



EXPIRES 1 MAR 2019

BEAL Appraisal Certificate



The PLASTERCRETE AAC Wall Panel System



Product

- 1.1 The PLASTERCRETE AAC Wall Panel System (PAWPS) is a drained and ventilated masonry veneer wall cladding with a painted and textured finish. It is designed to be used as an external wall cladding system for residential and light commercial type buildings where domestic construction techniques are used.
- 1.2 The system consists of autoclaved aerated concrete (AAC) panels fixed over high density polystyrene battens or Cavibat battens to form a 20mm cavity. The finishing system for Supercoat™ consists of a minimum 5mm thick Supercoat base render with fibreglass mesh embedded into it, followed by the application of a nominal 2mm thick Supercoat™ skimcoat, followed by the application of Supercoat™ textured finish. A coat of Supercoat™ Surface Sealer is then applied, followed with the application of 2 coats of Supercoat™ acrylic paint coating system.
- 1.3 The system incorporates a drained and ventilated cavity by way of 40mm x 20mm EPS cavity battens or the use of the 42mm x 19mm PVC Cavibat battens (one type for vertical use, one type for horizontal use).

Building Regulations

- 2.1 In the opinion of BEAL, the PAWPS, if designed, installed and maintained in accordance with the statements and conditions of this Appraisal Certificate, will meet the following provisions of the NZBC.
- 2.2 Clause B1 STRUCTURE
Performance B1.3.1 and B1.3.3. The PAWPS meets the requirements for loads arising from self weight, earthquake, wind, impact and creep [i.e. B1.3.3 (a), (f), (h), (j) and (q)]. See paragraphs 11.1-11.4
- 2.3 Clause B2 DURABILITY
Performance B2.3.1 (b), 15 years, B2.3.1 (c), 5 years, and B2.3.2. The PAWPS meets this requirement. See paragraphs 12.1-12.5
- 2.4 Clause C3 Fire
Performance C3.3.5 covering external spread of fire. The PAWPS meets this requirement. See paragraphs 13.1-13.2
- 2.5 E2 EXTERNAL MOISTURE
Performance E2.3.2. The PAWPS meets this requirement. See paragraph 14.1-14.7
- 2.6 Clause F2 HAZARDOUS BUILDING MATERIALS
Performance F2.3.1. The PAWPS meets this requirement and will not present a health hazard to people.

The PAWPS has been appraised as an **Alternative Solution** in terms of New Zealand Building Code Compliance.

Applicant:



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The most up to date version of this BEAL Appraisal Certificate can be viewed at www.beal.co.nz

Scope and Limitations

3.1 The PAWPS has been appraised for use as an external wall cladding system for buildings within the following scope:

- Scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1; and,
- Constructed with timber framing complying with the NZBC; and,
- Constructed with steel framing complying with the NZBC; and,
- With a risk score of 0-20, calculated in accordance with NZBC Acceptable Solution E2/AS1, Table 2; and,
- Can be situated in up to and including 'Very High' wind zones as described in NZS 3604 Building Wind Zones

3.2 The PAWPS has also been appraised for structural wind loading when used for timber or steel framed buildings subject to specific design up to a design differential ultimate limit state (ULS) wind pressure of 2500Pa.

3.3 The PAWPS must only be installed on vertical framing.

3.4 The system is appraised for use with aluminum window and door joinery that is installed with vertical jambs and horizontal heads and sills. (The Appraisal of the PAWPS relies on joinery meeting the requirements of NZS 4211 for the relevant building wind zone or being specifically designed for use in specifically designed buildings).

3.5 Installation of components and accessories supplied by Lowenhouse Ltd must be carried out only by personnel trained and certified by Lowenhouse Ltd.

Technical Literature

4.1 Refer to the PAWPS Technical Manual Edition PC V1.0 2017. The Technical Literature 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 and any subsequent updates please refer to:
www.plastercrete.co.nz

Technical Specification

5.1 System components and accessories supplied by Lowenhaus Ltd as follows:

Cavity Battens

20mm EPS Cavity Battens

- Cavity battens are manufactured from very high density (Class VH) EPS with a density of no less than 28kg/m³. The battens are 40mm wide by 20mm thick and are supplied in 1200mm lengths.

19mm PVC CaviBat Battens

- CaviBats come in two forms, one with vertical flutes for use in vertical stud applications, the other with horizontal flutes for use when attached to dwangs. The hollow flutes allow the passage of moisture.

Plastercrete AAC Panel

- The Plastercrete AAC Panel Panels are 50mm

thick, manufactured from autoclaved aerated concrete with an approximate density of 560kg/m³. The panels are supplied in lengths of 2200mm long by 600mm wide and subject to the Plastercrete Building Product Quality Plan (BPQP).

Accessories

- Supercoat™ Superbond cement based panel adhesive
- uPVC Components include -
 - Plastercrete PVC sill flashing
 - Powder coated aluminium head flashing (installed by the owner)
- Plastercrete system sealant (Maxilam Sabre Seal MS Façade)
 - Plastercrete PVC jamb flashing
 - Plastercrete PVC base cap flashing
 - PVC base cap moulding 50mm
- Vents - PVC vent 90mm x 66mm
- Zinc-rich primer compliant with AS/NZS 2311
- 14 -10 x 100mm long AS3566 corrosion class 3 or 4 Bugle head screws for use in NZS 3604 defined corrosion zones 1,2, 3 and 4. Grade 304 stainless steel shall be used in the sea spray zone.
- Reinforcing Mesh - High quality alkali resistant fiberglass mesh with a nominal size of approx. 4mm square and a weight of 150g/m² for use in domestic and light commercial situations.

Supercoat Plaster and Coating System

5.2 All Plaster components used for the protection and weatherproofing of the AAC Panels are to be supplied by Ironbark Technology Ltd. The Supercoat plaster and coating System has been assessed by BEAL.

Base Coat Plasters

- **Supercoat™ base render** is a polymer-modified, cementitious rendering material specifically designed for thin section rendering over AAC. It is applied as a minimum 5mm thick basecoat, followed by the embedment of high quality alkali resistant fibre glass mesh reinforcement.
- **Supercoat™ skimming render** is a cementitious skimming material designed to be applied as a nominal 2mm thick texturing over Supercoat™ base render.

Finishing Coatings

- Supercoat™ acrylic or cementitious textured finishes applied over Supercoat™ skimming render.
- Supercoat™ Surface Sealer is an acrylic sealer coat applied by a brush or roller used before subsequent Supercoat™ acrylic layers
- Supercoat™ paint is a high build acrylic protective coating applied by a brush or roller over Supercoat™ textured coats. A minimum of 2 coats must be applied to make the system weathertight and produce the desired finish.
- Proprietary paint systems not supplied by Ironbark Technology Ltd have not been assessed and are therefore outside the scope of this Appraisal Certificate.

5.3 Accessories used with the system which are supplied by Lowenhouse Ltd certified installers

are:

- VH grade 40mm x 20mm EPS cavity battens
- Maxilam Sabre Fix PS to adhere the EPS batten to the Wall wrap
- Supercoat™ Superbond AAC panel adhesive
- Screws shall be 14 x 100mm bugle head galvanized screws, class 4 type 17, complying with

- Compliance document E2/AS1 Table 20.
 - Flexible sealant shall be Maxilam Sabre Seal MS Façade or Holdfast FIXALL MS 220LM complying with NZBC.
 - Anti-corrosion paint for exposed steel wire shall be a zinc-rich primer compliant with AS/NZS 2311.
 - The range of Plastercrete flashings to suit the particular layout of the cladding
 - The Plastercrete Vent is a proprietary product with an opening of 100mm x 50mm and is installed when the cladding sits into a rebate in the floor slab.
- 5.4 Accessories used with the system which are supplied by the building contractor are:
- Head flashing - Head flashing complying with NZBC Acceptable Solution E2/AS1 paragraph 4.6.1.6 and table 7 with a minimum stop end of 20mm, installed in accordance with the Technical Literature
 - Foam tape to be installed under the head flashing onto the top of the Aluminium window or door joinery shall be Inseal 3259 single sided foam tape 3mm wide by 3mm thick length cut to suit.
 - Building wrap - paper or wrap complying with the requirements of NZBC Acceptable Solution E2/AS1 Table 23.
 - Flexible flashing sill and jamb tapes - flexible flashing tapes complying with AAMA 711-07, or a flexible flashing tape covered by a valid BEAL and/or BRANZ Appraisal for use around window and door joinery openings.
 - A Frame Protection System complying with the performance requirements of BEAL.

Handling and Storage

- 6.1 Handling and storage of all the materials supplied by Lowenhaus Ltd or the licensed contractor, both on and off site are under the control of Plastercrete licensed contractors.
- 6.2 Dry storage must be provided on site for the AAC Cladding Panel, fiberglass mesh and bags of render with the AAC panels stored flat and protected from physical damage. EPS battens, uPVC flashing and mouldings must be protected from direct sunlight, physical damage and stored flat and under cover. All liquid components shall be stored in dry, frost free conditions.
- 6.3 Handling of the AAC panels require care to prevent damage to corners or excessive flexing.
- 6.4 Handling and storage of all the materials supplied by the building contractor, both on and off site is the responsibility of the building contractor. Materials must be handled and stored in accordance with the manufacturers instructions.

Design Information

Framing

Timber Framing

- 7.1 Timber used in timber framing shall be treated as required by NZS 3602
- 7.2 Timber framing must comply with NZS 3604 for both buildings or parts of buildings within the scope limitations of NZS 3604. Where buildings or parts of

buildings are outside the scope of NZS 3604 then they must be to specific design in accordance with NZS 3603 and AS/NZS 1170. Where specific design is required, the framing must be of at least the equivalent stiffness to the framing provisions of NZS 3604. In all cases, studs must be at a maximum of 600mm centres.

7.3 Timber framing must have a maximum moisture content of 18% at the time of cladding application. *(Problems could arise later on due to timber shrinkage if over 18%)*

Steel Framing

7.4 Steel framing must be to a specific design meeting the requirements of the NZBC. (NASH 3405: 2006)

7.5 The minimum steel framing specification is 'C' section studs and nogs of overall section dimensions of 76mm web by 40mm flange. Steel thickness must be a minimum 0.55mm.

7.6 For steel framed buildings situated within NZS3604 defined wind zones up to and including 'Very High', studs must be at maximum 600mm centres. All other buildings studs must be at maximum 400mm centres.

Dwangs must be fitted flush with the stud.

AAC Panel Layout

7.7 AAC panels are installed horizontally in a stretch-er-bond pattern. Vertical panel edges may be jointed on stud or off stud. AAC Panels must be supported at fixing locations with vertical cavity battens or cavity spacers 100mm long max. At the base of the wall the AAC Panel can be either rested on a concrete rebate (50mm below finished floor level) or hang 50mm below the finish floor level.

General

8.1 Openings in the slotted base cavity closer provide a minimum ventilation opening area of 1000mm² per lineal metre of wall as per the requirements of NZBC Acceptable Solution E2/AS1, paragraph 9.1.8.3 (b).

8.2 The Plastercrete Vents provide a minimum ventilation opening area of 1000mm² per lineal metre of wall.

8.3 The ground clearance between the finished floor level and ground level as outlined in NZS 3604 must be adhered to at all times. At ground level, paved surfaces must be kept clear from the bottom edge of the PAWPS by a minimum of 100mm, and unpaved surfaces by 175mm in accordance with the requirements of NZBC.

8.4 At balcony, deck or roof to wall junctions, the bottom edge of the AAC panel must be kept clear of any adjacent surface, or above the top surface of any adjacent roof flashing by a minimum of 35mm in accordance with the requirements of NZBC.

8.5 Where the PAWPS abuts other cladding systems, designers must detail the junction to meet their own requirements whilst meeting performance requirements of the NZBC. The Technical Literature does provide some guidance. Details not included within the Technical Literature have not been assessed and are therefore outside the scope of this Appraisal.

8.6 PVC sheathed electrical cables must be prevented from direct contact with the EPS cavity battens. When cables must penetrate the EPS cavity battens for electrical connections, the cable must be directly supported by passing through an electrical conduit.

8.7 Both timber and steel framing shall be protected from the ingress of wind and moisture by way of installa-

tion of a Frame Protection System, incorporating taped edging and overlaps of the underlay, as well as the use of proprietary boots for pipe penetrations, in order to meet the performance requirements of the NZBC.

Control Joints

9.1 Control joints where AAC Panels are used must be constructed in accordance with the Technical Literature and as follows;

- Horizontal control joints - To be installed when intermediate floor joists are not seasoned and/or when the height of the wall exceeds 6m
- Vertical Control Joints - at maximum 6.6m centres; aligned with any control joint within the structural framing, or where the system abuts other cladding systems. Located at both internal and external corners.

(Note: Where possible control joints shall not be located in line with window and door openings. Horizontal and vertical control joints must be located over structural supports. The Technical Literature provides some guidance for the design of vertical control joints where the system abuts different cladding types. Details not included within the Technical literature or those that are marked as 'Specific Design Only' are outside the scope of this Appraisal Certificate and are the responsibility of the designer.)

Structure - Clause B1

Mass

11.1 The mass of PAWPS (panel and coating system) has a approximate mass of 32kg/m², considered a medium wall cladding in terms of NZS 3604.

Impact Resistance

11.2 The system has adequate resistance to impact loads that the cladding system is likely to be subjected to when used in a residential situation. The likelihood of impact damage to the system when used in light commercial situations should be considered at the design stage, with appropriate protection provided such as bollards or barriers where necessary.

Wind Zone

11.3 The PAWPS is suitable for use in all building wind zones as per NZS 3604, up to, and including 'Very High' where buildings are designed to meet the performance requirements of NZBC, or up to the ultimate limit state (ULS) wind pressure of 2500Pa when the building is subject to specific design.

AAC Panel Fixing

11.4 Where a 20mm cavity is produced the respective cavity battens are fixed (either deluxe or classic) through to the wall framing at 600mm centres vertically. The AAC Panel must then be fixed through the cavity batten and/or cavity spacers and into the framing with a bugle head screw. (refer to 4.1) at 300mm centres.*

Note:

- 300mm centres is applicable to both; Low to very high NZS 3604 defined building wind zones with studs at maximum 600mm centres, and; Specifically designed buildings up to design differential 2.5kPa ULS wind pressure with studs at maximum 600mm centres.
- * Fixings to be positioned minimum 150mm in from the edge of the panel giving an overall layout of 300mm centres per panel.

- Fixings are also required horizontally at 600mm centres.
- A minimum of 6 bugle headscrews per full panel (2200 x 600mm) is required.
- Bugle head screws must be embedded a minimum of 5mm into the AAC Panel and a maximum of 10mm.

Durability- Clause B2

12.1 The PAWPS when used in accordance with this Appraisal Certificate and subjected to normal conditions of environment and use will meet the performance requirements of NZBC B2.3.1 (b), 15 years for the cladding system and plaster finish, and the performance requirements of NZBC B2.3.1 (c), 5 years for the exterior paint system (the life of the product not being less than 5 years).

Maintenance

12.2 Regular maintenance is essential to ensure the performance requirements of the NZBC are met and to ensure the maximum serviceability of the PAWPS.

12.3 Regular cleaning (at least annually) of the paint coating is required to remove grime, dirt and organic growth as per the Technical Literature in order to maximize the life and appearance of the acrylic paint coating. Paint coatings must be reapplied every 10 years in accordance with the paint manufacturers instructions. Re-coating colours shall have an LRV (light reflectance value) of 40% or greater.

12.4 Regular inspections (at least annually) must be made on the system to ensure that all aspects of the PAWPS including the (textured) coating system, plasters, flashings and any sealed joints remain in a weatherproof condition. Any cracks, damaged areas or areas showing signs of deterioration that could allow water ingress, must be repaired immediately. The PAWPS must be maintained and repaired in accordance with the instructions from Lowenhouse Ltd.

12.5 Minimum ground clearance as set out in this Appraisal and Technical Literature must be maintained at all times during the life of the system to maintain the durability and weathertightness of the system.

External Fire spread - Clause C3

13.1 The PAWPS is considered to meet the performance requirements of NZBC C3.3.5 for use as an external wall cladding when restricted to:

- Single storey buildings 1m or more from the boundary for all purpose groups
- Buildings up to 7m high, 1m or more from the boundary, for all purpose groups other than SC and SD.

13.2 Clearance separations from chimneys and flues are not required for the AAC Panel. Where the panel is used with or attached to a heat sensitive material, the heat sensitive materials must be separated from chimneys and flues to meet the performance requirements of NZBC.

External Moisture - Clause E2

14.1 When installed in accordance with this Appraisal Certificate and Technical Literature, the PAWPS will prevent the penetration of water that could cause undue dampness and/or damage to building elements and will therefore comply with clause E2.3.2.

14.2 The cavity must be sealed off from the roof and subfloor space in order to meet the performance requirement of E2.3.5.

14.3 The PAWPS allows excess moisture present at the completion of construction to be dissipated without causing permanent damage to the building elements to meet the performance requirement of Clause E2.3.6.

14.4 The details provided within the Technical Literature for weather resistance are based on the design principle of employing both a 1st and 2nd line of defence against moisture entry for joints, penetrations and junctions. Moisture ingress must be prevented by detailing any joinery or wall junctions as shown in the PAWPS technical manual. Any weathertightness details developed by a designer are outside the scope of this Appraisal Certificate and are the responsibility of the designer.

14.5 The presence of a drained cavity does not reduce the requirement to ensure the cladding wall and all the relevant junctions, penetrations etc remain weather resistant in order to comply with Clause E2.3.6.

Water Vapour

14.6 The PAWPS is not a barrier to the passage of water vapour, and when correctly installed in accordance with both this Appraisal and Technical Literature will not create or increase the risk of moisture damage resulting from condensation. When installed over steel frame please refer to 14.7.

14.7 When the PAWPS is installed over a steel frame, 10mm (V.H) expanded polystyrene thermal break sheeting with a R value of at least 0.3, must be installed over the steel frame (stud, nog, top and bottom plate) to provide a effective thermal break.

Installation Information

Installation Skill Level Requirement

15.1 Installation and finishing of the components and accessories supplied by Lowenhouse Ltd and the licensed contractors must be completed by trained installers/applicators, certified by Lowenhouse Ltd.

15.2 Installation of the accessories supplied by the building contractor must be completed by a tradesperson who has an understanding of cavity based cladding construction, in accordance with instructions given within the PAWPS Technical Manual and this Appraisal Certificate.

System Installation

16.1 The selected Frame Protection System (FPS) must be installed by the building contractor in accordance with the FPS manufacturer's instruction, prior to the installation of the cavity battens and the rest of the PAWPS.

16.2 Aluminum joinery must be installed by the building contractor in accordance with the Plastercrete Technical Literature. A 7.5-10mm nominal gap must be left between the joinery reveal and the wall framing so a PEF rod and airseal can be installed after the joinery has been secured in place. The joinery must be spaced approx 25mm in from the outside of the panel face.

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16.4 Must be installed in accordance with the Technical Literature by Lowenhouse Ltd trained contractors.

16.5 The Technical Literature must be referred to during the inspection of the AAC Wall Panel System installations.

Finishing System

16.6 The application of the Supercoat Coating systems must be applied in accordance with the manufacturers instructions at all times. The plaster must be cured for a minimum of 2-3 days and must be dry before painting may commence.

Health and Safety

17.1 When cutting, drilling or grinding the AAC panel, this must be carried out in an open air or well ventilated area, and a dust mask, eye protection and gloves must be worn.

17.2 All aspects of cutting, drilling or grinding must comply with the latest regulations of the occupational safety and health division of the labour department.

17.3 Refer to the Technical Literature from the relevant manufacturer for the safe use and handling of the components that make up the PAWPS.

Basis of 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

Tests

18.1 The following testing of the PAWPS and its respective components has been undertaken by BEAL unless otherwise noted:

- BEAL opinion on NZBC E2 code compliance was based on the evaluation of all details within the scope of this Appraisal and testing of the Plastercrete AAC Wall Panel System to a method based on E2/VM1. The testing assessed the performance of the window head, jamb and sill details, meterbox head, jamb and sill details, vertical control joints, internal and external corners. BEAL have also reviewed the details contained within the technical manual, and a opinion has been given by BEAL that the system will meet the performance requirements for a drained cavity system.

- Adhesion and compatibility testing of the Supercoat™ plaster products with the AAC panel in accordance with ASTM C297.
- The flexural ability of the Supercoat™ plaster products were also assessed to verify durability.
- Testing undertaken by OPUS laboratories in determining the compressive strength, dry bulk density and drying shrinkage of the AAC panel to verify the durability of the system.

Other Investigations

19.1 Wind loadings, self weight, seismic loadings, shear force, panel capacity, fastener pull through testing and calculations for the PAWPS were determined by an independent Chartered Engineer in respect to the requirements of compliance document B1 Structure. Structural and durability opinions were provided.

19.2 Ease of application has been assessed

19.3 The Technical Literature for the PAWPS has been examined by BEAL and found to be satisfactory.

Quality

20.1 The manufacture of the renders has been assessed by BEAL, including quality control measures. Details regarding the quality and composition of the materials used were obtained by BEAL and found to be satisfactory.

20.2 The quality of materials, components and accessories supplied by Lowenhouse Ltd is managed through the use of the Building Product Quality Plan.

20.3 The Lowenhouse Ltd's Building Product Quality Plan ensures continuous conformance with the quality requirements from purchase to supply of components.

20.4 Lowenhouse Ltd's Building Product Quality Plan is reviewed at least annually by BEAL.

20.5 Quality on site is the responsibility of the Lowenhouse Ltd approved contractors.

20.6 Designers are responsible for the building design, and building contractors are responsible for the quality of installation of framing systems, joinery, building wrap, flashing tapes, head flashings and air seals in accordance with the instructions of Lowenhaus Ltd and this Appraisal Certificate.

20.7 For a copy of this Technical Literature and any subsequent updates please refer to:

www.plastercrete.co.nz

20.8 Building owners are responsible for the maintenance of the Plastercrete AAC Wall Panel System in accordance with instructions of Lowenhaus Ltd and this Appraisal Certificate.

Sources of Information

- AS 3566 Self drilling screws for the building and construction industries.
- AS 3730 Guide to the properties of paints for buildings
- AS/NZS 1170:2002 Structural design actions
- ASTM B117 Standard practice for operating salt spray apparatus
- ASTM C 297: Standard test method for flatwise tensile strength of sandwich constructions.
- ASTM C 1386: Standard specification for precast autoclaved aerated concrete (AAC)

- NASH 3405:2006 Steel framed buildings
- NZS 3602:2003 Timber and wood-based products for use in building.
- NZS 3603:1993 Timber structures standard
- NZS 3604:1999 Timber framed Buildings
- NZS 4211:1985 Specification for performance of windows
- Compliance Document for New Zealand Building Code External Moisture Clause E2, Department of Building and Housing, Third edition May 2008, incorporating amendments 1 to 4.
- New Zealand Building Code Handbook and Approved Documents, Building industry Authority, 1992.
- The Building Regulations 1992, up to, and including October 2004 Amendment.

Concluding statement

21.1 In the opinion of BEAL, the Plastercrete AAC Wall Panel 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 Lowenhouse Ltd, and is valid until further notification, subject to the conditions of this Appraisal.

Conditions of Appraisal

1. This Appraisal Certificate :
 - A) Relates only to the Plastercrete AAC Panel Wall System 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 BEAL
2. The Appraisal Certificate holder continues to meet the quality requirements of the Lowenhouse Ltd's Building Product Quality Plan and has the plan revalidated by BEAL on an annual basis.
3. Lowenhouse Ltd, shall notify BEAL and obtain approval of any changes in product specification or quality assurance prior to product being marketed including any trade literature, web site info or the like.
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
5. BEAL's verification of the building product or system complying with one or more 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.

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
Updated July 2017

