



BRANZ Appraised
Appraisal No. 1159 [2021]

FORMAN'S THERMAL BREAK SECTION FOR STEEL FRAMING

Appraisal No. 1159 [2021]



BRANZ Appraisals

Technical Assessments of
products for building and
construction.



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Product

- 1.1 Forman's Thermal Break Section for Steel Framing is a non-combustible thermal break for use on steel-framed walls. It is manufactured from rockwool.

Scope

- 2.1 Forman's Thermal Break Section for Steel Framing has been appraised for use as a non-combustible thermal break with steel-framed wall construction on buildings with the following scope:
 - the scope limitations of NZBC Acceptable Solution E2/AS4; or,
 - subject to specific design where the scope limitations of NZBC Acceptable Solution E2/AS4 are exceeded; and,
 - where Forman's Thermal Break Section for Steel Framing is installed between the steel framing and the wall underlay; and,
 - where the insulation fills the entire cavity.

Building Regulations

New Zealand Building Code (NZBC)

- 3.1 In the opinion of BRANZ, Forman's Thermal Break Section for Steel Framing, 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's Thermal Break Section for Steel Framing contributes to meeting 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 (a) not less than 50 years, B2.3.1 (b) 15 years and B2.3.2. Forman's Thermal Break Section for Steel Framing meets these requirements. See Paragraphs 9.1 and 9.2.

Clause E3 INTERNAL MOISTURE: Performance E3.3.1. Forman's Thermal Break Section for Steel Framing contributes to meeting this requirement.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Forman's Thermal Break Section for Steel Framing meets this requirement.



Technical Specification

- 4.1 System components and accessories supplied by Forman Building Systems Ltd are:
- **Forman's Thermal Break Section for Steel Framing** - manufactured from rock wool. The thermal breaks are cut to a finished size of 90 mm and 120 mm wide, and are 16 mm thick. The thermal breaks are coloured yellow and are supplied in 1,150 mm long lengths. The thermal resistance [R-value] of Forman's Thermal Break Section for Steel Framing has been determined by testing to ASTM C518. The 16 mm thick thermal break achieved an R-value of R0.25.
- 4.2 System components and accessories supplied by the building contractor are:
- **Temporary fixings** - 45 mm long 12 g countersunk screws or adhesive specified by Forman Building Systems Ltd shall be used to ensure that Forman's Thermal Break Section for Steel Framing remains in place prior to installation of the wall underlay and cladding,

Handling and Storage

- 5.1 Forman's Thermal Break Section for Steel Framing must be protected from direct sunlight, physical damage and weather. They must be stored vertically, under cover, in clean, dry conditions and must not be crushed or compressed.

Technical Literature

- 6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for Forman's Thermal Break Section for Steel Framing. 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's Thermal Break Section for Steel Framing is intended for use as a thermal break to meet the requirements of NZBC Acceptable Solution E2/AS4. Forman's Thermal Break Section for Steel Framing can be used to meet the minimum R-value required for thermal breaks of 0.25 m²C/W.
- 7.2 Forman's Thermal Break Section for Steel Framing is designed to create a thermal break between the steel frame and the wall underlay to ensure the overall thermal performance of the system is not adversely affected by thermal bridging.
- 7.3 Forman's Thermal Break Section for Steel Framing is designed to be used with wall claddings to a specific design. Wall fixings must take into account the thickness of the thermal break strips for wall fixing penetration into the supporting structure.

Structure

- 8.1 Forman's Thermal Break Section for Steel Framing is not intended to provide any structural contribution to the steel frame.
- 8.2 Fixings for the chosen cladding system should be extended by a length of 16 mm to ensure a similar wall fixing withdrawal strength is achieved compared to an installation without the thermal break.

Impact Resistance

- 8.3 Forman's Thermal Break Section for Steel Framing has 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.

Durability

- 9.1 Forman's Thermal Break Section for Steel Framing meets the performance requirements of NZBC Clause B2.3.1 (b) 15 years, provided the product is not exposed to weather and remains dry before and during the installation process and during its serviceable life.

Serviceable Life

- 9.2 Forman's Thermal Break Section for Steel Framing will have a durability equivalent to that of the wall cladding to meet code compliance with NZBC Clause B2.3.2 provided the cladding system is maintained and the thermal breaks are continually protected from ultraviolet (UV) light.

Maintenance

- 10.1 No maintenance is required for Forman's Thermal Break Section for Steel Framing. Regular checks, at least annually, must be made of the wall cladding, flashings and penetrations to ensure that water will not penetrate the cladding.

Prevention of Fire Occurring

- 11.1 Forman's Thermal Break Section for Steel Framing meets an A1 classification when tested against EN13501-1 and is therefore considered a non-combustible material. It does not need to be separated from heat sources such as fireplaces, flues and chimneys. However, when used in conjunction with or attached to heat sensitive materials, the heat sensitive material must be separated or protected from heat sources. Part 7 of NZBC Verification Method C/VM1 and Acceptable Solution C/AS1, and Acceptable Solution C/AS2 provide methods for separation and protection of combustible materials from heat sources.

Fire Affecting Areas Beyond the Fire Source

Control of Internal Fire and Smoke Spread

- 12.1 Forman's Thermal Break Section for Steel Framing has a Group Number of 1-S.

External Moisture

- 13.1 The detailing of the wall cladding system including junctions is the responsibility of the building designer. These details have not been assessed as part of this Appraisal.

Internal Moisture

- 14.1 Forman's Thermal Break Section for Steel Framing is compressible. The R-value was assessed at the determined minimum compressed thickness achieved in install. Forman's Thermal Break Section for Steel Framing has an R-value of 0.25 and meets the requirements of NZBC E3 for thermal breaks.
- 14.2 Forman's Thermal Break Section for Steel Framing shall not replace cavity battens where these are required.

Installation Information

Installation Skill Level Requirement

- 15.1 All design and building work must be carried out in accordance with the Forman's Thermal Break Section for Steel Framing Technical Literature and this Appraisal by competent and experienced tradespersons conversant with the Forman's Thermal Break Section for Steel Framing. 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.



System Installation

Thermal Breaks

- 16.1 Forman's Thermal Break Section for Steel Framing can be temporarily fixed to the framing using 45 mm long, 12 g countersunk screws or the adhesive specified by Forman Building Systems Ltd. Forman's Thermal Break Section for Steel Framing shall be permanently fixed when the fasteners of the cladding system penetrate through the Forman's Thermal Break Section for Steel Framing into the steel framing.
- 16.2 Thermal break strips shall be no less than the width of the steel framing material they are covering, and be applied to all steel framing members including nogs, braces, lintels and joists.
- 16.3 All thermal breaks shall extend 15 mm minimum above the top plate and below the bottom plates and include the areas in soffits that may not have a cladding attached.

Wall Underlay Installation

- 16.4 The selected wall underlay must be installed in accordance with the underlay manufacturer's instruction, after the installation of Forman's Thermal Break Section for Steel Framing.

Wall Cladding

- 16.5 Fixings specified for a wall cladding must be at least 16 mm longer to ensure a similar wall fixing withdrawal strength is achieved compared to an installation without the thermal break.

Inspections

- 16.6 The Technical Literature must be referred to during the inspection of Forman's Thermal Break Section for Steel Framing.

Health and Safety

- 17.1 When handling and cutting Forman's Thermal Break Section for Steel Framing, personal protective equipment such as a mask and gloves shall be worn.

Basis of Appraisal

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

Tests

- 18.1 The following testing has been completed by BRANZ:
 - BRANZ has carried out thermal resistance testing of the Forman's Thermal Break Section for Steel Framing in accordance with ASTM C518, based on the thickness the product achieves when installed.

Other Investigations

- 19.1 An assessment of the durability of Forman's Thermal Break Section for Steel Framing has been made by BRANZ technical experts.
- 19.2 The practicability of installation of Forman's Thermal Break Section for Steel Framing has been assessed by BRANZ and found to be satisfactory.
- 19.3 The Technical Literature, including installation instructions for the Forman's Thermal Break Section for Steel Framing has been examined by BRANZ and found to be satisfactory.



Quality

- 20.1 The manufacture of Forman's Thermal Break Section for Steel Framing 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.
- 20.2 The quality of supply to the market is the responsibility of Forman Building Systems Ltd.
- 20.3 Designers are responsible for the building design, and building contractors are responsible for the quality of the installation of framing systems, building underlays, flashing tapes, air seals and cladding system in accordance with the instructions of the designer.
- 20.4 The quality of the installation, handling and storage on-site of the Forman's Thermal Break Section for Steel Framing is the responsibility of the installer.

Sources of Information

- ASTM C518-04 Standard Test Method For Steady-State Thermal Transmission Properties By Means Of The Heat Flow Meter Apparatus
- EN13501-1: 2018 Fire classification of construction products and building elements. Classification using data from reaction to fire tests.
- Ministry of Business, Innovation and Employment Record of amendments - Acceptable Solutions, Verification Methods and handbooks.
- The Building Regulations 1992.



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FORMAN'S THERMAL BREAK
SECTION FOR STEEL FRAMING



In the opinion of BRANZ, **Forman's Thermal Break Section for Steel Framing** 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 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. **Forman Building Systems 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 **Forman Building Systems 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 **Forman Building Systems Ltd** or any third party.

For BRANZ

Chelydra Percy

Chief Executive

Date of Issue:

03 June 2021