



## BRANZ Appraised

Appraisal No. 471 [2024]

## NU-SOLID MASONRY PLASTER SYSTEM

### Appraisal No. 471 [2024]

This Appraisal replaces BRANZ  
Appraisal No. 471 [2005]



### BRANZ Appraisals

Technical Assessments of  
products for building and  
construction.



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## Product

- 1.1 The NU-SOLID Masonry Plaster System is a mesh reinforced solid plaster system for use as a finishing system over a solid backing of concrete masonry, clay or concrete brick, or in-situ or pre-cast concrete.
- 1.2 The plaster system is finished with a latex-based exterior paint system. The plaster system consists of 8 mm thick fibreglass mesh reinforced, polymer-modified cement-based plaster, which is finished with a latex exterior paint system. The plaster finish can be textured to give either a sponge or adobe appearance.

## Scope

- 2.1 The NU-SOLID Masonry Plaster System has been appraised as a solid plaster system for buildings within the following scope:
  - with substrates of concrete masonry, in-situ concrete or pre-cast concrete up to 3 storeys, with a maximum height from ground to eaves of 10 m; and,
  - with substrates of clay or concrete brick veneer designed and constructed in accordance with the scope limitations of NZBC Acceptable Solution E2/AS1 or NASH Building Envelope Solutions, NZS 4210 and NZS 4229; and,
  - with floor plan area limited only by seismic and structural control joints; and,
  - with supporting structures designed and constructed in accordance with the NZBC; and,
  - detached and located 1 m or more from the relevant boundary; and,
  - situated in NZS 3604 Wind Zones up to, and including, Extra High.
- 2.2 The NU-SOLID Masonry Plaster System has also been appraised for bond, durability and weathertightness of the plaster system for concrete masonry, in-situ or pre-cast concrete buildings subject to specific design with no building height restriction or wind exposure restriction.
- 2.3 The NU-SOLID Masonry Plaster System must only be applied on vertical surfaces *[except for sills which must have a minimum 10° slope and be waterproofed in accordance with the requirements of the building designer]*.
- 2.4 The NU-SOLID Masonry Plaster System, when used on buildings within the scope detailed in Paragraph 2.1, has been appraised for use with aluminium window and door joinery that is installed with vertical jambs and horizontal heads and sills. *[Note: The Appraisal of the NU-SOLID Masonry Plaster System relies on the joinery meeting the requirements of NZS 4211 for the relevant Wind Zone.]*
- 2.5 Installation of components and accessories supplied by Ezymix Limited must only be carried out by Ezymix Limited approved applicators.

## Building Regulations

### New Zealand Building Code (NZBC)

3.1 In the opinion of BRANZ, the NU-SOLID Masonry Plaster 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 [b] 15 years and B2.3.1 [c] 5 years. NU-SOLID Masonry Plaster System meets these requirements. See Paragraphs 10.1 and 10.2.

**Clause E2 EXTERNAL MOISTURE:** Performance E2.3.2. NU-SOLID Masonry Plaster System contributes to meeting this requirement. See Paragraphs 14.1 and 14.2.

**Clause F2 HAZARDOUS BUILDING MATERIALS:** Performance F2.3.1. NU-SOLID Masonry Plaster System meets this requirement.

## Technical Specification

4.1 System components and accessories supplied by Ezymix Limited for NU-SOLID Masonry Plaster System are:

### Plasters

- **Adhesive Mortar Coarse (AMC)** is a polymer-modified, Portland cement-based plaster comprising a fine or very fine sand and additives. It is supplied in 25 kg bags and mixed on-site with clean water. It is trowel or pump-applied as a scratch coat in a 5 mm thick layer followed by the embedment of fibreglass mesh reinforcement in the outer surface.
- **Adobe Finish** - a polymer-modified Portland cement-based plaster comprising a fine or very fine sand and additives. It is supplied in 25 kg bags and is mixed on-site with clean water. It is trowel applied to give a sculptured undulating finish, 3-5 mm in thickness.
- **Sponge Finish** - a polymer-modified Portland cement-based plaster comprising a fine sand, hydrated lime and additives. It is supplied in 25 kg bags and is mixed on-site with clean water. It can be trowel or pump applied to a thickness of 3 mm.

### Accessories

- **Starter strip** - white uPVC starter strips available in 3,000 mm lengths.
  - **Control joint** - white uPVC control joints available in 3,000 mm lengths.
  - **Corner bead** - pre-meshed stainless steel corner beads available in 2,950 mm lengths.
- 4.2 Accessories used with the system, which are supplied by the building contractor are:
- **Flexible sealant** - sealant complying with NZBC Acceptable Solution E2/AS1 or NASH Building Envelope Solutions, or sealant covered by a valid BRANZ Appraisal for use as a weather sealing sealant for exterior use.

### Paint System Specification

- A latex exterior paint system complying with any of Parts 7, 8, 9 or 10 of AS 3730 must be used over the finishing plasters to make the system weathertight and give the desired finish colour to exterior walls. Paint colours must have a light reflectance value (LRV) of 40% minimum regardless of gloss value. Proprietary paint systems have not been assessed, and are outside the scope of this Appraisal.

## Handling and Storage

- 5.1 Handling and storage of all materials supplied by Ezymix Limited or, whether on-site or off-site, is under the control of Ezymix Limited approved applicators. Dry storage must be provided on-site for the bags of plaster mix.
- 5.2 Bags of Ezymix must be used within the designated shelf life of six months from the date of manufacture.

## Technical Literature

- 6.1 This Appraisal must be read in conjunction with:
  - NU-SOLID Technical Manual, Version 2, dated August 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

### Solid Substrates

#### Concrete Masonry

- 7.1 Concrete masonry must be designed and constructed in accordance with NZS 4210 and either NZS 4229 or NZS 4230.

#### In-situ and Pre-cast Reinforced Concrete

- 7.2 In-situ and pre-cast reinforced concrete walls must be specifically designed in accordance with NZS 3101 and AS/NZS 1170.

#### Clay and Concrete Brick Veneer

- 7.3 Clay and concrete brick veneer must be designed and constructed in accordance with NZBC Acceptable Solution E2/AS1 or NASH Building Envelope Solutions, NZS 4210, NZS 4229 and AS/NZS 1170. Ventilation and drainage openings must not be plastered over.

### General

- 8.1 At ground level, the bottom edge of the NU-SOLID Masonry Plaster System must be kept clear of paved surfaces, for example footpaths, by a minimum of 100 mm and unpaved surfaces by 175 mm. The bottom edge of the plaster system must be finished against a starter strip.

### Control Joints

- 9.1 Control joints in the NU-SOLID Masonry Plaster System must be constructed in accordance with the Technical Literature, and be provided as follows:
  - at maximum 6 m vertical and horizontal centres; and,
  - aligned with any control joint in the solid substrate; and,
  - where the system covers different solid substrates.

### Durability

- 10.1 NU-SOLID Masonry Plaster System meets the performance requirements of NZBC Clause B2.3.1 (b) 15 years for the plaster finish, and the performance requirements of NZBC Clause B2.3.1 (c) 5 years for the exterior paint system.

### Serviceable Life

- 10.2 The NU-SOLID Masonry Plaster System is expected to have a serviceable life of at least 30 years provided the system is maintained in accordance with this Appraisal, and the plaster is continuously protected by a weathertight coating and remain dry in-service.

### Maintenance

- 11.1 Regular maintenance is essential for NU-SOLID Masonry Plaster System installations to continue to meet the NZBC durability performance provision and to maximise their serviceable life.
- 11.2 Annual inspections must be made to ensure that all aspects of the plaster system remain in a weatherproof condition. Any damaged areas or areas showing signs of deterioration which would allow water ingress must be repaired immediately. Sealant, paint coatings or the plaster system must be repaired in accordance with the relevant manufacturer's instructions. Any damage to the substrate must be repaired and the advice of the substrate manufacturer must be sought.



- 11.3 Regular cleaning [at least annually] of the NU-SOLID Masonry Plaster System is recommended to remove grime, dirt and organic growth, to maximise the life and appearance of the coating. Grime may be removed by brushing with a soft brush, warm water and detergent.
- 11.4 Recoating of the paint system will be necessary throughout the life of the plaster system. The interval between recoats depends on the paint colour, orientation and quality of the application, and will be at approximately 5-10 yearly intervals in accordance with the paint manufacturer's instructions.
- 11.5 Minimum ground clearances as set out in this Appraisal must be maintained at all times during the life of the plaster system. *[Note: Failure to adhere to the minimum ground clearances given in this Appraisal and the Technical Literature will adversely affect the long term durability of the NU-SOLID Masonry Plaster System.]*

### Control of External Fire Spread

- 12.1 Refer to NZBC Acceptable Solutions C/AS1 and C/AS2 for fire resistance rating [FRR] and control of external fire spread requirements for external walls.

#### Horizontal Fire Spread

- 12.2 This Appraisal only covers buildings 10 m or less in height. NZBC Functional Requirement C3.2 identifies that external vertical fire spread to upper floors only needs to be considered for buildings with a building height greater than 10 m. Control of external vertical fire spread is therefore outside the scope of this Appraisal.

#### Vertical Fire Spread

- 12.3 The NU-SOLID Masonry Plaster System contains materials not tested or classified as non-combustible and is therefore not suitable for use on external walls where a FRR is required.

#### External Cladding Systems

- 12.4 The NU-SOLID Masonry Plaster System contains materials not tested or classified as non-combustible, which are suitable for use on external walls in accordance with NZBC Acceptable Solution C/AS1, Table 5.3.1.1 or NZBC Acceptable Solution C/AS2, Section 5.8.

### Prevention of Fire Occurring

- 13.1 Separation or protection must be provided to the NU-SOLID Masonry Plaster System from heat sources such as fireplaces, heating appliances and chimneys. Part 7 of NZBC Acceptable Solutions C/AS1 and NZBC Acceptable Solution C/AS2 provide methods for separation and protection of combustible materials from heat sources.

### External Moisture

- 14.1 NU-SOLID Masonry Plaster System installations, when installed and maintained in accordance with this Appraisal and the Technical Literature will contribute to the building meeting code compliance with NZBC Clause E2.3.2 by providing a weatherproof coating system to the substrate.
- 14.2 The detailing of junctions between the NU-SOLID Masonry Plaster System and external joinery, other wall penetrations, e.g. meter boxes, and other cladding and roofing junctions are the responsibility of the designer for compliance with the NZBC. These details have not been assessed and are outside the scope of this Appraisal.

## Installation Information

### Installation Skill Level Requirements

- 15.1 All design and building work must be carried out in accordance with the Technical Literature and this Appraisal. All building work must be undertaken by Ezymix Limited approved applicators. Where the work involves Restricted Building Work [RBW], this must also be completed by, or under the supervision of, a Licensed Building Practitioner [LBP] with the relevant License Class.

## System Installation

### NU-SOLID Masonry Plaster System

16.1 Components and accessories supplied by Ezymix Limited and the approved applicator must be installed in accordance with the Technical Literature by Ezymix Limited approved applicators.

### Finishing

16.2 The paint coating manufacturer's instructions must be followed at all times for application of the paint finish. Plaster must be cured a minimum of 7 days before commencing painting.

### Inspections

16.3 The Technical Literature must be referred to during the inspection of NU-SOLID Masonry Plaster System installations.

## Health and Safety

17.1 Safe use and handling procedures for the components that make up the NU-SOLID Masonry Plaster System are provided in the relevant manufacturer's Technical Literature.

## 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:

- Tensile bond strength of the NU-SOLID Masonry Plaster System to masonry block.

### Investigations

19.1 A durability opinion has been provided by BRANZ technical experts.

19.2 Site inspections have been carried out by BRANZ to assess the practicability of installation, and to examine completed installations.

19.3 The Technical Literature for NU-SOLID Masonry Plaster System has been examined by BRANZ and found to be satisfactory.

### Quality

20.1 The manufacture of the plasters has been examined by BRANZ, including methods adopted for quality control. Details regarding the quality and composition of the materials used were obtained by BRANZ and found to be satisfactory.

20.2 The quality of materials, components and accessories supplied by Ezymix Limited is the responsibility of Ezymix Limited.

20.3 Quality on-site is the responsibility of the Ezymix Limited approved applicator.

20.4 Designers are responsible for the building design, and building contractors are responsible for the quality of construction and installation of the solid substrates, joinery, flashing tapes, air seals and joinery flashings in accordance with the instructions of the building designer.

20.5 Building owners are responsible for the maintenance of NU-SOLID Masonry Plaster System in accordance with the instructions of Ezymix Limited.



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## Sources of Information

- AS/NZS 1170: 2002 Structural design action - General principles.
- NASH Building Envelope Solutions, 2019.
- NZS 3101:2006 Concrete structures standard.
- NZS 3604:2011 Timber-framed buildings.
- NZS 4210:2001 Masonry construction: Materials and workmanship.
- NZS 4229:2013 Concrete masonry buildings not requiring specific engineering design.
- NZS 4230:2004 Design of reinforced concrete masonry structures.
- Ministry of Business, Innovation and Employment Record of amendments - Acceptable Solutions, Verification Methods and handbooks.
- The Building Regulations 1992.



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In the opinion of BRANZ, **NU-SOLID Masonry Plaster 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 **Ezymix 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. **Ezymix 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 **Ezymix 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 **Ezymix Limited** or any third party.

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For BRANZ

**Claire Falck**

Chief Executive

Date of Issue:

13 September 2024