



**BRANZ Appraised**

Appraisal No.839 [2013]

**BRANZ Appraisals**

**Technical Assessments of products  
for building and construction**

**BRANZ  
APPRAISAL  
No. 839 (2013)**

## **MLC MASONRY AND BRICK PLASTER SYSTEM**

**Specialized Construction Products  
Ltd**

PO Box 101 127  
North Shore Mail Centre  
Auckland

Tel: 09 414 4499

Fax: 09 414 4489

Email: [specialized@xtra.co.nz](mailto:specialized@xtra.co.nz)

Web: [www.specialized.co.nz](http://www.specialized.co.nz)



**BRANZ**

**BRANZ Limited  
Private Bag 50 908  
Porirua City  
New Zealand**

**Tel: +64 4 237 1170**

**Fax: +64 4 237 1171**

**[www.branz.co.nz](http://www.branz.co.nz)**



## **Product**

1.1 The MLC Masonry and Brick Plaster System is a solid plaster and finishing system for use over a solid backing of concrete masonry, clay brick veneer, in-situ or pre-cast concrete.

1.2 The plaster system consists of a minimum 4 mm thick base coat of Masonry Levelling Compound plaster, followed by a 2-3 mm thick finishing texture coat of either Stucco Texture, Spanish Finish or Float Finish. The plaster system is finished with an acrylic exterior paint system.



## **Scope**

2.1 The MLC Masonry and Brick Plaster System has been appraised as a solid plaster system for buildings within the following scope:

- with substrates of concrete masonry, in-situ or pre-cast concrete up to 3 storeys, with a maximum height from ground to eaves of 10 m; and,
- with substrates of clay brick veneer designed and constructed in accordance with the scope limitations of NZBC Acceptable Solution E2/AS1, 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 one metre or more from the relevant boundary; and,
- situated in NZS 3604 Wind Zones up to and including Extra High.

2.2 The MLC Masonry and Brick Plaster System has also be 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 MLC Masonry and Brick Plaster System must only be applied on vertical surfaces (except for sills, reinforced concrete parapets and reinforced concrete balustrades which must have a minimum 10° slope and be waterproofed in accordance with the requirements of the building designer).

2.4 Installation of components and accessories supplied by Specialized Construction Products Ltd and approved applicators must be carried out only by Specialized Construction Products Ltd approved applicators.

## Building Regulations

### New Zealand Building Code (NZBC)

**3.1** In the opinion of BRANZ, the MLC Masonry and Brick 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. The MLC Masonry and Brick Plaster System meets these requirements. See Paragraphs 10.1 and 10.2.

**Clause E2 EXTERNAL MOISTURE:** Performance E2.3.2. The MLC Masonry and Brick Plaster System contributes to meeting this requirement. See Paragraphs 14.1 and 14.2.

**Clause F2 HAZARDOUS BUILDING MATERIALS:** Performance F2.3.1. The MLC Masonry and Brick Plaster System meets this requirement and will not present a health hazard to people.

**3.2** This is an Appraisal of an **Alternative Solution** in terms of New Zealand Building Code compliance.

## Technical Specification

**4.1** The MLC Masonry and Brick Plaster System consists of a minimum 4 mm thick layer of polymer-modified cement based plaster applied to concrete masonry, clay brick veneer, prepared in-situ or precast concrete, followed by a 2-3 mm thick coat of polymer modified, cement-based finishing plaster. The finishing plaster can be applied using different methods to give different texture appearances. The plaster system is then finished with a 2-3 coat acrylic paint system in the desired colour.

**4.2** System components and accessories supplied by Specialized Construction Products Ltd are as follows:

#### Plasters

- *Masonry Levelling Compound (MLC)* is a polymer modified, Portland cement-based plaster supplied in 20 kg bags and is mixed on site with clean water. MLC must be applied a minimum of 4 mm thick to ensure it maintains its cohesive strength and can be applied up to 50 mm thick in one layer. If any area requires greater than a 50 mm thickness of plaster, MLC must be applied in several layers, with each layer being left to dry before proceeding with the next. If the pointing in the concrete masonry or clay brick veneer substrate is in a poor condition, a layer of 160 g/m<sup>2</sup> fibreglass mesh can be embedded into the MLC base coat to increase the strength of the finished product.
- *Fine Mesh Coat* is a polymer modified, Portland cement-based plaster supplied in 20 kg bags and is mixed on site with clean water. It is used to achieve a heavy stucco texture finish when sprayed through a hopper gun or a sagola gun.
- *Spanish Finish* is a polymer modified, Portland cement-based finishing plaster supplied in 20 kg bags and is mixed on site with clean water. It is trowel applied in various thicknesses over the mesh coat to achieve an undulating style finish.
- *Float Finish* is a polymer modified, Portland cement-based finishing plaster supplied in 20 kg bags and is mixed on site with clean water. It is trowel applied in two coats (1-2 mm per layer) over the mesh coat and is polished flat to achieve a fine granular finish.

### Paint System Specification

- At least two coats of a 100% acrylic-based exterior paint must be used over the finishing plasters to make the system weathertight and give the desired finish colour to exterior walls. Plastershield is a 100% acrylic-based exterior paint formulated for use over Specialized Construction Products Ltd cement-based finishing plasters. Plastershield is supplied in 10 litre and 20 litre pails.
- Specialized Construction Products Ltd allows the use of other acrylic exterior paint systems over the finishing plasters. An acrylic exterior paint system complying with any of Parts 7, 8, 9 or 10 of AS 3730 may be used. Paint colours must have a light reflectance value of 25% minimum regardless of gloss value. Proprietary paint systems not supplied by Specialized Construction Products Ltd have not been assessed and are therefore outside the scope of the Appraisal.

### Accessories

- Reinforcing mesh (optional) – alkali-resistant fibreglass mesh with a nominal mesh size of 8 mm square and a weight of 160 g/m<sup>2</sup> for use in domestic and light commercial situations.
  - uPVC components – base bead and pre-meshed corner bead.
- 4.3** Accessories used with the plaster system which are supplied by the approved applicator are:
- Flexible sealant – sealant complying with NZBC Acceptable Solution E2/AS1, or sealant covered by a valid BRANZ Appraisal for use as a weather sealing sealant for exterior use.

### Handling and Storage

**5.1** Handling and storage of all materials supplied by Specialized Construction Products Ltd or the approved applicator, whether on or off site, is under the control of the Specialized Construction Products Ltd approved applicators. Dry storage must be provided for the fibreglass mesh and bags of plaster mix. uPVC flashings and profiles must be protected from direct sunlight and physical damage, and should be stored flat and under cover. Liquid components must be stored in frost-free conditions.

**5.2** Handling and storage of all materials supplied by the building contractor, whether on or off the site is under the control of the building contractor. Materials must be handled and stored in accordance with the relevant manufacturer's instructions.

## Technical Literature

**6.1** Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for the MLC Masonry and Brick Plaster 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

### Solid Substrates

#### Concrete Masonry

**7.1** Concrete masonry must be designed and constructed in accordance with NZS 4210 and either NZS 4229 or AS/NZS 1170.

## **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 using the design guidelines.

## **Clay Brick Veneer**

7.3 Clay brick veneer must be designed and constructed in accordance with NZBC Acceptable Solution E2/AS1, NZS 4210 and NZS 4229. Ventilation and drainage opening requirements as determined by the brick supplier and/or designer must be adhered to.

## **General**

8.1 At ground level, the bottom edge of the MLC Masonry and Brick Plaster System must be kept clear of paved surfaces, such as footpaths, by a minimum of 25 mm, and unpaved surfaces by 100 mm in accordance with the brick veneer requirements of NZBC Acceptable Solution E2/AS1, Figure 73D.

8.2 The exception to the ground clearance requirements in Paragraph 8.1 is where the MLC Masonry and Brick Plaster System is used to plaster concrete foundations and is continued below ground. This is outside the scope of the Appraisal and approval for its use is by specific design.

## **Control Joints**

9.1 Control joints in the MLC Masonry and Brick Plaster System must be constructed in accordance with the Technical Literature, and be provided as follows:

- aligned with any control joint in the solid substrate; and,
- where the system covers different solid substrates.

## **Durability**

10.1 The MLC Masonry and Brick Plaster System meets the performance requirements of NZBC Clause B2.3.1 (b), 15 years for the plaster finishes, and the performance requirements of NZBC Clause B2.3.1 (c), 5 years for the exterior paint system.

## **Serviceable Life**

10.2 MLC Masonry and Brick Plaster System installations are expected to have a serviceable life of at least 30 years provided the paint finish system is maintained in accordance with this Appraisal and the NZBC external moisture and internal moisture provisions are met.

## **Maintenance**

11.1 Regular maintenance is essential for the MLC Masonry and Brick 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 MLC Masonry and Brick 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 5-8 yearly intervals in accordance with the instructions of Specialized Construction Products Ltd.

## **Control of External Fire Spread**

12.1 The MLC Masonry and Brick Plaster System is suitable for use on buildings with an SH Risk Group classification, a building height of  $\leq 10$  m and at a distance of  $\geq 1.0$  m to the relevant boundary. Refer to NZBC Acceptable Solutions C/AS2 – C/AS6 Paragraph 5.8.1 for the specific exterior surface finishes requirements for other building Risk Groups.

*(Note: The scope of Paragraph 2.1 of this Appraisal limits building heights to 10 m in accordance with the limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1(a). The building heights referenced in Paragraph 11.2 above are as defined in the Definitions Sections of NZBC Clauses C1 - C6 Protection from Fire.)*

## **Prevention of Fire Occurring**

13.1 Separation or protection must be provided to the MLC Masonry and Brick Plaster System 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**

14.1 MLC Masonry and Brick 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 MLC Masonry and Brick Plaster System and external joinery, other wall penetrations, e.g. meter boxes, and other cladding and roofing junctions is 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 Installation and finishing of components and accessories supplied by Specialized Construction Products Ltd and the approved applicator must be completed by trained applicators, approved by Specialized Construction Products Ltd.

## **System Installation**

### **MLC Masonry and Brick Plaster System**

16.1 Components and accessories supplied by Specialized Construction Products Ltd and the approved applicator must be installed in accordance with the Technical Literature by Specialized Construction Products Ltd approved applicators.

16.2 The MLC Masonry and Brick Plaster System must only be applied when the air and substrate temperature is within the range of +5°C to +30°C.



## Finishing

16.3 The paint coating manufacturer's instructions must be followed at all times for the application of the paint finish. Plaster must be cured a minimum of 3-4 days before commencing painting.

## Inspections

16.4 The Technical Literature must be referred to during the inspection of the MLC Masonry and Brick Plaster System installations.

## Health and Safety

17.1 Safe use and handling procedures for the components that make up the MLC Masonry and Brick 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 MLC Masonry and Brick Plaster System to masonry block.

## Investigations

18.2 Durability and weathertightness opinions have been given by BRANZ technical experts.

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

18.4 The Technical Literature for the MLC Masonry and Brick Plaster System has been examined by BRANZ and found to be satisfactory.

## Quality

19.1 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.

19.2 The quality of materials, components and accessories supplied by Specialized Construction Products Ltd is the responsibility of Specialized Construction Products Ltd.

19.3 Quality on site is the responsibility of the Specialized Construction Products Ltd approved applicators.

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

19.5 Building owners are responsible for the maintenance of MLC Masonry and Brick Plaster System installations in accordance with the instructions of Specialized Construction Products Ltd.

## Sources of Information

- AS/NZS 1170: 2002 Structural design action – General principles.
- NZS 3604: 2011 Timber-framed buildings.
- NZS 3101: 2006 Concrete structures standard.
- NZS 4210: 2001 Masonry construction: Materials and workmanship.
- NZS 4229: 1999 Concrete masonry buildings not requiring specific engineering design.
- NZS 4230: 2004 Design of reinforced concrete masonry structures.
- Compliance Document for New Zealand Building Code External Moisture Clause E2, Department of Building and Housing, Third Edition July 2005 (Amendment 5, 1 August 2011).
- Ministry of Business, Innovation and Employment Record of Amendments for Compliance Documents and Handbooks.
- The Building Regulations 1992.



**BRANZ**

In the opinion of BRANZ, **MLC Masonry and Brick 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 **Specialized Construction Products 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. **Specialized Construction Products 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 **Specialized Construction Products 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 **Specialized Construction Products Ltd** or any third party.

For BRANZ

C Percy  
Chief Executive

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