



**BRANZ Appraised**  
Appraisal No. 1111 [2020]

**PETRAPANEL® AAC  
CLADDING SYSTEM**

**Appraisal No. 1111 [2020]**



## BRANZ Appraisals

Technical Assessments of  
products for building and  
construction.



PETROS HOLDINGS LTD

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**BRANZ**

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## Product

- 1.1 The Petrapanel® AAC Cladding System is a cavity-based 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 (Petrapanels) fixed over polystyrene battens to form a nominal 20 mm cavity. The coating system consists of a minimum 5 mm thickness of fibreglass mesh reinforced renders and cementitious mineral finishing renders applied to the AAC panels. The render system is finished with an exterior paint system. The plaster finish can be applied to give different texture appearances.

## Scope

- 2.1 The Petrapanel® AAC Cladding System has been appraised as an external wall cladding system for buildings within the following scope:
  - the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1; and,
  - with a risk score of 0-20, calculated in accordance with NZBC Acceptable Solution E2/AS1, Table 2; and,
  - situated in NZS 3604 Wind Zones up to, and including Extra High.
- 2.2 The Petrapanel® AAC Cladding System has also been appraised for weathertightness and structural wind loading when used as an external wall cladding for buildings within the following scope:
  - the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1 with regards to building height and floor plan area; and,
  - constructed with timber framing complying with the NZBC; and,
  - situated in specific design wind pressures up to a maximum design differential ultimate limit state (ULS) of 2.5 kPa.
- 2.3 The Petrapanel® AAC Cladding System must only be installed on vertical surfaces (except for tops of parapets, sills and balustrades, which must have a minimum 10° slope and be waterproofed in accordance with the Technical Literature).
- 2.4 The system is appraised for use with aluminium window and door joinery or uPVC joinery with a valid BRANZ Appraisal. In all instances, joinery units must have vertical jambs and horizontal heads and sills. (The Appraisal of the Petrapanel® AAC Cladding System relies on the joinery meeting the requirements of NZS 4211 for the relevant Wind Zone or wind pressure.)
- 2.5 Installation of components and accessories supplied by Petros Holdings Ltd must be carried out only by Petros Holdings Ltd approved applicators.

## Building Regulations

### 3.1 New Zealand Building Code [NZBC]

In the opinion of BRANZ, Petrapanel® AAC Cladding System, if used, designed, installed and maintained in accordance with the statements and conditions of the Appraisal, will meet the following provisions of the NZBC:

**Clause B1 STRUCTURE:** Performance B1.3.1, B1.3.2 and B1.3.4. The Petrapanel® AAC Cladding System 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 10.1 - 10.4.

**Clause B2 DURABILITY:** Performance B2.3.1 (b), 15 years, B2.3.1 (c), 5 years, and B2.3.2. The Petrapanel® AAC Cladding System meets these requirements. See Paragraphs 11.1 - 11.3.

**Clause E2 EXTERNAL MOISTURE:** Performance E2.3.2. The Petrapanel® AAC Cladding System meets this requirement. See Paragraphs 13.1 - 13.5.

**Clause F2 HAZARDOUS BUILDING MATERIALS:** Performance F2.3.1. The Petrapanel® AAC Cladding System meets this requirement and will not present a health hazard to people.

## Technical Specifications

4.1 System components and accessories supplied by Petros Holdings Ltd are as follows;

### Cavity Battens

- Cavity Battens are manufactured from high density (Class H) Expanded polystyrene (EPS). The battens are 20 mm thick by 50 mm wide supplied in 1200 mm lengths.

### Petrapanel®

- Petrapanel® AAC panels are 50 mm or 75 mm thick, manufactured from autoclaved aerated concrete with an approximate density of 25 kg/m<sup>2</sup> at 50 mm or 37.5 kg/m<sup>2</sup> at 75 mm. 50mm thick Petrapanel® measures 2200mm long x 600mm high. 75mm thick Petrapanel® measures 1800mm long x 600mm high.

### Plasters

- MPT Bondcoat 100% mineral cementitious glue coat/keying coat with high vapour permeability and adhesion. The fibreglass mesh is embedded into this product. Supplied in 20Kg bags. Suitable for trowel or pump application.
- MPT Stonecoat (optional) 100% mineral cementitious all-purpose high-build (low cost) render. Supplied in 20 Kg bags. Suitable for trowel or pump application.
- MPT Skimcoat 100% mineral cementitious all-purpose skimming/levelling render. Supplied in 20 Kg bags. Suitable for trowel or pump application.
- MPT Floatcoat 100% mineral cementitious finishing render specifically formulated to produce a tight grainy texture as a 'finish coat'. Supplied in 20 Kg bags. Suitable for trowel or pump application.
- MPT Adobecoat (Optional) 100% mineral cementitious finishing render specifically formulated to produce a fine sponge finish or undulating finish as an alternative to the use of Floatcoat. Supplied in 20 Kg bags. Suitable for trowel or pump application.

### Paint System Specification

- Mortar compatible efflorescence-blocking primer (aka 'Lime Stop') (first coat).- 100% acrylic water-based primer/sealer formulated for cementitious surfaces to prevent the onset of white salts and efflorescence.
- High Build or Elastomeric paint (second and third coats)  
Elastomeric - 2 coats of water based acrylic reinforced, waterproof and extremely flexible finishing coats. Tinted to selected colours equal to or exceeding LRV of 40%. Application of each coat should be to the thickness specified by the paint manufacturer for use over plaster systems.

High-build - 2 coats of water based high-build acrylic finishing coats applied to the thickness specified by the paint manufacturer for use over plaster systems. Tinted to selected colours equal to or exceeding LVR of 40%.

The paint manufacturers' instructions must be followed at all times for application of the paint finish. The plaster renders must have a minimum of 2-3 days to cure and be dry before application of the primer coat.

#### Accessories

- MS 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.
  - MPT CBC - Cavity bottom cap punched
  - MPT UC50/UC50-PM - 50mm wide uPVC U-channel [or pre-meshed U-channel] to cap the lower edge of the Petrapanel®
  - MPT UC75/UC75-PM - 75 mm wide uPVC U-channel [or pre-meshed U-Channel\_ to cap the lower edge of the Petrapanel®.
  - PVC Expansion Joint Extrusion
  - MPT AM20 pre-meshed PVC Corner
  - MPT USF Universal Sill Flashing
  - Fibreglass hard mesh rolls at 1200mm wide x 50m long
  - Fibreglass soft mesh rolls in various widths x 50m long.
  - MPT ABS Cavity Vents
  - MPT UHF Universal Head Flashing
  - MPT LCS and RCS Left and Right hand uPVC Corner Soakers
  - MPT Panel Bond cementitious panel adhesive, or any BRANZ Appraised or otherwise compliant panel adhesive approved by Petros Holdings Ltd.
  - Zinc-based corrosion-resistant paint to protect exposed reinforcing mesh.
  - MPT Amberseal - Surface equalising, vapour permeable, penetrating sealer
  - AAC sheet fixings [timber frame] - 100mm x 6.3mm 304 stainless steel bugle-head screws.
  - Adhesive - AAC compatible adhesive for gluing uPVC components to the AAC sheets. Must be BRANZ Appraised or otherwise approved for the purpose by Petros Holdings Limited.
- 4.2 Accessories used with the system which are supplied by the applicator are:
- Waterproof membrane tapes - tapes covered by a valid BRANZ Appraisal or otherwise approved, for use as waterproofing membranes over tops of plastered parapets, balustrades, fixing blocks and the like.
- 4.3 Accessories used with the system which are supplied by the building contractor are:
- Flexible wall underlay - building paper complying with NZBC Acceptable Solution E2/AS1 Table 23, or breather-type membranes covered by a valid BRANZ Appraisal for use as wall underlays.
  - Flexible wall underlay support - polypropylene strap, 75 mm galvanised mesh, galvanised wire, or additional vertical battens for securing the flexible building underlay in place and preventing bulging of the bulk insulation into the drainage cavity. [Note: mesh and wire galvanising must comply with AS/NZS 4534.]
  - Rigid wall underlay - Plywood or fibre cement sheet complying with NZBC Acceptable Solution E2/AS1 Table 23, or rigid sheathing covered by a valid BRANZ Appraisal for use as rigid air barrier systems.
  - Flexible sill and jamb flashing tapes - flexible flashing tapes complying with NZBC Acceptable Solution E2/AS1, Paragraph 4.3.11, or flexible flashing tapes covered by a valid BRANZ Appraisal for use around window and door joinery openings.
  - Window and door trim cavity airseal - air seals complying with NZBC Acceptable Solution E2/AS1, Paragraph 9.1.6, or self-expanding, moisture cure polyurethane foam air seals covered by a valid BRANZ Appraisal suitable for use around window, door and other wall penetration openings.
  - Joinery head flashings - proprietary flashing to the joinery.
  - PEF Backing Rod



## Handling and Storage

- 5.1 Handling and storage of all materials supplied by Petros Holdings Ltd or the Petros Holdings Approved Applicator, whether on or off site, is under the control of the Petros Holdings Approved Applicator. Dry storage must be provided on site for the Petrapanel®, fibreglass mesh and bags of render. EPS battens, 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 site, are 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 Petrapanel® AAC Cladding 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

### Framing

#### Timber Treatment

- 7.1 Timber wall framing behind the Petrapanel® AAC Cladding System must be treated as required by NZBC Acceptable Solution B2/AS1.

#### Timber Framing

- 7.2 Timber framing must comply with NZS 3604 or be to a specific design in accordance with NZS 3603 and AS/NZS 1170. Where specific design is required, the framing must be of at least equivalent stiffness to the framing provisions of NZS 3604. In all cases studs must be at maximum 600 mm centres. Dwargs must be fitted flush between the studs at maximum 800 mm centres.
- 7.3 For specifically designed timber framed buildings situated in Wind Zones above NZS 3604 defined Extra High, there must be a minimum timber framing size of 90 x 45 mm, and a minimum timber grade of SG8.
- 7.4 Timber framing must have a maximum moisture content of 24% at the time of the cladding application. *[Note: If Petrapanel® are fixed to framing with a moisture content of greater than 24% problems may occur at a later date due to excessive timber shrinkage.]*

#### Petrapanel® Setout

- 7.5 Petrapanels are installed horizontally. Vertical panel edges may be jointed on-stud or off-stud.
- 7.6 Horizontal Petrapanel® panel edges do not require edge fixing. Vertical panel joints must be staggered for each row. Petrapanel® must be supported at fixing locations with vertical cavity battens or cavity spacers in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.1.8.2 [f]. When Petrapanel® is installed with an open cavity at the base of the wall, the Petrapanel® must hang 50 mm below the supporting framing. When Petrapanel® is installed on a rebated foundation step, cavity vents must be fitted at the base of the wall in compliance with NZBC Acceptable Solution E2/AS1 para. 9.1.8.3[b].

### General

- 8.1 When the Petrapanel® AAC Cladding System is used for specifically designed buildings up to design differential 2.5 kPa ULS wind pressure, only the weathertightness aspects of the cladding and maximum framing centres and Petrapanel® panel fixing centres are within the scope of this Appraisal. All other aspects of the building need to be specifically designed and are outside the scope of this Appraisal.



- 8.2 Punchings in the cavity base closer and U-Channel each provide a minimum ventilation opening area of 1000 mm<sup>2</sup> per lineal metre of wall in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.1.8.3 [b].
- 8.3 The ground clearance to finished floor levels as set out in NZS 3604 must be adhered to at all times. At ground level, paved surfaces, such as footpaths, must be kept clear of the bottom edge of the cladding system by a minimum of 100 mm, and unpaved surfaces by 175 mm in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Table 18.
- 8.4 At balcony, deck or roof/wall junctions, the bottom edge of the Petrapanel® AAC Cladding System must be kept clear of any adjacent surface, or above the top surface of any adjacent roof flashing by a minimum of 35 mm in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.1.3.
- 8.5 All external walls of buildings must have barriers to airflow in the form of interior linings with all joints stopped for Wind Zones up to and including Very High, and rigid underlays for buildings in the Extra High Wind Zone and specifically designed buildings up to 2.5 kPa design differential ULS wind pressure. Unlined gables and walls must incorporate a rigid sheathing or an air barrier which meets the requirements of NZBC Acceptable Solution E2/AS1, Table 23. For attached garages, wall underlays must be selected in accordance with NZBC Acceptable Solution E2/AS1, Paragraph 9.1.3.4. Where rigid underlays are used over timber framing, the fixing lengths may need to be increased and/or the fixings may need to be embedded below the panel surface (no more than 12mm), to maintain a minimum 30 mm penetration into the wall frame.
- 8.6 Where penetrations through the Petrapanel® AAC Cladding System are wider than the cavity batten spacing, allowance must be made for airflow between adjacent cavities. A minimum 10 mm gap must be left between the bottom of the vertical cavity batten and the flashing to the opening.
- 8.7 Where the system abuts other cladding systems, designers must detail the junction to meet their own requirements and the performance requirements of the NZBC. The Technical Literature provides some guidance. Details not included within the Technical Literature have not been assessed and are outside the scope of this Appraisal.

### Control Joints

- 9.1 Control joints where Petrapanel® are used must be constructed in accordance with the Technical Literature and be provided as follows:
- Horizontal control joints – at maximum 6 m centres and at inter-storey floor levels where unseasoned timber floor joists are used.
  - Vertical control joints – at maximum 8 m centres; aligned with any control joint in the structural framing, or where the system abuts different cladding types.

*[Note: Horizontal and vertical control joints must be located to ensure the panel is adequately supported on both sides of the control joint. 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 are outside the scope of this Appraisal and are the responsibility of the designer – see Paragraph 8.7.]*

### Inter-storey Junctions

- 9.2 Inter-storey drained joints must be constructed in accordance with the Technical Literature. Inter-storey joints must be provided to limit continuous cavities to the lesser of 2-storeys or 7 metres in height, in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.1.9.4 [b].

### Structure

#### Mass

- 10.1 The mass of the Petrapanel® Panel Cladding System is approximately 32 kg/m<sup>2</sup> when 50 mm thick panel is used, and 44.5kg/m<sup>2</sup> when 75 mm thick panel is used. 50 mm is therefore considered a light weight wall cladding in terms of NZS 3604.

### Impact Resistance

- 10.2 The system has adequate resistance to impact loads likely to be encountered in normal residential use. The likelihood of impact damage to the system when used in light commercial situations should be considered at the design stage, and appropriate protection such as the installation of bollards and barriers should be considered for vulnerable areas.

### Wind Zones

- 10.3 The Petrapanel® AAC Cladding System is suitable for use in all Wind Zones of NZS 3604, up to, and including Extra High where buildings are designed to meet the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 1.1, or up to design differential 2.5 kPa ULS wind pressure when the buildings are specifically designed.

### Petrapanel® Panel Fixing – Timber Frame with 20 mm Cavity Battens

- 10.4 For installations in NZS 3604 Wind Zones up to, and including, Extra High and specific design wind pressures up to and including design differential 2.5 kPa ULS, Petrapanel® must be fixed through the 20 mm cavity battens to the wall framing at maximum 300 mm horizontal centres with 6.3 mm steel bugle-headed grade 304 stainless steel screws 100 - 105 mm long [for 50mm panel with 20 mm cavity battens], or 125 - 130 mm long [for 75 mm panel with 20 mm cavity battens]. The fixings must be positioned 150 mm up from the bottom edge and 150 mm down from the top edge of the panel giving an overall fixing layout of 300 mm centres vertically.

### Durability

- 11.1 The Petrapanel® AAC Cladding System meets the performance requirements of NZBC Clause B2.3.1 [b], 15 years for the cladding system and render finish, and the performance requirements of NZBC Clause B2.3.1 [c], 5 years for the exterior paint system.

### Serviceable Life

- 11.2 The Petrapanel® AAC Cladding 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 Petrapanel®, fixings and render are continuously protected by a weathertight coating and remain dry in service.
- 11.3 Microclimatic conditions, including geothermal hot spots, industrial contamination and corrosive atmospheres, and contamination from agricultural chemicals or fertilisers can convert mildly corrosive atmosphere into aggressive environments for fasteners. The fixing of Petrapanel® in areas subject to microclimatic conditions requires specific design in accordance with NZS 3604 Paragraph 4.2.4, and is outside the scope of this Appraisal.

### Maintenance

- 12.1 Regular maintenance is essential to ensure the performance requirements of the NZBC are continually met and to ensure the maximum serviceability of the system.
- 12.2 Regular cleaning [at least annually] of the paint coating is required to remove grime, dirt and organic growth and to maximise the life and appearance of the coating. Grime may be removed by brushing with a soft brush, warm water and detergent. Paint systems must be recoated at approximately 5-8 yearly intervals in accordance with the paint manufacturer's instructions.
- 12.3 Annual inspections must be made to ensure that all aspects of the cladding system, including the coating system, renders, flashings and any sealed joints remain in a weatherproof condition. Any cracks, damaged areas or areas showing signs of deterioration which could allow water ingress, must be repaired immediately. The Petrapanel® AAC Cladding System must be repaired in accordance with the instructions of Petros Holdings Limited.
- 12.4 Minimum ground clearances as set out in this Appraisal and the Technical Literature must be maintained at all times during the life of the system. *[Failure to adhere to the minimum ground clearances given in this Appraisal and the Technical Literature may adversely affect the long term durability of the Petrapanel® AAC Cladding System.]*

## Fire Affecting Areas beyond the Fire Source

### Control of Internal Fire Smoke Spread

- 13.1 The Petrapanel® AAC Cladding System includes EPS Battens (combustible insulant), therefore the interior surface finish must achieve a Group Number of not more than 3 as per NZBC Acceptable Solution C/AS1 Section 4.3 and C/AS2 Paragraph 4.17.2. The Petrapanel® AAC Cladding System will not meet this requirement alone and will need to be enclosed by an interior surface lining so that the completed system achieves a Group Number of not more than 3.

### Vertical Fire Spread

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

### Horizontal Fire Spread

- 13.3 The Petrapanel® AAC Cladding System has a peak heat release rate of less than 100 kW/m<sup>2</sup> and a total heat released of less than 25 MJ/m<sup>2</sup>. Testing was carried out as per Paragraph 5.4 of NZBC Acceptable Solution C/AS1 and Paragraph 5.8.1 of NZBC Acceptable Solution C/AS2, achieving a Type A performance. The Petrapanel® AAC Cladding System can therefore be used within 1m of the relevant boundary.
- 13.4 Refer to NZBC Acceptable Solutions C/AS1 and C/AS2 and Verification Method C/VM2 for fire resistance rating and control of external fire spread requirements for external walls.

## External Moisture

- 14.1 The Petrapanel® AAC Cladding System, when installed in accordance with this Appraisal and the Technical Literature, prevents the penetration of moisture that could cause undue dampness or damage to building elements.
- 14.2 The cavity must be sealed off from the roof and sub-floor space to meet the performance requirements of Clause E2.3.5.
- 14.3 The Petrapanel® AAC Cladding System allows excess moisture present at the completion of construction to be dissipated without permanent damage to building elements to meet the performance requirements of Clause E2.3.6.
- 14.4 The details given in the Technical Literature for weather sealing are based on the design principle of having a first and second line of defence against moisture entry for all joints, penetrations and junctions. The ingress of moisture must be excluded by detailing joinery and wall interfaces as shown in the Technical Literature. Weathertightness details that are developed by the designer are outside the scope of this Appraisal and are the responsibility of the designer for compliance with the NZBC.
- 14.5 The use of the Petrapanel® AAC Cladding System where there is a designed cavity drainage path for moisture that penetrates the cladding, does not reduce the requirement for junctions, penetrations, etc to remain weather resistant.

## Internal Moisture

- 15.1 The Petrapanel® AAC Cladding System alone does not meet NZBC Acceptable Solution E3/AS1, Paragraph 1.1.1 [a]. Buildings must be constructed with an adequate combination of thermal resistance and ventilation, and space temperature must be provided to all habitable spaces, bathrooms, laundries and other spaces where moisture may be generated or may accumulate.
- 15.2 The Petrapanel® AAC Cladding System is not a barrier to the passage of water vapour. When correctly installed it will not create or increase the risk of moisture damage resulting from condensation.

## Installation Information

### Installation Skill Level Requirements

- 16.1 All design and building work must be carried out in accordance with the Petrapanel® Technical Literature and this Appraisal. All building work must be undertaken by Petros Holdings Ltd approved applicators. Where the work involves Restricted Building Work this must also be completed by, or under the supervision of, a Licensed Building Practitioner [LBP] with the relevant License class.

## System Installation

### Wall Underlay and Flexible Sill and Jamb Tape Installation

- 17.1 The selected wall underlay and flexible sill and jamb tape system must be installed by the building contractor in accordance with the underlay and tape manufacturer's instructions prior to the installation of the cavity spacers or cavity battens and the rest of the Petrapanel® AAC Cladding System. Flexible wall underlay must be installed horizontally and be continuous around corners. Underlay must be lapped 75 mm minimum at horizontal joints and 150 mm minimum over studs at vertical joints. Generic rigid wall underlay must be installed in accordance with NZBC Acceptable Solution E2/AS1 and be overlaid with a flexible wall underlay. Proprietary systems shall be installed in accordance with the manufacturer's instructions. Particular attention must be paid to the installation of the wall underlay and sill and jamb tapes around window and door openings to ensure a continuous seal is achieved and all exposed wall framing in the opening is protected.
- 17.2 Where studs are at greater than 450 mm centres and a flexible wall underlay is being used, a wall underlay support must be installed over the underlay at maximum 300 mm centres horizontally.

### Aluminium Joinery Installation

- 17.3 Aluminium joinery must be installed by the building contractor in accordance with the Technical Literature. A 7.5–10 mm nominal gap must be left between the joinery reveal and the wall framing so a PEF rod and air seal can be installed after the joinery has been secured in place. The joinery must be spaced 22–23 mm off of the wall frame to allow the Petrapanel® AAC Cladding System flashings to be installed.

### Petrapanel® AAC Cladding System

- 17.4 The system must be installed in accordance with the Technical Literature by Petros Holdings Limited approved applicators.
- 17.5 The Petrapanel® AAC Cladding System render system must only be applied when the air and substrate temperature is within the range of +5°C to +30°C.
- 17.6 Prior to application of the MPT Bondcoat render, the Petrapanel® must be treated with a coat of MPT Amberseal to all areas that will receive plaster renders. This is a surface-equalising, vapour-permeable, penetrating sealer designed to prevent excessive moisture draw into the AAC panel during the curing process.

### Inspections

- 17.7 The Technical Literature must be referred to during the inspection of Petrapanel® AAC Cladding System installations.

### Health and Safety

- 18.1 Cutting of Petrapanel® must be carried out in well ventilated areas, and a dust mask and eye protection must be worn.
- 18.2 When power tools are used for cutting, grinding or forming holes, health and safety measures must be observed because of the amount of dust generated.
- 18.3 Safe use and handling procedures for the components that make up the Petrapanel® AAC Cladding 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

19.1 The following testing has been undertaken by BRANZ:

- BRANZ expert opinion on NZBC clause E2 code compliance for the Petrapanel® AAC Cladding System was based on testing and evaluation of all details within the scope and as stated within this Appraisal.
- Wind face load and small-scale fastener withdrawal testing for the Petrapanel® AAC Cladding System was completed by BRANZ. BRANZ determined design wind suction pressures, and by comparing these with the NZS 3604 design wind speeds and AS/NZS 1170 pressure coefficients, the fixing requirements were determined for timber framed walls.
- In-plane shear testing of the Petrapanel® AAC Cladding System to determine the system's ability to resist its self-weight.
- A racking test was previously completed to examine the performance of AAC panels when the system was subjected to both serviceability level and ultimate level seismic racking deflections. The render system did not crack or show signs of damage for the entire test program. These tests can be used to verify the performance of the Petrapanel® AAC Cladding System
- Durability testing of the Petrapanel® to verify the durability of the system. The testing included compressive strength, length change during moisture movement, corrosion protection of steel reinforcement and mineralogy by x-ray diffraction crystallography.

### Other Investigations

- 20.1 Structural and durability opinions have been provided by BRANZ technical experts.
- 20.2 Site visits of Petrapanel® AAC Cladding System installations have been carried out by BRANZ to assess the practicability of installation, and to examine completed installations.
- 20.3 The Technical Literature for the Petrapanel® AAC Cladding System has been examined by BRANZ and found to be satisfactory.

### Quality

- 21.1 The manufacture of the renders and paints has not been examined by BRANZ, but details regarding the quality and composition of the materials used were obtained by BRANZ and found to be satisfactory.
- 21.2 The manufacture of the Petrapanel® has been examined by an agent of 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.
- 21.3 The quality of materials, components and accessories supplied by Petros Holdings Ltd are the responsibility of Petros Holdings Ltd.
- 21.4 Quality on site is the responsibility of Petros Holdings Ltd approved applicators.
- 21.5 Designers are responsible for the building design, and building contractors are responsible for the quality of installation of framing systems and joinery, wall underlays, flashing tapes, air seals and joinery head flashings in accordance with Petros Holdings Ltd's instructions.
- 21.6 Building owners are responsible for the maintenance of the Petrapanel® AAC Cladding System in accordance with Petros Holdings Ltd's instructions.



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28 February 2020

PETRAPANEL® AAC CLADDING  
SYSTEM



### Sources of Information

- AS 3566 – 2002 Self-drilling screws for the building and construction industries.
- AS/NZS 1170: 2002 Structural design actions.
- NZS 3602: 2003 Timber and wood-based products for use in building.
- NZS 3603: 1993 Timber Structures Standard.
- NZS 3604: 2011 Timber-framed buildings.
- NZS 4211: 2008 Specification for performance of windows.
- Ministry of Business, Innovation and Employment Record of amendments - Acceptable Solutions, Verification Methods and handbooks.
- The Building Regulations 1992.



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28 February 2020

PETRAPANEL® AAC CLADDING  
SYSTEM



In the opinion of BRANZ, **Petrapanel® AAC Cladding 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 **Petros Holdings 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. **Petros Holdings 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 **Petros Holdings 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 **Petros Holdings Ltd** or any third party.

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For BRANZ

**Chelydra Percy**

Chief Executive

Date of Issue

28 February 2020