



## BRANZ Appraised

Appraisal No. 1263 [2024]

## BAYONET BAYOWRAP ROOF 02 UNDERLAY



# ROOF 02 UNDERLAY

Appraisal No. 1263 [2024]

### BRANZ Appraisals

Technical Assessments of  
products for building and  
construction.



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## Product

- 1.1 Bayonet BayoWrap Roof 02 Underlay is a synthetic building underlay for use under roof claddings. The product consists of a micro-porous water-resistant film laminated between two layers of non-woven spun-bonded polyolefin.

## Scope

- 2.1 Bayonet BayoWrap Roof 02 Underlay has been appraised for use as a self-supporting roof underlay on 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 masonry tile roof cladding; and,
  - with metal tile roof cladding; and,
  - with profiled metal roof cladding; and,
  - situated in NZS 3604 and NASH Standard Part 2 Wind Zones up to, and including, Extra High.

## Specific Design

- 2.2 Bayonet BayoWrap Roof 02 Underlay has 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 Bayonet BayoWrap Roof 02 Underlay into their design in accordance with the declared properties and the instructions of Bayonet.



## Building Regulations

### New Zealand Building Code (NZBC)

3.1 In the opinion of BRANZ, Bayonet BayoWrap Roof 02 Underlay, if used, designed, 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 (a) not less than 50 years, B2.3.1 (b) 15 years and B2.3.2. Bayonet BayoWrap Roof 02 Underlay meets these requirements. See Paragraphs 9.1 and 9.2.

**Clause E2 EXTERNAL MOISTURE:** Performance E2.3.2. When used as part of the roof cladding system, Bayonet BayoWrap Roof 02 Underlay will contribute to meeting this requirement. See Paragraphs 12.1 and 12.2.

**Clause F2 HAZARDOUS BUILDING MATERIALS:** Performance F2.3.1. Bayonet BayoWrap Roof 02 Underlay meets this requirement.

## Technical Specification

4.1 Bayonet BayoWrap Roof 02 Underlay is a synthetic building underlay for use under roof claddings. The product consists of a micro-porous water-resistant film laminated between two layers of non-woven spun-bonded polyolefin. The product is coloured beige on the top face and black on the bottom face.

4.2 Bayonet BayoWrap Roof 02 Underlay is supplied in rolls 1.25 m wide x 40 m long and 1.5 m wide x 34 m long.

### Accessories

4.3 Accessories used with Bayonet BayoWrap Roof 02 Underlay, which are supplied by the installer are:

- **Fixings** - stainless steel staples, clouts, screws or proprietary underlay fixings, or other temporary fixings to attach the roof underlay to the framing.
- **Thermal break sheathing (steel framing)** - in accordance with NASH Building Envelope Solutions, Paragraph 11.4.3.2.

## Handling and Storage

5.1 Handling and storage of the product, whether on-site or off-site, is under the control of the installer. The rolls must be protected from damage and weather. They must be stored on end, under cover, in clean, dry conditions and must not be crushed.

## Technical Literature

6.1 This Appraisal must be read in conjunction with:

- Bayonet BayoWrap Roof 02 Underlay Product Technical Statement & Installation Guide, Version 4, issued April 2024.

6.2 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 Bayonet BayoWrap Roof 02 Underlay is intended for use as an alternative to conventional kraft paper roof underlays, which are fixed over timber or steel-framed roofs in order to limit the entry of wind into the roof cavity, and to assist in the moisture management of the roof cladding system.

- 7.2 The material also provides a degree of temporary weather protection during early construction. However, the product will not make the roof weathertight and some wetting of the underlying structure is always possible before the roof cladding is installed. Hence, the entire building must be closed-in and made weatherproof before moisture sensitive materials such as ceiling linings and insulation materials are installed.
- 7.3 Bayonet BayoWrap Roof 02 Underlay must not be exposed to the weather or ultraviolet (UV) light for a total of more than 42 days before being covered by the roof cladding.
- 7.4 Bayonet BayoWrap Roof 02 Underlay is suitable for use under roof claddings on buildings as a roof underlay in accordance with NZBC Acceptable Solution E2/AS1, Table 23. Refer to Table 1 for the material properties of the Bayonet BayoWrap Roof 02 Underlay.
- 7.5 Bayonet BayoWrap Roof 02 Underlay must not be laid under translucent sheeting.

**Table 1: NZBC E2/AS1, Table 23 Requirements**

NZBC E2/AS1, Table 23 Roof Underlays Properties	Property Performance Requirement	Results
Absorbency	$\geq 150 \text{ g/m}^2$	Pass
Vapour Resistance	$\leq 7 \text{ MN s/g}$	Pass
Water Resistance	$\geq 100 \text{ mm}$	Pass
pH of Extract	$\geq 5.5$ and $\leq 8$	Pass
Shrinkage	$\leq 0.5\%$	Pass
Mechanical	Edge tear and tensile strength	<p><b>Edge tear [Average]:</b> Machine direction = 150 N Cross direction = 100 N</p> <p><b>Tensile strength [Average]:</b> Machine direction = 5 kN/m Cross direction = 3.6 kN/m</p>

**Support Requirements**

- 7.6 Bayonet BayoWrap Roof 02 Underlay is suitable for use at roof pitches 3° and above. When used at pitches less than 10°, Bayonet BayoWrap Roof 02 Underlay can be installed horizontally or vertically when fully supported by a corrosion resistant roof underlay support.
- 7.7 At roof pitches 10° and greater, Bayonet BayoWrap Roof 02 Underlay can be installed vertically or horizontally, spanning no greater than 1,200 mm between supports.
- 7.8 Refer to Table 2 for a summary of the roof underlay support requirements.

**Table 2: Roof Underlay Support Requirements**

Roof Pitch	Span	Roof Underlay Support Required?	
		Horizontally Installed	Vertically Installed
10° or more	Greater than 1,200 mm	Yes	Yes
	1,200 mm or less	No	No
Less than 10° (minimum 3°)	Greater than 1,200 mm	Yes	Yes
	1,200 mm or less	No	Yes

**Structure**

- 8.1 Bayonet BayoWrap Roof 02 Underlay is suitable for use in all Wind Zones of NZS 3604 up to, and including, Extra High.

### Durability

- 9.1 Bayonet BayoWrap Roof 02 Underlay meets code compliance with NZBC Clause B2.3.1 [a] not less than 50 years for roof underlays used where the roof cladding durability requirement or expected serviceable life is not less than 50 years, e.g. behind masonry roof tile cladding. Bayonet BayoWrap Roof 02 Underlay meets code compliance with NZBC Clause B2.3.1 [b] 15 years for roof underlays used where the roof cladding durability requirement is 15 years.

### Serviceable Life

- 9.2 Provided it is not exposed to the weather or UV light for a total of more than 42 days, and provided the roof cladding is maintained in accordance with the cladding manufacturer's instructions and the roof cladding remains weather-resistant, Bayonet BayoWrap Roof 02 Underlay is expected to have a serviceable life equal to that of the roof cladding.

### Control of Internal Fire and Smoke Spread

- 10.1 Bayonet BayoWrap Roof 02 Underlay has an AS 1530 Part 2 flammability index of greater than 5. For Risk Groups other than SH, Bayonet BayoWrap Roof 02 Underlay must be enclosed by a suitable internal lining in occupied spaces (not exposed to view).

### Prevention of Fire Occurring

- 11.1 Separation or protection must be provided to Bayonet BayoWrap Roof 02 Underlay from heat sources such as fireplaces, heating appliances, flues and chimneys. Part 7 of NZBC Acceptable Solution C/AS1 and NZBC Acceptable Solution C/AS2 provide methods for separation and protection of combustible materials from heat sources.

### External Moisture

- 12.1 Bayonet BayoWrap Roof 02 Underlay must only be used under roof claddings that meet the requirements of the NZBC, such as those covered by NZBC Acceptable Solution E2/AS1, or roof claddings covered by a valid BRANZ Appraisal.
- 12.2 Bayonet BayoWrap Roof 02 Underlay, when installed in accordance with the Technical Literature and this Appraisal, will assist in the total cladding system's compliance with NZBC Clause E2.

## Installation Information

### Installation Skill Level Requirement

- 13.1 All design and building work must be carried out in accordance with the Bayonet BayoWrap Roof 02 Underlay Technical Literature and this Appraisal by competent and experienced tradespersons conversant with Bayonet BayoWrap Roof 02 Underlay. 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.

### Underlay Installation

- 14.1 Bayonet BayoWrap Roof 02 Underlay must be fixed at maximum 300 mm centres to all framing members with large-head clouts 20 mm long, 6-8 mm stainless steel staples, self-drilling screws or proprietary underlay fixings. The membrane must be pulled taut over the framing before fixing.
- 14.2 Bayonet BayoWrap Roof 02 Underlay may be installed horizontally or vertically. Refer to Table 2 for a summary of roof underlay support requirements. The roof underlay must extend from the ridge and overhang the fascia board by 20-25 mm.
- 14.3 Vertical laps must be no less than 150 mm wide. Horizontal laps must also be no less than 150 mm, with the direction of the lap ensuring that water is shed to the outer face of the underlay. End laps must be made over framing and be no less than 150 mm wide.
- 14.4 When fixing the product in windy conditions, care must be taken due to the large sail area created.
- 14.5 Any damaged areas of Bayonet BayoWrap Roof 02 Underlay, such as tears, holes or gaps around service penetrations, must be repaired. Damaged areas can be repaired by covering with new material lapping the damaged area by at least 150 mm and taping, or by taping small tears.



### Inspections

- 14.6 The Technical Literature must be referred to during the inspection of Bayonet BayoWrap Roof 02 Underlay installations.

## Basis of Appraisal

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

### Tests

- 15.1 The following tests have been carried out on Bayonet BayoWrap Roof 02 Underlay in accordance with NZS 2295: tensile strength, edge-tear resistance, resistance to water vapour transmission, shrinkage, resistance to water penetration, surface water absorbency and pH of extract. A range of these tests were completed before and after the underlay was exposed to UV light.

### Other Investigations

- 16.1 A durability opinion has been given by BRANZ technical experts.
- 16.2 An evaluation of the expected performance of Bayonet BayoWrap Roof 02 Underlay in direct contact with metal roof cladding has been completed by BRANZ.
- 16.3 The practicability of installation of Bayonet BayoWrap Roof 02 Underlay has been assessed by BRANZ and found to be satisfactory.
- 16.4 The Technical Literature, including installation instructions, has been examined by BRANZ and found to be satisfactory.

### Quality

- 17.1 The manufacture of Bayonet BayoWrap Roof 02 Underlay has not been examined by BRANZ, but details of the methods adopted for quality control and the quality of the materials used, have been obtained and found to be satisfactory.
- 17.2 The quality of supply to the market is the responsibility of J & F Holdings NZ Limited T/A Bayonet.
- 17.3 Building designers are responsible for the design of the building, and for the incorporation of the roof underlay into their design in accordance with the instructions of J & F Holdings NZ Limited T/A Bayonet.
- 17.4 Quality of installation is the responsibility of the installer in accordance with the instructions of J & F Holdings NZ Limited T/A Bayonet.

## Sources of Information

- NASH Building Envelope Solutions: 2019 Light steel-framed buildings.
- NASH Standard Part Two: 2019 Light steel-framed buildings.
- NZS 2295:2006 Pliable, permeable building underlays.
- 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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30 April 2024

BAYONET BAYOWRAP  
ROOF 02 UNDERLAY



In the opinion of BRANZ, **Bayonet BayoWrap Roof 02 Underlay** 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 **J & F Holdings NZ Limited T/A Bayonet**, 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. **J & F Holdings NZ Limited T/A Bayonet:**
  - 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 quality of work;
  - 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 **J & F Holdings NZ Limited T/A Bayonet**.
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 **J & F Holdings NZ Limited T/A Bayonet** or any third party.

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For BRANZ

**Claire Falck**  
Chief Executive  
Date of Issue:  
30 April 2024