



**BRANZ Appraised**  
Appraisal No. 942 [2017]

## MULTI-FIT PENETRATION SEALS



**Appraisal No. 942 [2017]**

### BRANZ Appraisals

Technical Assessments of  
products for building and  
construction.



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## Product

- 1.1 Multi-Fit Penetration Seals are a range of pipe and service penetration seals consisting of a soft, flexible EPDM membrane with a self-adhesive flange.

## Scope

- 2.1 Multi-Fit Penetration Seals have been appraised for use as pipe and service penetration seals for use where the penetration penetrates the wall underlay on timber and steel framed buildings within the following scope:
  - the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1 with regards to building height and floor plan area; and,
  - with stand-alone flexible wall underlays covered by a valid BRANZ Appraisal; or,
  - with flexible wall underlays covered by a valid BRANZ Appraisal for use over rigid wall underlays; or,
  - with proprietary plywood or fibre cement based rigid wall underlays covered by a valid BRANZ Appraisal; and,
  - situated in NZS 3604 Wind Zones up to, and including Very High where stand-alone flexible wall underlays are used; or,
  - situated in NZS 3604 Wind Zones up to, and including Extra High where flexible wall underlays are used over rigid wall underlays, or proprietary rigid wall underlays are used.
- 2.2 Multi-Fit Penetration Seals have also been appraised for use on buildings subject to specific weathertightness design. Building designers are responsible for the building design and for the incorporation of Multi-Fit Penetration Seals into their design in accordance with the declared properties and the instructions of Thermakraft Limited.

## Building Regulations

### New Zealand Building Code (NZBC)

3.1 In the opinion of BRANZ, Multi-Fit Penetration Seals, 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 B2 DURABILITY:** Performance B2.3.1 [b], 15 years and B2.3.2. Multi-Fit Penetration Seals meet these requirements. See Paragraphs 8.1 and 8.2.

**Clause E2 EXTERNAL MOISTURE:** Performance E2.3.2. When used as part of the wall cladding system, Multi-Fit Penetration Seals will contribute to meeting this requirement. See Paragraphs 7.1 - 7.4 and 11.1.

**Clause F2 HAZARDOUS BUILDING MATERIALS:** Performance F2.3.1. Multi-Fit Penetration Seals meet this requirement and will not present a health hazard to people.

## Technical Specification

4.1 Multi-Fit Penetration Seals are manufactured with a black, soft and flexible 1.2 mm thick EPDM fabric supplied with pre-punched markings. The perimeter of the seal is coated with an acrylic adhesive, which is bonded to the wall underlay. Multi-Fit Penetration Seals are available in the sizes shown in Tables 1 and 2.

**Table 1: Thermakraft Cable Seals**

Marking Size Guide	
1	55 mm Ø fits an 80 mm Ø electrical box
2	4 x 3 mm Ø fits 7 mm Ø to 10 mm Ø
3	2 x 7 mm Ø fits 10 mm Ø to 22 mm Ø

**Table 2: Thermakraft Pipe Seals**

Marking Size Guide	
1	12 mm Ø fits round pipes from 15 mm Ø to 25 mm Ø
2	25 mm Ø fits round pipes from 40 mm Ø to 60 mm Ø
3	45 mm Ø fits round pipes from 60 mm Ø to 90 mm Ø
4	70 mm Ø fits round pipes from 90 mm Ø to 110 mm Ø

## Handling and Storage

5.1 Multi-Fit Penetration Seals must be protected from damage and weather. They must be stored under cover in clean, dry conditions away from direct exposure to sunlight, heat or flame. Multi-Fit Penetration Seals should not be removed from the packaging until they are ready to use.

5.2 Handling and storage of Multi-Fit Penetration Seals, whether on-site or off-site, is the responsibility of the installer.

## Technical Literature

6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for Multi-Fit Penetration Seals. The Technical Literature must be read in conjunction with this Appraisal. All aspects of design, use, installation and maintenance contained within the scope of this Appraisal and the Technical Literature must be followed.

## Design Information

### General

- 7.1 Multi-Fit Penetration Seals must not be exposed to the weather or ultra-violet light for longer than the exposure period stated in the relevant wall underlay Appraisal. A maximum of 90-days exposure applies to the Multi-Fit Penetration Seals.
- 7.2 Multi-Fit Penetration Seals when used with flexible and rigid wall underlays, provide an Alternative Solution to the pipe and service penetration detailing specified in NZBC Acceptable Solution E2/AS1, Paragraph 9.1.9.3 and Figure 68.
- 7.3 Multi-Fit Penetration Seals are primarily designed to prevent moisture ingress at pipe and cable penetrations through walls. The performance of Multi-Fit Penetration Seals relies on the correct size being selected for the pipe or cable penetration being sealed, and the seal being fully adhered to the wall underlay.
- 7.4 Where a proprietary cladding system is used, all weatherproofing details for the cladding system around the penetration must be carried out in accordance with the systems Technical Literature. Installation details which are outside the scope of the cladding system are the responsibility of the designer for compliance with the NZBC.

### Durability

- 8.1 Assessment of durability to meet the NZBC is based on the difficulty of access and replacement, and the ability to detect failure of the Multi-Fit Penetration Seals during both normal use and maintenance of the building.

### Serviceable Life

- 8.2 Provided the selected flexible or rigid wall underlay is not exposed to the weather or ultra-violet light for longer than stated in the relevant Appraisal, [a maximum of 90 days applies to the Multi-Fit Penetration Seals], and provided the exterior cladding is maintained in accordance with the cladding manufacturer's instructions and the cladding remains weather resistant, Multi-Fit Penetration Seals are expected to have a serviceable life equal to that of the cladding.

### Maintenance

- 9.1 No maintenance is required for Multi-Fit Penetration Seals, however regular checks must be made of the cladding system to ensure it is sound and will not allow moisture penetration.

### Prevention of Fire Occurring

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

### External Moisture

- 11.1 Multi-Fit Penetration Seals provide suitable flashing and sealing around pipe and cable penetrations when used in conjunction with BRANZ Appraised wall underlays, and will contribute to the wall cladding meeting code compliance with NZBC Clause E2.3.2.

## Installation Information

### Installation Skill Level Requirements

- 12.1 Installation must always be carried out in accordance with the Multi-Fit Penetration Seals Technical Literature and this Appraisal by, or under the supervision of, a Licensed Building Practitioner (LBP) with the relevant Licence Class.

### General

- 13.1 The Multi-Fit Penetration Seal must create a tight seal around the pipe or cable penetration. The appropriate Multi-Fit Penetration Seal must be used based on the diameter of the pipe or cable penetration.
- 13.2 The flexible and rigid wall underlays must be clean, dust free and dry prior to adhering the Multi-Fit Penetration Seal.
- 13.3 The Multi-Fit Penetration Seal must be installed in a diamond pattern, which will assist with moisture run-off.
- 13.4 If the Multi-Fit Penetration Seal is exposed to the weather or UV light for more than 90 days, then it must be replaced with a new seal.

### Installation Temperature

- 13.5 Multi-Fit Penetration Seals must not be installed at temperatures of less than -10°C. Multi-Fit Penetration Seals can withstand temperatures of -40°C to +80°C in service.

### Inspections

- 14.1 The Technical Literature must be referred to during the inspection of Multi-Fit Penetration Seal installations.

## Basis of Appraisal

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

### Tests

- 15.1 Testing after various forms of accelerated aging has confirmed the adhesion of Multi-Fit Penetration Seals to a range of flexible and rigid wall underlays. The results have been reviewed by BRANZ experts and found to be satisfactory.

### Other Investigations

- 16.1 Assessment of the composition of the materials used to make Multi-Fit Penetration Seals has been completed and a durability opinion has been provided by BRANZ experts.
- 16.2 The practicability of installation was assessed by BRANZ and found to be satisfactory.
- 16.3 The Technical Literature has been reviewed by BRANZ and found to be satisfactory.

### Quality

- 17.1 The manufacture of Multi-Fit Penetration Seals has not been examined by BRANZ but details of the quality and composition of the materials used were obtained and found to be satisfactory. BRANZ undertakes an ongoing review of product quality on an inwards goods basis.
- 17.2 The quality of supply to the market is the responsibility of Thermakraft Limited.
- 17.3 The quality of installation on site is the responsibility of the installer.
- 17.4 Designers are responsible for the building design, and building contractors are responsible for the quality of the installation of the framing system, the wall underlay and cladding system.
- 17.5 Building owners are responsible for the maintenance of the cladding system over the Multi-Fit Penetration Seals.

### Sources of Information

- NZS 3604: 2011 Timber-framed buildings.
- Acceptable Solutions and Verification Methods for New Zealand Building Code External Moisture Clause E2, Department of Building and Housing, Third Edition July 2005 (including Amendment 7, 01 January 2017).
- Ministry of Business, Innovation and Employment Record of Amendments for Compliance Documents and Handbooks.
- The Building Regulations 1992.



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29 May 2017

MULTI-FIT PENETRATION SEALS



In the opinion of BRANZ, **Multi-Fit Penetration Seals** are fit for purpose and will comply with the Building Code to the extent specified in this Appraisal provided they are used, designed, installed and maintained as set out in this Appraisal.

The Appraisal is issued only to **Thermakraft 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. **Thermakraft 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 **Thermakraft 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 **Thermakraft Limited** or any third party.

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For BRANZ

**Chelydra Percy**

Chief Executive

Date of Issue:

29 May 2017