



BRANZ Appraised

Appraisal No. 971 [2019]

EAVES WATER SYSTEM



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BRANZ Appraisals

Technical Assessments of products for building and construction.



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Product

- 1.1 Eaves Water System is a rain water gutter system comprising a roll-formed steel gutter with an integral leaf-excluding hood. The system includes ancillary fittings such as outlets, end caps, internal and external corners and fixing brackets.

Scope

- 2.1 Eaves Water System is appraised for use on domestic and commercial buildings within the following scope:
 - as a rain water management system for the collection and disposal of rain water from flat and pitched roofs; and
 - for use on buildings designed and constructed to meet the requirements of the NZBC; and
 - installed on buildings situated in NZS 3604 Wind Zones up to and including Extra High.
- 2.2 The Eaves Water System must be installed by Eaves Manufacturing NZ Limited trained and approved installers.

Building Regulations

New Zealand Building Code (NZBC)

- 3.1 In the opinion of BRANZ, Eaves Water System 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 [c], 5 years. Eaves Water System meets this requirement. See Paragraph 9.1.

Clause E1 SURFACE WATER: Performance E1.3.3 [a], [b] and [d]. Eaves Water System meets these requirements. See Paragraph 11.1.

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

Technical Specification

4.1 System components and accessories supplied by Eaves Manufacturing NZ Limited are as follows:

Gutter

- A one-piece roll-formed pre-finished coil-coated steel gutter manufactured from 0.55 mm thick Colorsteel® Maxx®. The gutter profile is available in the Coloursteel® Maxx® range of colours. The overall height of the gutter is 135 mm and the overall width is 175 mm.

Accessories

The following accessories are manufactured from grey ASA (Acrylonitrile Styrene Acrylate) plastic to suit the gutter profile. They are painted to typically colour-match the gutter profile but contrasting colours can be used where desired.

- **End Closer** – left and right hand options available.
- **90° Internal Corner** – with three removable stainless-steel mesh inlets.
- **90° External Corner** – with a single removable cleaning port.
- **Straight connector** – to connect long runs of gutter.
- **Outlet** – to suit 80 mm diameter downpipe and incorporates a single removable cleaning port.
- **Two Part Mounting Bracket** – Front bracket. Connects to Fascia Bracket.
- **Packers** – 5 mm and 15 mm thick packers for uneven fascia.

Brackets and Fixings

- **Two Part Mounting Bracket** – Fascia Bracket. 20 mm wide x 3 mm thick folded aluminium bracket.
- **Bracket fixings** – 12 g x 30 mm, galvanised steel screws.
- **Rivets** – pre-painted steel rivets 3/16 diameter.
- **Inlet to Downpipe Fixings** – slots over dropper and is screwed with 12 g screws.
- **Sealant** – Konnect Roof and Gutter Silicone [transparent] for sealing plastic connections to gutter.

4.2 Accessories used with the Eaves Water System and supplied by the building contractor are as follows:

- **80 mm downpipes** – either uPVC or pre-painted Colorsteel®. Downpipes, their supporting clips and other down-stream components are outside the scope of this Appraisal.

Handling and Storage

5.1 Handling and storage of all components of the Eaves Water System, is under the control of Eaves Manufacturing NZ Limited, and installers of the system. Components must be kept dry and under cover at all times. Care must be taken to avoid surface damage to components during transport or installation.

Technical Literature

6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for the Eaves Water System. 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

- 7.1 The Eaves Water System is designed to collect rainwater, whilst restricting the majority of wind-blown leaves and other debris from entering the gutter. The rainwater discharged from the roof onto the gutter lid follows the profile of the gutter lid and drops into the gutter through the front opening. The rainwater adheres to the lid of the gutter by the principle of liquid adhesion.
- 7.2 Design consideration must be given to the relationship and position of downpipes and capacity of gutters relevant to the roof areas and roof pitches. For design purposes, the Eaves Water System gutter has an effective cross-sectional area of 8000 mm². NZBC Acceptable Solution E1/AS1 can be used to verify the adequacy of the roof drainage design. Additional guidance is available in BRANZ Bulletin Issue 509 Sizing of gutters and downpipes.
- 7.3 Detailing of the supporting structure [fascia, soffit bearer and associated roof framing] is the responsibility of the designer to ensure structural adequacy to support the Eaves Water System assembly.
- 7.4 The Eaves Water System must be installed with a minimum 5 mm fall towards an outlet, discharging to downpipes 80 mm in diameter. Downpipes may be uPVC or Colorsteel®. Downpipes are secured to the outlet with 12g screws. Downpipes must be secured to the building in accordance with the downpipe supplier's instructions.
- 7.5 Design detailing must ensure that the Eaves Water System can be mounted with a minimum clearance of 2 mm below the bottom edge of the roofing. Where an eaves flashing is utilised, adequate clearance for the Eaves Water Systems gutter can be provided by extended the eaves flashing out from the fascia board by approximately 40 mm.
- 7.6 When installed on new roofs, whenever possible the installation should be completed after any painting or coating requirements are finished [e.g. Fascia boards]. Access for the completion of painting or coating will likely be compromised once the Eaves Water System is fixed in place.

Structure

Wind

- 8.1 The Eaves Water System is suitable for use in NZS 3604 Wind Zones up to and including Extra High, with fixing brackets at maximum 1.0 m centres.

Snow

- 8.2 Eaves Water System is suitable for all NZS 3604 snow zones. However fixing brackets must be at maximum 600 mm centres.

Impact Resistance

- 8.3 The Eaves Water System can be expected to have adequate resistance to concentrated loads likely to be encountered during its serviceable life. The likelihood however of impact damage when installed in non-typical situations should be considered at the design stage.

Durability

- 9.1 Eaves Water System will meet the 5-year durability requirement of the NZBC for all NZS 3604 corrosion zones, where the system is maintained. The use of Eaves Water System in severe or very severe industrial environments or localised areas of high geothermal activity is not recommended.

Serviceable Life

- 9.2 New Zealand Steel Limited specifies the suitability of Colorsteel® Maxx® for gutters in NZS 3604 Exposure Zones B, C, D and E. Refer to New Zealand Steel Limited for information on serviceable life.
- 9.3 The serviceable life of the Eaves Water System can be extended by regular maintenance carried out by the owner in accordance with the Technical Literature of New Zealand Steel Limited.



Maintenance

- 9.4 Eaves Water System should be kept clean and for optimal durability be periodically washed down to remove any grime or salt deposits that may accumulate. New Zealand Steel Limited recommends manual washing of gutters every one to six months (depending on the Colorsteel® type and the building's Exposure Zone) to maintain the gutter. The Eaves Water System incorporates removable access caps at the ends and internal and external corners that provide access for maintenance and clearing of any debris or blockages.

Painting

- 9.5 Over-painting will extend the life of the materials in most environments.
- 9.6 Eaves Water System can be over-painted when carried out according to the recommendations of Eaves Manufacturing NZ Limited and the paint manufacturer's instructions.

Prevention of Fire Occurring

- 10.1 Separation or protection must be provided to the plastic components of the Eaves Water System 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 provides methods for separation and protection of combustible materials from heat sources.

Surface Water

- 11.1 Eaves Water System, when installed in accordance with this Appraisal and the Technical Literature, will assist in the conveyance of surface water to an appropriate outfall and the integrated lid to the gutter will contribute to avoiding the likelihood of blockages.

External Moisture

- 12.1 Eaves Water System when installed in accordance with this Appraisal and the Technical Literature will contribute to the prevention of the penetration of moisture that could cause undue dampness or damage to building elements.

Water Supplies

- 13.1 When used for harvesting of rainwater, Eaves Water System can be used to reduce the amount of leaves and other debris that enters the rain collection system.

Installation Information

Installation Skill Level Requirements

- 14.1 Installation of the Eaves Water System and associated components supplied by Eaves Manufacturing NZ Limited must be in accordance with the Technical Literature and be installed by trained and approved installers.

System Installation

- 15.1 Care must be taken during transportation and installation to avoid damage to the surface coating of Eaves Water System components.
- 15.2 In the event of surface paint damage to any component, a suitable touch-up paint in the correct colour can be obtained from Eaves Manufacturing NZ Limited.

Health and Safety

- 16.1 There are no special Health and Safety issues relating to the installation or the use of Eaves Water System. Installers must however observe safe working practices for working on roofs and at heights.

Basis of Appraisal

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

Tests

- 17.1 BRANZ has completed testing to evaluate the ability of the gutter to collect rainwater from roofs and to exclude leaves.
- 17.2 Testing has been completed by Australian National Testing Laboratories Pty Ltd (ANTL) to assess the gutters ability to resist vertical and horizontal applied loads and wind loads.

Investigations

- 17.3 BRANZ has assessed resistance to impact, based on component inspection, system design, and documented history of use of the materials of fabrication.
- 17.4 An assessment was made of the durability of the components of the Eaves Water System by BRANZ technical experts.
- 17.5 Site visits have been carried out by BRANZ to assess fitness for purpose and the practicability of installation.
- 17.6 The Technical Literature for the Eaves Water System has been examined by BRANZ and found to be satisfactory.

Quality

- 18.1 The manufacture of Eaves Water System has been examined by BRANZ, including methods adopted for quality control. Details regarding the quality and composition of the materials were obtained by BRANZ and found to be satisfactory.
- 18.2 The quality of materials, components and accessories supplied to the market is the responsibility of Eaves Manufacturing NZ Limited.
- 18.3 Quality of installation onsite of components and accessories is the responsibility of installers registered with Eaves Manufacturing NZ Limited.
- 18.4 Designers are responsible for building design, and specification of water management on roofs.
- 18.5 Building owners are responsible for recommended maintenance of the Eaves Water System in accordance with the advice provided by Eaves Manufacturing NZ Limited.

Sources of Information

- BRANZ Bulletin Issue 509 Sizing gutters and downpipes, April 2009.
- NZS 3604: 2011 Timber-framed buildings.
- Acceptable Solutions and Verification Methods for New Zealand Building Code Clause E1 Surface Water, Ministry of Business, Innovation and Employment (Amendment 10, 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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EAVES WATER SYSTEM



In the opinion of BRANZ, the **Eaves Water System** 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 **Eaves Water System International Pty 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. **Eaves Water System International Pty 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 **Eaves Water System International Pty 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 **Eaves Water System International Pty Ltd** or any third party.

For BRANZ

Chelydra Percy

Chief Executive

Date of Issue:

8 March 2019