



BRANZ Appraised
Appraisal No. 1211 [2022]

AXON™ PANEL AND EASYLAP™ PANEL CLADDING

Appraisal No. 1211 [2022]
Amended 13 October 2022



BRANZ Appraisals

Technical Assessments of
products for building and
construction.



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Product

- 1.1 The Axon™ Panel and EasyLap™ Panel Cladding is a cavity-based or direct-fixed, fibre cement sheet wall cladding. It is designed to be used as an external wall cladding for residential and light commercial type buildings where domestic construction techniques are used.

Scope

- 2.1 The Axon™ Panel and EasyLap™ Panel Cladding has been appraised as a cavity-based, external wall cladding 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 Axon™ Panel and EasyLap™ Panel Cladding has also been appraised as a direct-fixed, external wall cladding for buildings within the following scope:
 - the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1; and,
 - with a risk score of 0-6, calculated in accordance with NZBC Acceptable Solution E2/AS1, Table 2; and,
 - situated in NZS 3604 Wind Zones up to, and including, Very High.
- 2.3 The Axon™ Panel and EasyLap™ Panel Cladding when fixed over a cavity has also been appraised for weathertightness and structural wind loading when used as an external vertically fixed 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 subject to specific engineering design (SED); and,
 - situated in specific design wind pressures up to a maximum design differential ultimate limit state (ULS) of 2.5 kPa.
- 2.4 The Axon™ Panel and EasyLap™ Panel Cladding must only be installed on vertical surfaces.
- 2.5 The Axon™ Panel and EasyLap™ Panel Cladding has been appraised for use with aluminium window and door joinery that is installed with vertical jambs and horizontal heads and sills. *[Note: The Appraisal of the Axon™ Panel and EasyLap™ Panel Cladding relies on the joinery meeting the requirements of NZS 4211 for the relevant Wind Zone.]*



Building Regulations

New Zealand Building Code (NZBC)

3.1 In the opinion of BRANZ, the Axon™ Panel and EasyLap™ Panel Cladding, if designed, used, installed and maintained in accordance with the statements and conditions of this Appraisal, will meet the following provisions of the NZBC:

Clause B1 STRUCTURE: Performance B1.3.1, B1.3.2 and B1.3.4. The Axon™ Panel and EasyLap™ Panel Cladding meets the requirements for loads arising from self-weight, wind, impact and creep [i.e. B1.3.3 (a), (h), (j) and (q)]. See Paragraphs 9.1-9.4.

Clause B2 DURABILITY: Performance B2.3.1 (b) 15 years and B2.3.2. The Axon™ Panel and EasyLap™ Panel Cladding meets these requirements. See Paragraphs 10.1-10.4.

Clause E2 EXTERNAL MOISTURE: Performance E2.3.2. The Axon™ Panel and EasyLap™ Panel Cladding meets this requirement. See Paragraphs 14.1-14.5.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Axon™ Panel and EasyLap™ Panel Cladding meets this requirement.

Technical Specification

4.1 System components and accessories for the Axon™ Panel and EasyLap™ Panel Cladding, which are supplied by James Hardie New Zealand Limited are:

Axon™ Panel

- Axon™ Panels are 9 mm thick fibre cement panels, manufactured from a water-resistant cellulose cement formulation. They are manufactured to conform to the requirements of AS/NZS 2908.2, in accordance with NZBC Acceptable Solution E2/AS1, Paragraph 9.7.2. The panels are formed, cut to length and then cured by high-pressure autoclaving.
- Axon™ Panel 133 Smooth has grooves on the face panel nominal 10 mm wide by 2.25 mm deep, spaced at 133 mm. The panels are branded 'Axon™' at regular intervals on the back face and are available in sizes of 1,200 mm wide and 2,450, 2,750 and 3,000 mm long.
- Axon™ Panel 133 Grained has grooves on the face panel nominal 10 mm wide by 2.25 mm deep, spaced at 133 mm. Between the grooves is a look of traditional wood-grain texture. The panels are branded 'Axon™' at regular intervals on the back face and are available in sizes of 1,200 mm wide and 3,000 mm long.
- Axon™ Panel 400 Smooth has grooves on the face panel nominal 10 mm wide by 2.25 mm deep, spaced at 400 mm. The panels are branded 'Axon™' at regular intervals on the back face and are available in sizes of 1,200 mm wide and 2,450, 2,750 and 3,000 mm long.

EasyLap™ Panel

- EasyLap™ Panels are manufactured to conform to the requirements of AS/NZS 2908.2, in accordance with NZBC Acceptable Solution E2/AS1, Paragraph 9.7.2.
- EasyLap™ Panels are 9 mm thick fibre cement panels, manufactured from a water-resistant cellulose cement formulation. The panels are formed, cut to length and then cured by high-pressure autoclaving. They are produced in flat, smooth surfaced panel material form, and are branded 'EasyLap™' at regular intervals on the back face of the panel. EasyLap™ Panels feature a lapped joint profile to both long edges. Panels are available in sizes of 1,200 mm wide and 2,450 and 3,000 mm long.

Accessories when using CLD™ Structural Cavity Battens

- CLD™ Structural Cavity Batten - 19 mm thick fibre cement cavity batten installed over RAB™ Board or a flexible underlay. They are 19 mm thick by 70 mm wide, 2,450 mm long.
- CLD™ batten corner flashing aluminium - used at internal corner sealant joints at floor joist level.
- Annular threaded nail - 25 x 2.5 mm hot-dip galvanised or stainless steel nail.

Accessories when using timber cavity battens

- **Inseal® 3259 tape** - black, compressible, medium density, polyvinyl chloride (PVC) closed cell foam. The foam is coated on one side with pressure sensitive acrylic adhesive and the other face is covered by a silicone release paper. The tape is 1.5 mm thick and is supplied in rolls 18 and 80 mm wide, and 50 m long.
- **uPVC corner underflashing** - a corner mould to form the internal corner.

Accessories when using CLD™ Structural Cavity Battens or timber cavity battens

- **Hardie™ 9 mm panel aluminium external box corner** - a box corner mould to form the external joints, etch-primed and available in 2,450, 2,750, 3,000 and 4,000 mm lengths.
- **Hardie™ 9 mm panel aluminium horizontal 'h' mould** - a horizontal flashing to flash the horizontal joints, etch-primed and available in 3,000 mm lengths.
- **Aluminium 'h' mould jointer** - a jointer to cover the butt joint of 'h' mould. Available in 100 mm lengths.
- **Cavity vent strip** - uPVC, available in 3,000 mm lengths.

4.2 Accessories supplied by the building contractor are:

Accessories when using CLD™ Structural Cavity Battens or timber cavity battens

- **Flexible wall underlay** - building paper complying with NZBC Acceptable Solution E2/AS1, Table 23, or breather-type membranes covered by a valid BRANZ Appraisal or CodeMark 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 wall 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** - HomeRAB™/RAB™ Board, plywood or fibre cement panel complying with NZBC Acceptable Solution E2/AS1, Table 23, or rigid sheathing covered by a valid BRANZ Appraisal or CodeMark for use as rigid air barrier systems.
- **CLD™ Structural Cavity Batten Fixings** - 65 mm x 2.8 mm RoundDrive ring shank nail hot-dip galvanised/stainless steel.
- **Horizontal drained joint flashing.**
- **Joinery head flashings** - folded from aluminium or galvanised steel to suit the window or door trim opening. Refer to NZS 3604, Section 4 and NZBC Acceptable Solution E2/AS1, Table 20 for durability requirements.
- **Window and door trim cavity air seal** - air seals and PEF rod 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 for use around window, door and other wall penetration openings.
- **Flexible sill and jamb flashing tape** - 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.
- **Flexible sealant** - sealant complying with NZBC Acceptable Solution E2/AS1, or sealant covered by a valid BRANZ Appraisal or CodeMark for use as a weather sealing sealant for exterior use.

Accessories when using CLD™ Structural Cavity Battens

- **C-25 brad nail** - 25 mm stainless steel brad nail.
- **ND 50 brad nail** - 50 mm stainless steel brad nail.
- **Annular threaded nail** - 25 x 2.5 mm stainless steel nail.
- **25 mm x 8-10 g countersunk screws** - Class 3/4 or stainless steel.

[Note: Screws must be AS 3566 Corrosion Class 4 in NZS 3604 defined Corrosion Zones B and C, and Grade 304 stainless steel in Corrosion Zone D. Hot-dip galvanising must comply with AS/NZS 4680.]

- **Adhesive sealant** - Bostik Seal N' Flex 1 or Sika 11FC.
- **Damp Proof Course (DPC)** - DPC complying with AS/NZS 2904.

Accessories when over timber cavity batten

- **Cavity battens** - nominal 50 mm wide by 25 mm thick (minimum finished size of 45 mm wide by 18 mm thick) timber cavity battens, treated to Hazard Class H3.1.
- **Cavity batten temporary fixings** - 40 x 2.8 mm fibre cement, hot-dip galvanised Hardie™Flex nails.
- **Axon™ Panel or EasyLap™ Panel fixings** - 60 x 3.15 mm and 75 x 3.15 mm fibre cement, hot-dip galvanised Hardie™ Flex nails or stainless steel ring shank Hardie™ Flex nails.

Finishing System Specification

- 4.3 Paint systems, where elected to be applied by James Hardie New Zealand Limited, are selected in consultation with the designer and building contractor. Finishing systems applied by James Hardie New Zealand Limited have not been assessed by BRANZ, and are therefore outside the scope of this Appraisal.
- 4.4 All exposed faces, including top edges at sills and bottom edges of Axon™ Panels or EasyLap™ Panels, trims and accessories must be finished with an acrylic exterior paint system complying with any of Parts 7, 8, 9 or 10 of AS 3730. Finishing must be carried out within 90 days of installation to protect the Axon™ Panels or EasyLap™ Panels and give the desired finish colour to the exterior walls.
- 4.5 All cut edges of Axon™ Panel or EasyLap™ Panels are to be sealed on-site with an acrylic sealer suitable for use with the selected proprietary acrylic paint system as listed in the Technical Literature for the Axon™ Panel and EasyLap™ Panel Cladding.

Handling and Storage

- 5.1 Handling and storage of all materials supplied by James Hardie New Zealand Limited or the building contractor, whether on-site or off-site, is under the control of the building contractor. Axon™ Panels and EasyLap™ Panels are packed on pallets and must be kept dry during transport. The panels must be horizontally stacked on a flat surface and must always be sufficiently supported so that they do not sag. They must be kept dry at all times, either by storing under cover or providing water covers to the stack, so they are stored in a dry ventilated space. Axon™ Panels and EasyLap™ Panels must always be lifted from a stack by two people and then be carried on edge.
- 5.2 Accessories must be stored so they are kept clean, dry and undamaged. All accessories must be used within the maximum storage period recommended by the manufacturer.

Technical Literature

- 6.1 This Appraisal must be read in conjunction with:
- EasyLap™ Panel Technical Specification, dated August 2020.
 - Axon™ Panel EasyLap™ Panel Timber Cavity Batten Technical Specification, dated February 2022.
 - Axon™ Panel EasyLap™ Panel Direct Fixed and Fixed to CLD™ Structural Cavity Batten Technical Specification, dated February 2022.
- 6.2 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 Axon™ Panel and EasyLap™ Panel Cladding must be treated as required by NZBC Acceptable Solution B2/AS1.

Timber Framing

- 7.2 Timber framing must comply with NZS 3604 for buildings or parts of buildings within the scope limitations of NZS 3604. Buildings or parts of buildings outside the scope of NZS 3604 must 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 shall be at a maximum of 600 mm centres.
- 7.3 Moisture content of the timber framing must comply with NZS 3602, Table 4.

General

- 8.1 Axon™ Panels and EasyLap™ Panels are available in a variety of sheet lengths to readily accommodate installations up to 3 m in height without requiring a horizontal junction between sheets.
- 8.2 At ground level, the bottom edge of Axon™ Panel and EasyLap™ Panel Cladding must be kept clear of paved surfaces, such as footpaths, by a minimum of 100 mm and unpaved surfaces by 175 mm, in accordance with NZBC Acceptable Solution E2/AS1, Table 18. The ground clearances to finished floor levels as set out in NZS 3604 must be adhered to.
- 8.3 At balcony, deck or low pitch roof/wall junctions, the bottom edge of Axon™ Panel and EasyLap™ Panel Cladding 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 NZBC Acceptable Solution E2/AS1, Paragraph 9.1.3.
- 8.4 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. Unlined gables and walls must incorporate a rigid wall underlay 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.
- 8.5 All external walls of buildings must have barriers to airflow in the form of HomeRAB™/RAB™ Board for buildings in the Extra High Wind Zone and situated in specific design wind pressures up to 2.5 kPa where studs are a maximum of 400 mm centres.
- 8.6 Where penetrations through the Axon™ Panel and EasyLap™ Panel Cladding are wider than the cavity batten spacing, allowance must be made for airflow between adjacent cavities by leaving a minimum gap of 10 mm 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. Details not included within the Technical Literature have not been assessed and are outside the scope of this Appraisal. Such details should be discussed with James Hardie New Zealand Limited technical team for guidance.

Inter-storey Junctions

- 8.8 Inter-storey drained joints must be provided to limit continuous cavities to the lesser of 2-storeys or 7 m in height, in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.1.9.4 b).

Structure

Mass

- 9.1 The mass of the Axon™ Panel and EasyLap™ Panel Cladding, when installed on the wall, is 12.1 kg/m² at equilibrium moisture content (EMC). The cladding is therefore considered a light wall cladding in terms of NZS 3604.

Impact Resistance

- 9.2 The Axon™ Panel and EasyLap™ Panel Cladding will resist impacts likely to be encountered in normal residential use. The likelihood of impact damage to the cladding 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 provided for vulnerable areas.

Wind Zones

- 9.3 The Axon™ Panel and EasyLap™ Panel Cladding, when installed as a direct-fixed cladding, is suitable for use in all Wind Zones of NZS 3604 up to, and including, Very High where buildings are designed to meet the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 1.1.
- 9.4 The Axon™ Panel and EasyLap™ Panel Cladding, when installed over a drained cavity, 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 where buildings are subject to SED to a maximum design differential ULS of 2.5 kPa.

Durability

- 10.1 The Axon™ Panel and EasyLap™ Panel Cladding meets the performance requirements of NZBC Clause B2.3.1 (b) 15 years for the Axon™ Panels, EasyLap™ Panels and flashings, when installed in accordance with the manufacturer's instructions and when painted within 90 days of installation.

Serviceable Life

- 10.2 Axon™ Panel and EasyLap™ Panel Cladding installations are expected to have a serviceable life of at least 50 years provided that they are maintained in accordance with this Appraisal and the Technical Literature.
- 10.3 Coastal locations can be very corrosive to fasteners, especially locations within 500 m from the sea, including harbours, or 100 m from tidal estuaries and sheltered inlets, and otherwise as shown in NZS 3604, Figure 4.2. These coastal locations are defined in NZS 3604 as Zone D. It is recommended that the Axon™ Panel and EasyLap™ Panel Cladding be fixed with stainless steel fasteners in these situations.
- 10.4 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 the Axon™ Panel and EasyLap™ Panel Cladding 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

- 11.1 Regular maintenance is essential for the Axon™ Panel and EasyLap™ Panel Cladding to continue to meet the NZBC durability performance provision and to maximise the serviceable life.
- 11.2 Annual inspections must be made to ensure that all aspects of the cladding, including applied finishing systems, flashings and any sealed joints remain in a weatherproof condition. Any damaged areas or areas showing signs of deterioration which would allow water ingress must be repaired immediately. Sealant and paint coatings must be repaired in accordance with the sealant or paint coating manufacturer's instructions.



- 11.3 Regular cleaning [at least annually] of the finish 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 re-coated at approximately 7-10 yearly intervals in accordance with the paint manufacturer's instructions.
- 11.4 Minimum ground clearances as set out in this Appraisal must be maintained at all times during the life of the cladding. *[Note: 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 Axon™ Panel and EasyLap™ Panel Cladding].*

Control of External Fire Spread

Vertical Fire Spread

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

Horizontal Fire Spread

- 12.2 Axon™ Panels and EasyLap™ Panels have a peak heat release rate of less than 100 kw/m² and a total heat released of less than 25 MJ/m². 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 Axon™ Panel and EasyLap™ Panel Cladding can therefore be used within 1 m of the relevant boundary.
- 12.3 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.

Prevention of Fire Occurring

- 13.1 Separation or protection must be provided to the Axon™ Panel and EasyLap™ Panel Cladding from heat sources such as fireplaces, heating appliances and chimneys. Part 7 of NZBC Verification Method C/VM1 and Acceptable Solution C/AS1, and NZBC Acceptable Solution C/AS2 provide methods for separation and protection of combustible materials from heat sources.

External Moisture

- 14.1 The Axon™ Panel and EasyLap™ Panel Cladding, when installed in accordance with this Appraisal and the Technical Literature, will prevent 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 subfloor space to meet code compliance with NZBC Clause E2.3.5.
- 14.3 The Axon™ Panel and EasyLap™ Panel Cladding allows excess moisture present at the completion of construction to be dissipated without permanent damage to building elements to meet code compliance with NZBC Clause E2.3.6.
- 14.4 The details given in the Technical Literature for weather sealing are based on the weathertightness design principles outlined in NZBC Acceptable Solution E2/AS1. The ingress of moisture must be excluded by detailing joinery and wall interfaces as shown in the Technical Literature and the relevant provisions of NZBC Acceptable Solution E2/AS1. 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 Where a designed cavity drainage path is used in conjunction with the Axon™ Panel and EasyLap™ Panel Cladding, it does not reduce the requirements for junctions, penetrations, etc. to remain weather-resistant.

Installation Information

Installation Skill Level Requirement

- 15.1 All design and building work must be carried out in accordance with the Axon™ Panel and EasyLap™ Panel Cladding Technical Literature and this Appraisal, by competent and experienced tradespersons conversant with the Axon™ Panel and EasyLap™ Panel Cladding. Where the work involves Restricted Building Work [RBW], this must be completed by, or under the supervision of, a Licensed Building Practitioner [LBP] with the relevant Licence Class.

System Installation

Building Underlay and Flexible Sill and Jamb Tape Installation

- 16.1 Flexible underlay or rigid wall underlay and flexible sill and jamb tape systems must be installed by the building contractor, in accordance with the underlay and tape manufacturer's instructions and NZBC Acceptable Solution E2/AS1, prior to the installation of the rest of the Axon™ Panel and EasyLap™ Panel Cladding. Particular attention must be paid to the installation of the building 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.
- 16.2 In cavity installations where studs are at greater than 450 mm centres and flexible wall underlays are used, an intermediate means of restraining the flexible wall underlay and insulation from bulging into the drained cavity shall be installed. Acceptable means of achieving this are by using flexible wall underlay support as specified in Paragraph 4.2 of this Appraisal, or vertical cavity battens at 300 mm maximum centres.

Cavity Battens

- 16.3 Cavity battens must be installed over building underlay or HomeRAB™/RAB™ Board in accordance with the Technical Literature.

Installation - Cavity and Direct-Fixed

- 16.4 Prior to installing cladding, ensure all pipes and penetrations have been sealed in accordance with NZBC Acceptable Solution E2/AS1, Paragraph 9.1.9.
- 16.5 Cavity battens and cavity closers (when applicable) must be installed in accordance with the Technical Literature and NZBC Acceptable Solution E2/AS1.
- 16.6 Before the Axon™ Panel and EasyLap™ Panels are installed, the sheet set out must be checked and the internal and external corners prepared to suit the selected design option, e.g. external box corners or corner soakers. The necessary flashings, including window flashings, must be installed before commencing with sheet fixing.
- 16.7 Axon™ Panels and EasyLap™ Panels must be dry prior to installation. Excessive moisture content within the sheets may affect the overall finish and aesthetic of the cladding.
- 16.8 The Axon™ Panel and EasyLap™ Panel Cladding must be installed whilst ensuring alignment at the base of the cladding, ensuring the bottom edge of the Axon™ Panels and EasyLap™ Panels overhang the bottom plate or bearer by a minimum of 50 mm.
- 16.9 Axon™ Panels and EasyLap™ Panels may be cut on-site using power tools suitable for cutting fibre cement. Holes and cut-outs may be formed by using a hole saw. All cut edges are to be sealed with an acrylic sealer suitable for use with the selected proprietary acrylic paint system.
- 16.10 Vertical sheet joints in Axon™ Panels and EasyLap™ Panels must be made over solid support, either cavity battens in the case of a cavity installation, or over studs or vertical blocking within the wall frame in direct-fixed installations. Axon™ Panel and EasyLap™ Panel fixings must be installed as shown in the Technical Literature with regard to position from the sheet edge and installation angle. Vertical joints can be overlaid with a timber batten, in accordance with the details contained in the Technical Literature.



- 16.11 Axon™ Panels and EasyLap™ Panels must be fixed in accordance with the Technical Literature and this Appraisal. Consideration shall be given to the type of installation [direct-fixed or cavity] and any requirements for corrosion resistance. In cases where a rigid wall underlay is used, cladding fixings shall be increased in length by at least the thickness of the rigid wall underlay to ensure the fixing performance is not compromised.

Aluminium Joinery Installation

- 16.12 Aluminium joinery and associated head and sill flashings and joinery support bars must be installed by the building contractor in accordance with the Technical Literature. A 7.5 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.
- 16.13 After installing the window and door joinery, trim profiles such as planted sills and scribes may be installed in accordance with the Technical Literature to provide additional weatherproofing for the joinery/cladding junction.

Inspections

- 16.14 The Technical Literature must be referred to during the inspection of the Axon™ Panel and EasyLap™ Panel Cladding installations.

Finishing

- 16.15 The finish coating manufacturer's instructions must be followed at all times for application of the paint finish. The Axon™ Panel and EasyLap™ Panel Cladding must be clean and dry before commencing painting.

Health and Safety

- 17.1 Cutting of Axon™ Panels and EasyLap™ Panels must be carried out in well ventilated areas, and a dust mask and eye protection must be worn.
- 17.2 When power tools are used for cutting or forming holes, health and safety measures as set out in the Technical Literature must be observed.
- 17.3 Safe use and handling procedures for the Axon™ Panel and EasyLap™ Panel Cladding are provided in the Technical Literature.

Basis of Appraisal

The following is a summary of the technical investigations carried out:

Investigations

- 18.1 Structural, weathertightness and durability opinions of the Axon™ Panel and EasyLap™ Panel Cladding have been provided by BRANZ technical experts.
- 18.2 Site inspections have been carried out by BRANZ to assess the practicability of installation, and to examine completed installations.
- 18.3 The Technical Literature for the Axon™ Panel and EasyLap™ Panel Cladding has been examined by BRANZ and found to be satisfactory.



Quality

- 19.1 The manufacture of the Axon™ Panel and EasyLap™ Panel Cladding has been examined by BRANZ, including methods adopted for quality control. Details regarding the quality of materials used and finished product was obtained by BRANZ and found to be satisfactory.
- 19.2 The quality of components and accessories supplied by James Hardie New Zealand Limited is the responsibility of James Hardie New Zealand Limited.
- 19.3 Quality of installation on-site is the responsibility of the installer, in accordance with the Axon™ Panel and EasyLap™ Panel Cladding Technical Literature.
- 19.4 Designers are responsible for the building design, and building contractors are responsible for the quality of installation of the building underlay, cavity battens, Axon™ Panels and EasyLap™ Panels and accessories, in accordance with the instructions of James Hardie New Zealand Limited.
- 19.5 Sub-trades are responsible for the installation of penetrations, flashing etc. that are relevant to their trade, in accordance with the Axon™ Panel and EasyLap™ Panel Cladding Technical Literature.
- 19.6 Building owners are responsible for the maintenance of the Axon™ Panel and EasyLap™ Panel Cladding in accordance with the instructions of James Hardie New Zealand Limited.

Sources of Information

- AS 3566.1-2002 Self-drilling screws for the building and construction industries General requirements and mechanical properties.
- AS 3730 Guide to the properties of paints for buildings.
- AS/NZS 2904:1995 Damp-proof courses and flashings.
- AS/NZS 2908.2:2000 Cellulose-cement products - Flat sheet.
- AS/NZS 4680:2006 Hot-dip galvanised [zinc] coatings on fabricated ferrous articles.
- ISO 5660.1:2002 Heat release rate [cone calorimeter method].
- NZS 3602:2003 Timber and wood-based products for use in building.
- 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.

Amendments

Amendment No. 1, dated 13 October 2022

This Appraisal has been amended to correct the serviceable life statement.



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19 May 2022

AXON™ PANEL AND EASYLAP™
PANEL CLADDING



In the opinion of BRANZ, **Axon™ Panel and EasyLap™ Panel Cladding** 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 **James Hardie New Zealand Limited**, 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. **James Hardie New Zealand Limited:**
 - 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 **James Hardie New Zealand Limited**.
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 **James Hardie New Zealand Limited** or any third party.

For BRANZ

Chelydra Percy

Chief Executive

Date of Issue:

19 May 2022