



BRANZ Appraised
Appraisal No. 1026 [2018]

FORMAN ROOFX THERMAL BREAK



Appraisal No. 1026 [2018]

Amended 2 October 2019.

BRANZ Appraisals

Technical Assessments of products for building and construction.



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Product

- 1.1 Forman RoofX is a non-structural roof thermal break manufactured from extruded foamed polystyrene.

Scope

- 2.1 Forman RoofX has been appraised for use as a non-structural thermal break for use with steel framed pitched roof construction on buildings within the following scope:
 - subject to specific design where a thermal break is required; and,
 - situated on top of purlins under long run metal roof cladding.

Building Regulations

New Zealand Building Code (NZBC)

- 3.1 **In the opinion of BRANZ, Forman RoofX 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 B1 STRUCTURE: Performance B1.3.1, B1.3.2 and B1.3.4. Forman RoofX meet the requirements for loads arising from gravity loads and impact (i.e. B1.3.3 [b] and [j]). See Paragraphs 8.1 - 8.3.

Clause B2 DURABILITY: Performance B2.3.1 [b], 15 years and B2.3.2. Forman RoofX meet these requirements. See Paragraphs 9.1 - 9.3.

Clause E3 INTERNAL MOISTURE: Performance E3.3.1. Forman RoofX will contribute to meeting this requirement.

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



Technical Specification

- 4.1 Forman RoofX is manufactured from extruded foamed polystyrene. The thermal breaks are grey or yellow in colour and are cut to a finished size the purlin width, plus 15 mm overhang either side, or as required. Forman RoofX is available in black in the following thicknesses 10 mm, 15 mm, 20 mm and 30 mm; and the Forman RoofX in yellow in the thickness of 30 mm.
- 4.2 Forman RoofX thermal resistance (R-value) has been determined by testing ASTM C518 (unaged). The R-values are:
 - 10 mm [black] R-value 0.31
 - 15 mm [black] R-value 0.46
 - 20 mm [black] R-value 0.61
 - 30 mm [black] R-value 0.92
 - 30 mm [yellow] R-value 0.84

Handling and Storage

- 5.1 Handling and storage of the Forman RoofX, whether on or off site, is under the control of the building contractor. The thermal breaks must be protected from direct sunlight and physical damage, and should be stored flat and under cover.

Technical Literature

- 6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for Forman RoofX. 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 Forman RoofX is intended for use as a thermal break to meet the requirements of NZBC. The 10mm Forman RoofX can be used to meet the minimum R-value required for thermal breaks of 0.25 m²°C/W. The other thicknesses will provide a better performance.
- 7.2 Forman RoofX is designed to create a thermal break between the steel frame and the cladding. The thermal break strips will prevent direct contact between the steel frame and the cladding ensuring the overall thermal performance of the system is not adversely affected by thermal bridging.
- 7.3 Forman RoofX is designed to be used with long run metal roof claddings to a specific design. Roof fixings must take into account the thickness of the thermal break strips for roof fixing penetration into the supporting structure.

Structure

- 8.1 Forman RoofX must be treated as non-structural thermal breaks only.

Impact Resistance

- 8.2 Forman RoofX have adequate resistance to impact loads likely to be encountered in normal residential and commercial use. The thermal breaks also have adequate resistance to compressive loads likely to be encountered during fixing of the cladding. They will withstand normal foot traffic and the function of the product will not be impaired by such traffic.

Durability

- 9.1 Forman RoofX meet the performance requirements of NZBC Clause B2.3.1 [b] 15 years provided the product is not exposed to weather or ultra-violet (UV) light for a total of more than 21 days.

Serviceable Life

- 9.2 Forman RoofX will have a durability equivalent to that of the roof cladding to meet code compliance with NZBC Clause B2.3.2 provided the cladding system is maintained in accordance with this Appraisal and the thermal breaks are continually protected from UV light.



Maintenance

- 10.1 No maintenance is required for Forman RoofX. Regular checks at least annually must be made of the roof cladding, flashings and penetrations to ensure that water will not penetrate the cladding.

Prevention of Fire Occuring

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

External Moisture

- 12.1 Forman RoofX must only be used under long run metal roof claddings that meet the requirements of NZBC, such as those covered by NZBC Acceptable Solutions E2/AS1.
- 12.2 The detailing of the roof cladding system including junctions is the responsibility of the building designer. These details have not been assessed as part of this Appraisal.

Internal Moisture

- 13.1 Forman RoofX has an R-value of 0.31 for the 10 mm thick product. Where a long run metal roof cladding manufacturer specifies a thermal break that complied with NZBC Acceptable Solution E3/AS1, Paragraph 1.1.1 [d] as part of their system, Forman RoofX may be used. Forman RoofX must be installed over the purlins to provide a thermal break.

Installation Information

Installation Skill Level Requirement

- 14.1 Installation must always be carried out in accordance with the Forman RoofX Technical Literature and this Appraisal by, or under the supervision of, a License Building Practitioner [LBP] with the relevant Licence Class.

System Installation

Roof Underlay Installation

- 15.1 The selected roof underlay must be installed in accordance with the underlay manufacturer's instruction prior to the installation of Forman RoofX.

Roof Cladding

- 15.2 Long run metal roof cladding, including flashings and stop ends to a specific design. Roof cladding fixing penetrations into supporting steel must be to specific design.

Thermal Breaks

- 15.3 The thermal breaks must be installed over the purlins. The Forman RoofX Thermal Breaks are tapped to the top of the purlins before the underlay and roof cladding. The roof fixing screws are then screwed through the thermal break, into the purlin. The thermal breaks must be installed in continuous lengths.

Inspections

- 15.4 The Technical Literature must be referred to during the inspection of Forman RoofX installations.

Health and Safety

- 16.1 There are no specific health and safety requirements for Forman RoofX, however safe use and handling procedures for the components that make up the cladding system must be followed in accordance with the requirements of the relevant manufacturer's Technical Literature.



Basis of Appraisal

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

Tests

17.1 The following testing has been completed by BRANZ:

- Forman RoofX were heat aged and compressed to assess the structural and durability performance.

Other Investigations

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

18.2 The practicability of installation of the Forman RoofX has been assessed by BRANZ and found to be satisfactory.

18.3 The Technical Literature, including installation instructions for the Forman RoofX have been examined by BRANZ and found to be satisfactory.

Quality

19.1 The manufacture of the Forman RoofX has not been examined by BRANZ, but details regarding the quality and composition of the materials used were obtained by BRANZ and found to be satisfactory

19.2 The quality of supply to the market is the responsibility of Forman Building Systems Limited.

19.3 Designers are responsible for the building design, and building contractors are responsible for the quality of installation of framing systems, building underlays, flashing tapes, airseals and cladding system in accordance with the instructions of the designer.

19.4 The quality of the installation, handling and storage on site of the Forman RoofX is the responsibility of the installer.

Sources of Information

- 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 - Acceptable Solutions, Verification Methods and Handbooks.
- NASH N11 House insulation guide, version 2.2.
- The Building Regulations 1992.

Amendments

Amendment No. 1, dated 2 October 2019

This Appraisal has been amended to include the yellow extruded foamed polystyrene thermal break in the thickness of 30 mm.



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25 October 2018

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In the opinion of BRANZ, **Forman RoofXThermal** 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 **Forman Building Systems 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. **Forman Building Systems 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 **Forman Building Systems 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 **Forman Building Systems Ltd** or any third party.

For BRANZ

Chelydra Percy

Chief Executive

Date of Issue:

25 October 2018