BEAL Appraisal Certificate

APPRAISAL # C2425 **EXPIRY DATE: 30 June 2027**

The 16mm Magnum Board Shiplap Weatherboard System

Product

1.1 The 16mm Magnum Board Shiplap Weatherboard System from Health Based Building is comprised of vapour-permeable, mineral sheet based weatherboards for use over timber framing or light gauge steel framing which is protected by either a rigid or flexible air barrier, subject to wind speeds of up to and including 70m/ sec. The system is designed to provide durable, non-combustible, exterior cladding options, when over-coated with acrylic or silicate paint products.**

1.2 The system consists of MAGNUM BOARD weatherboards attached to H3.2 treated timber battens using specified nail fixings, or direct fixed over a rigid air barrier (such as the MAGNUM BOARD Rigid Air Barrier system) or a proprietary FAB system**.

1.3 The Magnum Board Shiplap Weatherboard system (MBSWB system) can be either installed over cavity battens or direct fix to the framing, in accordance with the technical literature.

1.4 The MBSWB system is to be installed by suitably experienced trade persons, under the supervision of a Licensed Building Practitioner, as described in the Appraisal-holder's technical literature.

** Proprietary Flexible Air Barrier systems are only to be used up to and including Very High Wind Zones.

NZ Building Regulations

2.1 In the opinion of BEAL, the MBSWB system, when designed, installed and maintained in accordance with the statements and conditions of this Appraisal Certificate, will meet the following provisions of the New Zealand Building Code:

2.2 **Clause B1 STRUCTURE**
Performance B1.3.3(a), (j) and (h) resistance to impact and high winds. See paragraph 8.3

2.3 **Clause B2 DURABILTY**
Performance B2.3.1(b) 15 years and B2.3.1(c) 5 years. See paragraph 8.4

2.4 **Clause E2 EXTERNAL MOISTURE**
Performance E2.3.2. Walls incorporating the MBSWB system contribute to meeting this requirement. See paragraph 8.5

2.5 **Clause F2 HAZARDOUS BUILDING MATERIALS**
Performance F2.3.1. The MBSWB system meets this requirement and will not present a health hazard to people. See paragraph 8.6

2.6 The Magnum Board Rigid Air Barrier System has been appraised as an 'Alternative Solution' in terms of compliance with the New Zealand Building Code.

Applicant:

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Scope and Limitations

3.1 The MBSWB system has been appraised for use as a 'Shiplap Weatherboard' for the protection of timber or LGS framing that are of sound construction and in compliance with the NZBC;
3.2 The MBSWB system is suited for use as a cladding within the following scope:

- For Wind Zones up to and including High, directly fixed over a proprietary Flexible Air Barrier system, to the framing, or,
- For Wind Zones up to and including up to, and including 70m/sec, fixing through cavity battens, into a suitable proprietary rigid air barrier system, designed and constructed to comply with the requirements of the NZBC; and,

3.3 The MAGNUM Board Weatherboard system shall be installed by suitably experienced trade persons, under the supervision of a Licensed Building Practitioner, within the scope and limitations described in the Appraisal-holder's technical .

Technical Literature

4.1 The MBSWB system Technical literature, including MB16210TG Magnum Board Vertical Shiplap Details, and MB16210TG Magnum Board Horizontal Shiplap Details, must be read in conjunction with this Appraisal. All aspects of design, use, installation and maintenance contained within the Technical literature and scope of this Appraisal must be followed.
4.2 For a copy of this technical literature and any subsequent updates, please visit the web site: www.healthbasedbuilding.com

Technical Details

5.1 Materials and accessories supplied by Health Based Building Ltd. are as follows:

- **MAGNUM Weatherboards**

MAGNUM Board 16mm Weatherboards are comprised of a white mineral board material with a number of attributes including vapour permeability. The nominal size of the 16mm weatherboard is 3.0m x 210mm.

- **MAGNUM Weatherboard Fixings**

The Magnum Board Shiplap Weatherboard system can be either installed over cavity battens or direct fix to the framing, in accordance with the technical literature. The MBSWB system is to be installed using the specified fixings described in the relevant technical literature.

5.2 **Handling and Storage**
All products must be stored inside, in a well ventilated area, up off concrete floors, kept dry, out of direct sunlight and away from freezing conditions.

Advice for Designers

General
6.1 The MAGNUM Board Shiplap Weatherboard system is an exterior cladding system incorporating vapour-permeable mineral board for use on new and existing timber or light gauge steel framing where the building is situated in high to extra high wind zones.
6.2 The system is designed to comply with performance clauses B2.3.1(b) for the cladding & (c) for a compliant protective coating being 15 and 5 years respectively.
6.3 Before an installation of the RAB or FAB and weatherboards can be carried out, it is essential that a inspection of the framing be carried out to ensure compliance with NZS3604:2011 for timber framing or NASH to ensure that the stud and dwang centres meet the requirements set out in the MAGNUM Board Shiplap Weatherboard system Technical Manual.

Structural performance - Clause B1
6.5 The MBSWB system when used in accordance with this Appraisal Certificate and subjected to normal conditions of environment and use, is expected to tolerate wind forces up to and including Extra High as defined in NZS3604:2011.

Durability - Clause B2
6.6 The MAGNUM Board Shiplap Weatherboard system when used in accordance with this Appraisal Certificate and subjected to normal conditions of environment and use, is expected to have a serviceable life of at least 15 years for the Magnum Weatherboards and 5 years for a compliant protective coating system. Refer to Health Based Building Ltd. for recommendations. Warranties of 20 years are available. www.healthbasedbuilding.com

External Moisture - Clause E2
6.7 Performance of the MBSWB system is reliant on the correct installation of the system to meet the requirements of clause E2.

Hazardous Building Materials - Clause F2
6.8 Performance F2.3.1. The MBSWB system when installed according to the requirements of this appraisal meets this requirement.

Installation Requirements

Installation Skill Requirement
7.1 Installation of the MBSWB system, including accessories and the application of an acrylic or silicate paint product, represented in the technical literature, shall be installed by suitably experienced trade persons, under the supervision of a Licensed Building Practitioner, as described in the Appraisal-holder's technical literature.

Preparation of Timber Framing
7.2 The moisture content of any new timber framing must be no higher than 18%.

Application of an acrylic or silicate paint product
7.3 Note that the application of an acrylic or silicate paint product system must not be undertaken when the substrate temperature is below 4°C or if it is likely to drop below 4°C during drying/curing time.

Health and Safety
7.4 The safe use and handling of the MAGNUM Board Shiplap Weatherboards and the acrylic or silicate paint products are described in the Technical Literature. The products must be used in conjunction with the relevant material safety data sheet for each product.
Refer to Section 18 of the Technical Literature.

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Basis of this Appraisal

8.1 BEAL use their 'compliance verification procedure' to assess compliance with the relevant performance clauses of the NZBC:

8.2 Buildability

The MBSWB SYSTEM system was constructed as per the manufacturer's instructions to verify ease of construction.

8.3 Performance Clauses B1.3.3(a), (j) and (h)

Compliance with these clauses was established through mechanical testing of the fixings to show resilience to high wind loads and a report from the manufacturer to indicate suitable impact resilience.

8.4 Performance Clauses B2.3.1(b) & (c) - 15 & 5 years

Compliance with performance clause B2.3.1 (b) & (c) was established through an expert opinion which considered the materials used in the MBSWB system.

8.5 Performance Clause E2.3.2

Compliance with performance clause E2.3.2 was established through a weathertightness test using a Driving Rain Test Booth to evaluate the weather tightness of the MBSWB system installed over a Rigid Air Barrier and tapes.

8. 6 Performance Clause F2.3.1

Compliance with performance clause F2.3.1 was established through an expert opinion which considered the materials used in the MBSWB system.

8.7 Other investigations carried out:

BEAL have completed a review of all test data and technical literature supplied by Health Based Building Ltd. and considered it satisfactory.

8.8 Quality & Risk Management

The quality of MBSWB SYSTEM materials, components and accessories is managed using a Building Product Quality Plan. The MBSWB system Building Product Quality Plan ensures continuous conformance with the quality requirements from purchase to the supply of components.

8.9 MBSWB SYSTEM system's Building Product Quality Plan is reviewed annually by BEAL.

8.10 The quality of installation of the MBSWB SYSTEM on site is the responsibility of suitably experienced trade persons, under the supervision of a Licensed Building Practitioner, as described in the Appraisal-holder's technical literature.

8.11 The manufacture of the MAGNUM Board has been also been considered by BEAL, with details regarding the manufacturing quality control and composition of the materials used found to be satisfactory.

8.12 Designers are responsible for the framing design, and building contractors are responsible for the quality of construction of the framing. The building owner is responsible for the supply and correct installation of windows and doors and any other

9.1 Responsibilities

Building owners are responsible for the maintenance of the MBSWB SYSTEM as per the warranty information and this Appraisal Certificate.

Sources of Information

- The Building Regulations 1992, as at 15 November 2021
- NZS 3604:2011 Timber framed Buildings
- NASH Standards 1 & 2
- ICC-AC386 - Acceptance Criteria for Fibre-reinforced Magnesium-oxide Based Sheets.
- Test data and technical literature supplied by the MAGNUM Board manufacturer in the USA. This includes the test report from ICC-Evaluation Service using the ICC -AC386 - "ACCEPTANCE CRITERIA FOR FIBER-REINFORCED MAGNESIUM-OXIDE-BASED SHEETS" originally issued 1 July 2015 and updated since.
- Letter concerning a 50 year durability from Thompson Global Partners LLC dated 27 August 2018
- Fixing capacity testing in wind speeds of up to and including 70m/sec was also peer reviewed by a Chartered Structural Engineer.
- The absence of asbestos as a hazardous material, is referred to in the test data supplied by the manufacturer.

Test Reports from BEAL:

TR140616-1 Adhesion of the protective coating
TR140717-1 Weathertightness (based on 9mm thick weatherboards being indicative)
TR220610-2 MOE & MOR—face side up
TR220616-2 Nail pull-through
TR220718-2 MOE & MOR - face side down

Concluding statement

9.1 In the opinion of BEAL, the MBSWB SYSTEM system is fit for purpose and will comply with the NZBC to the extent specified provided that it is used, designed, installed and maintained as set out in this Appraisal Certificate.

The Appraisal Certificate is issued only to Health Based Building Ltd., and is valid until the date of expiry described on the front of this appraisal, subject to the conditions of this Appraisal.

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Conditions of Appraisal

10.1 This appraisal Certificate:
a) Relates only to the MBSWB SYSTEM system as described herein;
b) Must be read, considered and used in full, together with the current version of the Technical Literature
c) Does not address any legislation, regulations, codes or standards, not specifically named herein;
d) Is a copyright of BEAL

10.2 The Appraisal Certificate holder continues to meet the quality requirements of the Health Based Building Ltd. Building Product Quality Plan and has the plan audited and Appraisal certificate revalidated by BEAL on an annual basis.

10.3 Health Based Building Ltd. shall notify BEAL and obtain approval of any changes of the product specification or quality assurance prior to product being marketed including any trade literature, web site info or the like.

10.4.BEAL makes no representation 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 the Appraisal Certificate holder.

10.5 BEAL's verification of the building product or system complying with one or more of the above-mentioned criteria is given on the basis that the criteria used were those that were appropriate to demonstrate compliance with the NZBC at the date of this Appraisal Certificate. In the event that the criteria is withdrawn or amended at a later date, this Appraisal may no longer remain valid.

10.6 Any reference in this Appraisal Certificate to any other publication shall be read as a reference to the version of publication specified in this Appraisal Certificate.

Authorised Signatory

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BEAL (Building Element Assessment Laboratory Limited)

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