



BRANZ Appraised
Appraisal No. 942 [2022]

ONESEAL™ MULTI-FIT PIPE AND CABLE PENETRATION SEALS

Appraisal No. 942 [2022]

This Appraisal replaces BRANZ Appraisal No. 942 [2017]



BRANZ Appraisals

Technical Assessments of products for building and construction.



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Product

- 1.1 OneSeal™ Multi-fit Pipe and Cable 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 OneSeal™ Multi-fit Pipe and Cable Penetration Seals have been appraised for use as pipe and service penetration seals for use where the penetration passes through the wall underlay on framed buildings within the following scope:
 - the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1 for timber-framed buildings; or
 - the scope limitations of NASH Building Envelope Solutions, Paragraph 1.1 for steel-framed buildings; and,
 - with a risk score of 0-20, calculated in accordance with NZBC Acceptable Solution E2/AS1 or NASH Building Envelope Solutions, Table 2; and,
 - with flexible and rigid wall underlays compatible with the seals and complying with the NZBC; and,
 - situated in NZS 3604 and NASH Standard Part Two Wind Zones up to, and including, Extra High.
- 2.2 OneSeal™ Multi-fit Pipe and Cable 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 OneSeal™ Multi-fit Pipe and Cable 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, OneSeal™ Multi-fit Pipe and Cable 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. OneSeal™ Multi-fit Pipe and Cable 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, OneSeal™ Multi-fit Pipe and Cable Penetration Seals contribute to meeting this requirement. See Paragraphs 7.1-7.4 and 11.1.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. OneSeal™ Multi-fit Pipe and Cable Penetration Seals meet this requirement.

Technical Specification

4.1 OneSeal™ Multi-fit Pipe and Cable 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. OneSeal™ Multi-fit Pipe and Cable Penetration Seals are available in the sizes below.

OneSeal™ Multi-Fit Cable Seals:

- 55-80 mm diameter
- 4 x 7-10 mm diameter
- 2 x 10-22 mm diameter

OneSeal™ Multi-Fit Pipe Seals:

- 15-25 mm diameter
- 40-60 mm diameter
- 60-90 mm diameter
- 90-110 mm diameter

Handling and Storage

- 5.1 OneSeal™ Multi-fit Pipe and Cable 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. OneSeal™ Multi-fit Pipe and Cable Penetration Seals should not be removed from the packaging until they are ready to use.
- 5.2 Handling and storage of OneSeal™ Multi-fit Pipe and Cable 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 OneSeal™ Multi-fit Pipe and Cable 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 OneSeal™ Multi-fit Pipe and Cable Penetration Seals must not be exposed to the weather or ultraviolet (UV) light for a total of more than 90 days. The maximum exposure period of OneSeal™ Multi-fit Pipe and Cable Penetration Seals may be limited by the maximum exposure period of the wall underlay. *[Note: OneSeal™ Multi-fit Pipe and Cable Penetration Seals have also been appraised for a maximum 180 days exposure when used on James Hardie Rigid Air Barriers. Refer to BRANZ Appraisal No. 611. The long-term adhesion of the seals to other rigid wall underlays has not been assessed by BRANZ and is therefore outside the scope of this Appraisal.]*
- 7.2 OneSeal™ Multi-fit Pipe and Cable 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 OneSeal™ Multi-fit Pipe and Cable Penetration Seals are primarily designed to prevent moisture ingress at pipe and cable penetrations through walls. The performance of OneSeal™ Multi-fit Pipe and Cable 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 OneSeal™ Multi-fit Pipe and Cable Penetration Seals during both normal use and maintenance of the building.

Serviceable Life

- 8.2 OneSeal™ Multi-fit Pipe and Cable Penetration Seals are expected to have a serviceable life equal to that of the cladding provided:
- the selected flexible or rigid wall underlay is not exposed to the weather or UV light for longer than stated in the relevant Appraisal, and,
 - OneSeal™ Multi-fit Pipe and Cable Penetration Seals are not exposed for longer than specified in Paragraph 7.1, and,
 - the exterior cladding is maintained in accordance with the cladding manufacturer's instructions and the cladding remains weather-resistant.

Maintenance

- 9.1 No maintenance is required for OneSeal™ Multi-fit Pipe and Cable 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 OneSeal™ Multi-fit Pipe and Cable Penetration Seals from heat sources such as fireplaces, heating appliances and chimneys. Part 7 of NZBC Verification Method C/VM1 and Acceptable Solution C/AS1, and NZBC Acceptable Solution C/AS2 provide methods for separation and protection of combustible materials from heat sources.

External Moisture

- 11.1 OneSeal™ Multi-fit Pipe and Cable 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 Requirement

- 12.1 All design and building work must be carried out in accordance with the OneSeal™ Multi-fit Pipe and Cable Penetration Seals Technical Literature and this Appraisal by competent and experienced tradespersons conversant with penetration seals. 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.

General

- 13.1 OneSeal™ Multi-fit Pipe and Cable Penetration Seals must create a tight seal around the pipe or cable penetration. The appropriate OneSeal™ Multi-fit Pipe and Cable Penetration Seals 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 OneSeal™ Multi-fit Pipe and Cable Penetration Seals.
- 13.3 OneSeal™ Multi-fit Pipe and Cable Penetration Seals must be installed in a diamond pattern, which will assist with moisture run-off.
- 13.4 If a OneSeal™ Multi-fit Pipe and Cable Penetration Seal is exposed to the weather or UV light for longer than specified in Paragraph 7.1, then it must be replaced with a new seal.

Installation Temperature

- 13.5 OneSeal™ Multi-fit Pipe and Cable Penetration Seals must not be installed at temperatures of less than -10°C. OneSeal™ Multi-fit Pipe and Cable 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 OneSeal™ Multi-fit Pipe and Cable Penetration Seals 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 OneSeal™ Multi-fit Pipe and Cable 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 OneSeal™ Multi-fit Pipe and Cable 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 OneSeal™ Multi-fit Pipe and Cable 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 OneSeal™ Multi-fit Pipe and Cable Penetration Seals.

Sources of Information

- NASH Building Envelope Solutions: 2019.
- NASH Standard Part Two: 2019 Light steel-framed buildings.
- NZS 3604:2011 Timber-framed buildings.
- Ministry of Business, Innovation and Employment Record of amendments - Acceptable Solutions, Verification Methods and handbooks.
- The Building Regulations 1992.



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02 May 2022

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CABLE PENETRATION SEALS



In the opinion of BRANZ, **OneSeal™ Multi-fit Pipe and Cable 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.

For BRANZ

Chelydra Percy

Chief Executive

Date of Issue:

02 May 2022