and out of sunlight. Heavy objects must not be stacked on the packs.
- 5.2 EXPOL Underfloor Insulation is able to get wet before the installation process, but it is recommended that the product is dry during installation against the underfloor or before flooring is fitted.

Technical Literature

- 6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for EXPOL Underfloor 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 EXPOL Underfloor Insulation is intended for use as a thermal insulation to meet the energy efficiency requirements of the BCA. EXPOL Underfloor Insulation can be used to meet the Deemed-to-Satisfy provisions of the BCA. Product dimensions are given in Table 1.
- 7.2 EXPOL Underfloor Insulation is intended for use as thermal insulation to floors, compression fitted between floor joists with the option of being clipped in place with a bracket. The panels are supplied in widths to suit most installations.
- 7.3 EXPOL Underfloor insulation has an R-value of 1.4 m²C/W. EXPOL Underfloor Insulation can be used to meet the Deemed-to-Satisfy provisions of the BCA.
- 7.4 The building envelope must be constructed to ensure the insulation remains dry throughout the life of the building.
- 7.5 The clearance requirements for heating appliances and light fittings must be met and reference made to the manufacturer's instructions and AS 3999.
- 7.6 EXPOL Underfloor Insulation, when installed following the Technical Literature, is suitable for use in exposed under floors without a lining. Clips should be used in wind exposed situations.

Electrical Cables

- 7.7 PVC cables must be prevented from direct contact with EXPOL Underfloor Insulation. Refer to Paragraph 13.5

Durability

Serviceable Life

- 8.1 Where the building is maintained so that provisions of the Damp and Weatherproofing requirements of the BCA are met, and where the insulation is not crushed or exposed to conditions that will diminish its thermal performance, EXPOL Underfloor Insulation can expect to have a serviceable life of at least 50 years.
- 8.2 Expol nylon brackets must be used to achieve a 50 year serviceable life.
- 8.3 Nylon support brackets are required to support EXPOL Underfloor Insulation for underfloors that are subjected to wind exposure.



Maintenance

- 9.1 Insulation that has become damp must be removed and the cause of the dampness repaired. The insulation must be dry and the floor framing must be clean, dry and free from all contaminants and mould before refitting the insulation.
- 9.2 Regular inspections must be completed to insure that installation integrity is maintained and any dislodge panels are reinstalled.

Fire Safety

- 10.1 EXPOL Underfloor Insulation is classified as combustible and can only be used where combustible materials are permitted in accordance with BCA Volume 2.

Bushfire Areas

- 10.2 When EXPOL Underfloor Insulation is being considered in bushfire prone areas, the provisions of BCA Volume 2 Part 3.10.5 must be complied with.

Energy Efficiency

- 11.1 EXPOL Underfloor Insulation has a material R-value of R1.4 [single layer] and R2.8 [double layer] and contributes to the minimum total R-value requirement for suspended floors of the BCA Volume 2 Table 3.12.1.4.
- 11.2 A thermal calculation method that complies with the ABCB Protocol for House Energy Rating Software must be used.
- 11.3 For details of State and Territory Variations, refer to the BCA.

Installation Information

Installation Skill Level Requirements

- 12.1 Installation of EXPOL Underfloor Insulation must be completed by an installer with an understanding of insulation installation.

General

- 13.1 It is important to achieve a tight friction fit between the edge of the board and the joist. This is achieved by the compression of the pre-cut concertina cuts to the edges of the boards.
- 13.2 All gaps must be filled and a tight fit made at butt joints. Small gaps can be sealed with extra material, or a urethane foam.
- 13.3 Expol nylon brackets must be used, in line with the Technical Literature, to achieve a 50 year serviceable life.
- 13.4 EXPOL Underfloor Insulation must be separated from all sources of heat.
- 13.5 PVC cables must be prevented from direct contact with any EXPOL Underfloor Insulation. A physical separation must be provided by running cables around the insulation boards, or by wrapping the cables with separating material supplied by Expol Limited.

Inspections

- 13.6 The Technical Literature and this Appraisal must be referred to during the inspection of EXPOL Underfloor Insulation installations.

Health and Safety

- 14.1 AS 3999 gives guidance for 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

- 15.1 BRANZ has carried out thermal resistance testing of EXPOL Underfloor Insulation in accordance with ASTM C518 as part of the material test evaluation to AS/NZS 4859.1.

Other Investigations

- 16.1 An assessment of the durability of EXPOL Underfloor Insulation has been made by BRANZ technical experts.
- 16.2 The manufacturer's Technical Literature including Installation Instruction have been reviewed by BRANZ and found to be satisfactory.
- 16.3 Site inspections have been undertaken to assess installation methods and to examine completed installations.

Quality

- 17.1 The manufacture of EXPOL Underfloor Insulation has been examined by BRANZ, including methods adopted for quality control. Details of the manufacturing processes were obtained and found to be satisfactory.
- 17.2 Expol Limited is responsible for the quality of the product supplied.
- 17.3 Quality of installation of the product on site is the responsibility of the installer.
- 17.4 Maintenance of the building is the responsibility of the building owner.

Sources of Information

- AS 1366.3: 1992 Rigid cellular plastics sheets for thermal insulation - Rigid cellular polystyrene - Moulded.
- AS 3999: 1992 Thermal insulation of dwellings - Bulk Insulation - Installation requirements.
- AS/NZS 4859.1: 2018 Materials for the thermal insulation of buildings.
- National Construction Code Series, Building Code of Australia 2019, Australian Building Codes Board.

Amendments

Amendment No. 1, dated 1 May 2020.

This Appraisal has been amended to update the references to the Building Code of Australia from 2014 to 2019.



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28 February 2020

EXPOL UNDERFLOOR
INSULATION



In the opinion of BRANZ, **EXPOL Underfloor 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 **Expol 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. **Expol 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 **Expol 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 **Expol Limited** or any third party.

For BRANZ

Chelydra Percy

Chief Executive

Date of Issue:

28 February 2020