BEAL Appraisal Certificate

APPRAISAL #: C2315

EXPIRY DATE: 31 Mar 2024

The TAUCO Insulating Weatherboard System

Product

1.1 The TAUCO Insulating Weatherboard System comprises a light, pre-finished Mg-Aluminium PU insulated sandwich panel weatherboard in shiplap format complete with optional 10 to 50mm thick insulating Rigid Air Barrier or flexible air barrier, trims and the like to provide a very energy-efficient cladding system.

1.2 The weatherboards are available in a range of colours.

1.3 The TIWS is to be installed by persons trained and approved by Forest Mountain NZ Ltd. or their agent, within the scope and limitations described in the Appraisal-holder's Technical Manual.

NZ Building Regulations

2.1 In the opinion of BEAL, the TAUCO Insulating Weatherboard System (TIWS), 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:

Performance Clause B1.3.3 (h) & (j). The TIWS complies with this requirement - Refer Para 6.3
Performance Clauses B 2.3.1 (a) for fixings (b) for weatherboards & (c) for the decorative finish. The TIWS complies with this requirement - Refer Para 6.4
Performance Clause E2.3.2 The TIWS complies with this requirement - Refer Para 6.5
Performance Clause F2.3.1 The TIWS complies with this requirement - Refer Para 6.6
Performance Clause H1.3.1 The TIWS complies with this requirement - Refer Para 6.7
Compliance with other clauses have been considered and found not applicable.

2.2 The TAUCO Insulating Weatherboard System has been appraised as an 'Alternative Solution' in terms of compliance with the New Zealand Building Code.

Scope and Limitations

3.1 The TAUCO Insulating Weatherboard System (TIWS) is designed as a cladding for buildings constructed from timber framing in conformance with NZS3604 or light gauge steel framing in conformance with the NASH Standard 1 or concrete in conformance with NZS3603, with a building height of no more than 10m from the ground.

3.2 The TIWS is to be installed over a proprietary frame protection system comprising either a rigid air barrier or a flexible air barrier.

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3.3 The TIWS may be direct fixed over the frame protection system where the wind zone is less than or equal to High in terms of NZS3604. In all other situations the TIWS shall be installed over cavity battens where the wind zone is less than or equal to Extra High in terms of NZS3604.
3.4 The owner of the building is responsible for the proper maintenance of the installed cladding system in conformance with the requirements of the Forest Mountain NZ Ltd. warranty.

Technical Literature

4.1 The TAUCO Insulating Weatherboard System (TIWS) Technical Literature **Ver 3.4** 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 Certificate must be followed.
4.2 For a copy of this Technical Literature please contact Forest Mountain NZ Ltd.

Technical Details

5.1 The TIWS is a shiplap cladding system, comprising either a 16mm, 30mm or 50mm thick insulating PVDF** coated Mg-Aluminium sandwich panel weatherboard, using a stainless steel clip fixing system. The weatherboards are held in place using a proprietary stainless steel clip, which is screw-fixed through a NZBC compliant flexible or rigid air barrier into the timber framing, or, screw fixed through a 10 to 50mm thick XPS rigid air barrier installed over light gauge steel framing.

Sizes available

5.2 The weatherboards* are supplied in 3.8m or 5.8m lengths and in a range of standard colours.
*Special orders are available.

Insulation values

5.3 Insulation values are -

- 5.8m* x 410m x 16mm (R-value: 0.69) (0.5kg/m)
- 5.8m* x 410m x 30mm (R-value: 1.48) (0.83kg/m)
- 5.8m* x 410m x 50mm (R-value: 2.17) (1.16kg/m)

Components supplied by Forest Mountain

5.4 Materials and accessories supplied by Forest Mountain NZ Ltd. are as follows:

- TAUCO insulating weatherboards
- TAUCO stainless steel clips
- 10 to 50mm thick XPS based rigid air barrier incorporating SIGA sealing tapes
- Internal and external corner trims
- Starter trim
- Top of wall trim

Components supplied by the owner

- The owner is required to provide a flexible or rigid air barrier system over the framing, and, if required by the designer, cavity battens .

Handling and Storage

5.5 All components 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 TIWS is an insulated cladding system with several options, intended for installation over either an XPS RAB (acting as a thermal break) installed over Light Gauge Steel (LGS) framing, or over timber framing.
6.2 Before any installation can be carried out, it is essential that a careful inspection of the installed framing be carried out to ensure it meets the requirements described in the TIWS technical literature.

Structure - Clause B1.3.3 (a) & (h)

6.3 The applied TIWS when installed according to the technical literature, will meet the requirements of clause B1.3.3 (a) & (h) for self weight and wind.

Durability - Clause B2

6.4 The TIWS is expected to have a serviceable life of at least 15 years.

External Moisture - Clause E2

6.5 The TIWS will comply with the requirements of this clause when the system is installed in accordance with the technical literature.

Hazardous Building Materials - Clause F2

6.6 Performance F2.3.1. The installed TIWS will not present a health hazard to people using the building.

Energy Efficiency - Clause H1

6.7 Performance H1.3.2E. The installed TIWS will contribute to a building meeting the 'building performance index.

Installation Requirements

Installation Skill Requirement

7.1 The TIWS must be carried out by approved experienced installed by tradespeople under the supervision of a person who has been trained and approved by Forest Mountain NZ Ltd.

Health and Safety

7.2 The safe use and handling of the coating system and related components are provided in the Technical Literature. The products must be used in conjunction with the relevant materials safety data sheet for each component.

** PVDF means polyvinylidene fluoride coating is a factory applied, resin based coating system with embedded colour pigment particles.

Basis of this Appraisal

BEAL use the compliance verification procedure to demonstrate compliance with the relevant clauses of the NZBC based on a risk analysis procedure. The following is a summary of the technical investigations carried out:

Assessments

8.1 The following assessments of the TIWS have been undertaken by BEAL:
Review of test data and technical literature supplied by Forest Mountain NZ Ltd.

Testing

8.2 The following testing of the TAUCO Insulating Weatherboard Cladding System has been undertaken by BEAL and FacadeLab Auckland to verify compliance with the relevant performance clauses of the New Zealand Building Code:

- Capacity of the stainless steel clip fixing system to meet the requirements of clause B1.3.3 (a) & (h);
- Capacity of the TIWS to provide durability for at least 15 years;
- Ability of the TIWS to provide reliable weathertightness of the external wall;
- Ability of the weatherboards to contribute to the thermal performance of the external wall.

In-service History

8.3 The TIWS, when subject to the manufacturer's requirements, has performed satisfactorily in New Zealand and other parts of the world, in a wide range of conditions.

Other Investigations

8.4 The installation of the TIWS was also evaluated in practical building situations assessing the following;

- Ease of installation
- Potential risks of non-performance when being installed
- Any external factors that could affect the quality of the installed product
- The Technical Manual has been examined by BEAL and found to be satisfactory.

Quality

8.5 The quality of materials, components supplied by Forest Mountain NZ Ltd. is managed through the use of a Building Product Quality Plan.

8.6 The Forest Mountain NZ Ltd. Building Product Quality Plan, ensures continuous conformance with the quality requirements from purchase to application by experienced and approved applicators.

8.7 Forest Mountain NZ Ltd.'s Building Product Quality Plan is reviewed and audited at least annually by BEAL or appointed agent.

8.8 Designers are responsible for the substructure design, and building contractors are responsible for the quality of construction of the substructure or new substrate in accordance with the instructions of the substrate manufacturer and this Appraisal Certificate.

8.9 Building owners are responsible for the maintenance of the installed TIWS as detailed in the manufacturer's technical literature.

Sources of Information

- The Building Regulations 1992, reprinted 1 January 2017
- NZS 3604:2011 Timber framed Buildings
- AS/NZS2269 Plywood - Structural
- NASH Standard 1
- The TAUCO Insulating Weatherboard Technical Manual version 3.3
- A weathertight test report dated 18.11.2022 from FacadeLab, Auckland
- BEAL Test Report TR181110-1 Negative Wind Load Properties of the TAUCO Weatherboard Clip fixing
- BEAL Test Report TR180404-1 Assessment of fixing pull though resistance
- BEAL Test Report TR160613-1 PU Thermal Conductivity
- BEAL Test Report TR160902-1 MOR MOE of TAUCO Alu Weatherboards;
- BEAL Test Report TR170717-1 WB Screw Pull Through
- BEAL Test Report TR180228-1 Screw Pull Through 0.3mm
- BEAL Test Reports covering the performance of the XPS RAB including thermal properties.

Concluding statement

9.1 In the opinion of BEAL, the TIWS is fit for purpose and will comply with the NZBC to the extent specified provided that it is used, designed, installed and maintained in accordance with the manufacturer's instructions and this Appraisal Certificate.
The Appraisal Certificate is issued only to Forest Mountain NZ Ltd., and is valid until further notification, subject to the conditions of this Appraisal.

Conditions of Appraisal

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

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

10.3 Forest Mountain NZ 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 performance 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,

C R Prouse - Director
BEAL (Building Element Assessment Laboratory Limited)
[March 2023]

