BRANZ Appraised
Appraisal No. 1225 [2022]

STRIA™ CLADDING VERTICAL

Appraisal No. 1225 (2022)

BRANZ Appraisals

Technical Assessments of products for building and construction.

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Product

1.1 Stria™ Cladding Vertical is a cavity-based fibre cement 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 Stria™ Cladding Vertical installed over 40 mm structural cavity battens has been appraised as an 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 Stria™ Cladding Vertical installed over 20 mm timber cavity battens has been appraised for weathertightness and structural wind loading when used as an external vertically fixed wall cladding for buildings between 0 and 25 m high within the following scope:

- buildings with a building height not exceeding 25 m; 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 3.2 kPa where studs are at maximum 400 mm centres; and,
- with inter-storey deflections designed for and up to height/180 of horizontal in-plane movement during seismic serviceable limit state (SLS) events (based on a 3 m inter-storey height); and,
- constructed with timber framing subject to specific engineering design; and,
- when fixed over James Hardie RAB™ Board rigid air barrier.

2.3 Stria™ Cladding Vertical must only be installed vertically on vertical, flat surfaces.

2.4 Stria™ Cladding Vertical is appraised for use with aluminium window and door joinery that is installed with vertical jambs and vertical heads and sills. *(Note: The Appraisal of Stria™ Cladding Vertical relies on the joinery meeting the requirements of NZS 4211 for the relevant Wind Zone or design wind pressure.)*

Readers are advised to check the validity of this Appraisal by referring to the Valid Appraisals listing on the BRANZ website, or by contacting BRANZ.

Building Regulations

New Zealand Building Code (NZBC)

3.1 **In the opinion of BRANZ, Stria™ Cladding Vertical, 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. Stria™ Cladding Vertical 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 9.1-9.3.

Clause B2 DURABILITY: Performance B2.3.1 (b) 15 years, B2.3.1 (c) 5 years and B2.3.2. Stria™ Cladding Vertical meets these requirements. See Paragraphs 10.1-10.4.

Clause E2 EXTERNAL MOISTURE: Performance E2.3.2. Stria™ Cladding Vertical meets this requirement. See Paragraphs 14.1-14.5.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Stria™ Cladding Vertical meets this requirement.

Technical Specification

Stria™ Cladding panels

4.1 Stria™ Cladding panels are 14 mm thick and are available in 325 or 405 mm widths and 4,200 mm long. The panels are factory sealed on the front face and all edges with a manila white colour primer.

4.2 Stria™ Cladding panels are manufactured from a reduced density cellulose fibre cement formulation. The panels are formed, cut to length and then cured by high-pressure autoclaving. Stria™ Cladding panels are manufactured to meet the requirements of AS/NZS 2908.2 and is identified by the name 'Stria™ Cladding' printed on the back of the panels.

Accessories

4.3 Accessories used with Stria™ Cladding Vertical, which are supplied by James Hardie New Zealand Limited are:

- **Hardie™ 20 mm horizontal cavity battens** – 45 x 20 mm thick radiata pine battens treated to Hazard Class H3.1 and available in 2,700 mm lengths. The top edge is bevelled with an 18° slope. The back face is grooved with 22 mm wide x 5 mm deep rebates at 50 mm centres, and the front face is grooved with 6 mm wide x 6 mm deep rebates at 150 mm centres. The grooves are offset on each face.
- **Hardie™ 40 mm structural horizontal cavity battens** - 45 x 40 mm thick radiata pine battens treated to Hazard Class H3.1 and available in 2,700 mm lengths. The top edge is bevelled with an 18° slope. The back face is grooved with 22 mm wide x 5 mm deep rebates at 50 mm centres, and the front face is grooved with 6 mm wide x 6 mm deep rebates at 150 mm centres. The grooves are offset on each face.
- **Hardie™ 14 mm trimline joint flashing** – an aluminium extrusion used behind the cladding at horizontal joints, available in 3,000 mm lengths.
- **Hardie™ weatherboard internal 'W' corner** - an anodised aluminium extrusion used to create internal corners, available in 2,700 mm lengths.
- **Hardie™ 14 mm internal corner flashing** – a 90° anodised aluminium extrusion available in 3,000 mm lengths.
- **Hardie™ 14 mm external box corner** - an anodised aluminium extrusion used to create external corners, available in 2,700 mm and 4,000 mm lengths.
- **uPVC vent strip** – a uPVC moulding used as vermin proofing, available in 3,000 mm lengths.
- **Trimline horizontal jointer** - an aluminium jointer used to cover the butt joint of Hardie™ 14 mm trimline joint flashing, available in 100 mm lengths.
- **Trimline external and internal corner jointers** - extrusions which join trimline joint flashings at external and internal corners.

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- **Fixings for Stria™ Cladding panels to timber cavity battens** - Hardie™ Flex 75 x 3.15 mm stainless steel or hot-dip galvanised nails.
- **HomeRAB™ Pre-Cladding** - 4.5 mm thick fibre cement rigid wall underlay, 1,200 mm wide and available in 2,450 or 2,750 mm lengths.
- **RAB™ Board** - 6 or 9 mm thick fibre cement rigid wall underlay, 1,200 mm wide and available in 2,450, 2,750 or 3,000 mm lengths.

4.4 Accessories used with Stria™ Cladding Vertical, which are supplied by the building contractor are:

- **Fixings for 20 mm timber cavity battens to timber frame** - 40 x 2.8 mm or longer Hardie™ Flex nail.
- **Fixings for Stria™ Cladding panels to 20 mm timber cavity battens over flexible underlay** - 65 x 2.87 mm 'D' head or RounDrive ring shank stainless steel or hot-dip galvanised nails.
- **Fixings for Stria™ Cladding panels to 20 mm timber cavity battens over rigid underlay** - 75 x 3.06 mm 'D' head or 75 x 3.15 mm RounDrive ring shank stainless steel or hot-dip galvanised nails.
- **Fixings for Hardie™ 40 mm structural horizontal cavity battens to timber frame** - 75 x 3.06 mm 'D' round head stainless steel or hot-dip galvanised nail or 80 mm x 10 g wood screws.
- **Fixings for Stria™ Cladding panels to Hardie™ 40 mm structural horizontal cavity battens** - 50 x 2.87 mm 'D' head or RounDrive ring shank stainless steel or hot-dip galvanised nails.

[Note: Stainless steel fixings must be Grade 316 and hot-dip galvanising must comply with AS/NZS 4680].

- **40 mm vent strip** - uPVC moulding used as vermin proofing.
- **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 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** – 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 a rigid air barrier system.
- **Flexible sill, head 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.
- **Joinery head flashings** - extruded or 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 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.
- **Adhesive** - Sikaflex 11FC or Bostik Seal "N" Flex polyurethane adhesive for applying between the panels and battens.
- **Flexible 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.

Paint System Specification

4.5 Paint systems are not supplied by James Hardie New Zealand Limited and have not been assessed, therefore they are outside the scope of this Appraisal.

4.6 All exposed faces, including top edges at sills and all bottom edges of Stria™ Cladding panels and accessories must be finished with a latex exterior paint system complying with any of Parts 7, 8, 9, or 10 of AS 3730 within 90 days of installation.

Readers are advised to check the validity of this Appraisal by referring to the Valid Appraisals listing on the BRANZ website, or by contacting BRANZ.

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. Stria™ Cladding panels must be stacked flat, off the ground and supported on a level platform. They must be kept dry at all times either by storing under cover or providing waterproof covers to the stack. Care must be taken to avoid damage to edges, ends and surfaces. Stria™ Cladding panels must always 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:

- Stria™ Cladding - Vertical Installation Technical Specification, August 2022.
- Stria™ Cladding - Vertical Installation to Hardie™ 40 mm structural horizontal cavity batten Technical Specification, August 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 Stria™ Cladding Vertical 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 a building within the scope limitations of NZS 3604. Buildings or parts of a building 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. Studs must be at maximum 600 mm centres.

7.3 Nogs/dwangs must be in a continuous line and be fitted flush between the studs at maximum 600 mm centres. Nogs/dwangs must be at 400 mm centres when Stria Cladding Vertical is installed over 20 mm timber cavity battens in areas subject to wind pressures above 1.5 kPa.

7.4 The moisture content of the timber framing must not exceed 24% at the time of the cladding installation. *[Note: If Stria™ Cladding Vertical is fixed to framing with a moisture content of greater than 24%, problems may occur at a later date due to excessive timber shrinkage.]*

General

8.1 When Stria™ Cladding Vertical is used for specifically designed buildings up to 3.2 kPa ULS wind pressure, only the weathertightness and structural aspects of the cladding 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 vent strip and rebates in the cavity batten provide a minimum ventilation opening area of 1,000 mm^2 per lineal metre of wall. *[Note: Hardie™ horizontal cavity battens do not provide vermin proofing to the bottom of the cavity and an additional cavity vent strip must be used.]*

8.3 At ground level, the bottom edge of Stria™ Cladding Vertical 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.

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8.4 At balcony, deck or low pitch roof/wall junctions, the bottom edge of Stria™ Cladding Vertical must be kept clear of any adjacent surface, or above the top surface of any adjacent roof flashing by a minimum of 50 mm.

8.5 All external walls of buildings must have barriers to airflow in the form of flexible wall underlays and 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.

8.6 All external walls of buildings must have barriers to airflow in the form of 9 mm thick RAB™ Board when between 10-25 m high or situated in specific design wind pressures over a maximum design differential ULS of 1.5 kPa.

8.7 Unlined gables and walls must incorporate RAB™ Board, 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, the weatherboard fixing lengths must be increased by a minimum of the thickness of the underlay.

8.8 Where Stria™ Cladding Vertical 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.

Inter-storey Junctions

8.9 Inter-storey drained joints must be constructed in accordance with the Technical Literature. 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). For buildings more than 10 m high, a drained horizontal joint must be provided at each floor to accommodated the inter-storey deflections.

Structure

Mass

9.1 The mass of Stria™ Cladding Vertical is 16 kg/m^2 at equilibrium moisture content (EMC). Stria™ Cladding Vertical is therefore considered a light wall cladding in terms of NZS 3604.

Impact Resistance

9.2 Stria™ Cladding Vertical will resist impacts likely to be encountered in normal residential use. The likelihood of impact damage to the cladding when used in light commercial situations should be considered at the design stage, and appropriate protection such as the installation of bollards and barriers provided for vulnerable areas.

Wind Zones

9.3 Stria™ Cladding Vertical, when installed over 40 mm structural cavity battens, 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 2.5 kPa ULS wind pressure where buildings are specifically designed.

9.4 Stria™ Cladding Vertical, when installed over 20 mm timber cavity battens, is suitable for use in buildings up to 25 m high situated in specific design wind pressures up to a maximum design differential ULS of 3.2 kPa, where studs are at maximum 400 mm centres.

Inter-storey Deflections

9.5 Stria™ Cladding Vertical, installed in conjunction with RAB™ Board, is suitable to resist inter-storey deflections. When installed in accordance with the Technical Literature, Stria™ Cladding Vertical, in conjunction with RAB™ Board, is capable of withstanding SLS deflections up to height/180.

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Durability

10.1 Stria™ Cladding Vertical meets the performance requirements of NZBC Clause B2.3.1 (b) 15 years for the Stria™ Cladding panels, flashings and cavity system, and the performance requirements of NZBC Clause B2.3.1 (c) 5 years for the exterior paint system.

Serviceable Life

10.2 Stria™ Cladding Vertical installations are expected to have a serviceable life of at least 50 years provided the paint coating system is maintained in accordance with this Appraisal to ensure the Stria™ Cladding panels and fixings remain dry in service. Stria™ Cladding Vertical must be painted within 90 days of fixing.

10.3 Coastal locations can be very corrosive to fasteners, especially locations within distances of up to 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. To achieve a 50 year serviceable life in Zone D, Stria™ Cladding Vertical must be fixed with stainless steel fasteners. Fasteners outside Zone D may be hot-dip galvanised steel.

10.4 Microclimatic conditions, including geothermal hot spots, industrial contamination and corrosive atmospheres, and contamination from agricultural chemicals or fertilisers can convert mildly corrosive atmospheres into aggressive environments for fasteners. The fixing of Stria™ Cladding Vertical 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 Stria™ Cladding Vertical installations to continue to meet the NZBC durability performance provision and to maximise its serviceable life.

11.2 Annual inspections must be made to ensure that all aspects of the cladding system, including the paint coating system, 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 paint coating surface is recommended to remove grime, dirt and organic growth and to maximise the life and appearance of the coating. Paint systems must be recoated at approximately 7-15 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 will adversely affect the long term durability of Stria™ Cladding Vertical.)*

Prevention of Fire Occurring

12.1 Stria™ Cladding panels are considered a non-combustible material and need not be separated from heat sources such as fireplaces, heating appliances and chimneys. However, when used in conjunction with, or attached to heat sensitive materials, the heat sensitive material must be separated 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.

Control of External Fire Spread

Vertical Fire Spread - Buildings 10 m in height or less

13.1 When the system is used in buildings 10 m 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 10 m.

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Vertical Fire Spread - Buildings greater than 10 m in height

13.2 Stria™ Cladding Vertical can form part of an external wall cladding system designed to meet Vertical Fire Spread requirements. This has not been assessed by this Appraisal and is outside its scope. Specific Fire Engineering Design is required for each building over 10 m in height to ensure the Stria™ Cladding Vertical and the External Wall Cladding System will meet the requirements of NZBC Acceptable Solution C/AS2, Section 5.8 or NZBC Verification Method C/VM2, Section 4.6. The following information is provided to support the Specific Engineering Design:

13.3 Stria™ Cladding Vertical, as part of the James Hardie External Cladding System, has been tested to NFPA 285 and has passed the test criteria.

13.4 The components listed in Table 1 form a part of the James Hardie External Cladding System and have been tested and achieved the listed classifications.

Table 1: Components of the Stria™ Cladding Vertical system

Component	Test Method	Result
Stria™ Cladding panels	AS/NZS 3837:1998	Pass Type A
Joinery and joint flashings and mouldings	Aluminium as defined in C/AS2 definitions	Non-combustible
James Hardie Rigid Air Barrier [RAB™ Board]	AS/NZS 3837:1998	Pass Type A
Flexible sill, head and jamb flashing tape	-	-
Timber cavity battens	Component of NFPA 285 test	Pass
Fixings	Steel as defined in C/AS2 definitions	Non-combustible
Air seals and sealants	-	-

Horizontal Fire Spread

13.5 Stria™ Cladding panels have a peak heat release rate of less than 100 kw/m^2 and a total heat released of less than 25 MJ/m^2. 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.

External Moisture

14.1 Stria™ Cladding Vertical, 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 Stria™ Cladding Vertical 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 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 Stria™ Cladding Vertical 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.

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Internal Moisture

15.1 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.

Water Vapour

15.2 Stria™ Cladding Vertical is not a barrier to the passage of water vapour, and when installed in accordance with the Technical Literature and this Appraisal, will not create or increase the risk of moisture damage resulting from condensation.

Installation Information

Installation Skill Level Requirement

16.1 All design and building work must be carried out in accordance with the Stria™ Cladding Vertical Technical Literature and this Appraisal by competent and experienced tradespersons conversant with Stria™ Cladding Vertical. 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

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 battens and the rest of the Stria™ Cladding Vertical system. Flexible wall underlay must be installed vertically and be continuous around corners. Underlay must be lapped 75 mm minimum at vertical joints and 150 mm minimum over studs at vertical joints. Rigid wall underlays must be installed in accordance with the instructions of the manufacturer and the Technical Literature. 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 400 mm centres and a flexible wall underlay is being used, a building underlay support must be installed in accordance with NZBC Acceptable Solution E2/AS1, Paragraph 9.1.8.5.

RAB™ Board

17.3 RAB™ Board must be installed in accordance with the Technical Literature and BRANZ Appraisal No. 611 James Hardie Rigid Air Barriers.

Hardie™ Horizontal Cavity Battens

17.4 Hardie™ horizontal cavity battens must be installed over the wall underlay to the wall framing (nogs/dwangs) at maximum 600 mm centres. The battens must be installed with the top edge sloping away from the wall underlay towards the back of the Stria™ Cladding panels. The 20 mm cavity battens must be fixed by the cladding fixings through the timber battens to the timber framing. Stria™ Cladding panels must be fixed vertically to Hardie™ 40 mm structural horizontal cavity battens using fixings as specified in the Technical Literature.

Stria™ Cladding Installation

17.5 Stria™ Cladding panels may be cut on-site by power saw. Holes and cut-outs may be formed by drilling a number of holes around the perimeter of the opening required and tapping out the centre with a hammer, or by using a hole saw.

17.6 Stria™ Cladding panels must be dry prior to installation. Before the panels are installed, cut ends exposed to the exterior such as at aluminium box corners or internal corners must be sealed with an acrylic sealer to reduce the absorbency of the fibre cement.

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17.7 Before Stria™ Cladding panels are installed, the corner detail must be prepared to suit the selected option, e.g. external box corner. The necessary flashings, including window flashings, must be installed before commencing panel fixing and the cavity vent strip must be installed continuously around the bottom of the cavity.

17.8 Stria™ Cladding panels must be installed starting at the corner of the wall being clad. The first panel must be installed plumb to assist with the installation of subsequent panels. The panels must overhang the bottom plate by a minimum of 50 mm. The panels should be installed with the lap facing away from the prevailing winds.

17.9 Stria™ Cladding panel laps are pre-determined by the machined joint detail.

17.10 Fixings for Stria™ Cladding Vertical must be in accordance with Paragraph 10.3 and the Technical Literature. The 'D' head nails must be punched a maximum of 2 mm below the surface of the panel and be no closer than 12 mm to the end of the panel.

Aluminium Joinery Installation

17.11 Aluminium joinery and associated head and sill flashings must be installed by the building contractor in accordance with the Technical Literature. An 8 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.

Finishing

17.12 All punched fixings must be filled. The paint coating manufacturer's instructions must be followed at all times for application of the paint finish. Stria™ Cladding Vertical must be clean and dry before commencing painting.

Inspections

17.13 The Technical Literature must be referred to during the inspection of Stria™ Cladding Vertical installations.

Health and Safety

18.1 Cutting of Stria™ Cladding panels 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 as set out in the Technical Literature must be observed to minimise the amount of dust generated.

18.3 Safe use and handling procedures for Stria™ Cladding panels and the components that make up the 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

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

19.1 Uniform wind face load tests to simulate wind pressures on Stria™ Cladding Vertical were carried out by a James Hardie Australia Pty Ltd NATA accredited laboratory. The testing determined design wind suction pressures, and by comparing these pressures with the NZS 3604 and AS/NZS 1170 pressure coefficients, the fixing requirements were determined for timber-framed walls. The test methods and results have been reviewed by BRANZ and found to be satisfactory.

19.2 Stria™ Cladding Vertical has been tested by a James Hardie Australia Pty Ltd NATA accredited laboratory in accordance with AS/NZS 2908.2 and ISO 8336. The testing covered: soak-dry, bending strength, warm water soaking, heat/rain, freeze/thaw and apparent density. The test methods and results have been reviewed by BRANZ and found to be satisfactory.

19.3 Cone calorimeter testing to determine the peak rate of heat release and total heat release of Stria™ Cladding Vertical was completed by BRANZ. The testing was carried out in accordance with AS/NZS 3837.

Readers are advised to check the validity of this Appraisal by referring to the Valid Appraisals listing on the BRANZ website, or by contacting BRANZ.

19.4 BRANZ expert opinion on NZBC C3 code compliance for Stria™ Cladding Vertical was based on NFPA 285 testing by Intertek Group plc on specimens assembled containing the James Hardie External Cladding System.

19.5 BRANZ expert opinion on NZBC E2 code compliance for Stria™ Cladding Vertical was based on E2/VM2 [BRANZ EM7] testing and evaluation of all details within the scope and as stated within this Appraisal.

Other Investigations

20.1 Weathertightness, structural, fire and durability opinions have been provided by BRANZ technical experts.

20.2 Site visits have been carried out by BRANZ to assess the practicability of installation, and to examine completed installations.

20.3 The manufacturer's Technical Literature has been examined by BRANZ and found to be satisfactory.

Quality

21.1 The manufacture of Stria™ Cladding Vertical 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. BRANZ has taken note of CodeMark Certificate GM-CM30109-RevA covering quality aspects with the cladding.

21.2 The quality of materials, components and accessories supplied by James Hardie New Zealand Limited is the responsibility of James Hardie New Zealand Limited. The quality control system of James Hardie New Zealand Limited has been assessed and registered as meeting the requirements of ISO 9001.

21.3 Quality on-site is the responsibility of the builder or contractor.

21.4 Designers are responsible for the building design and building contractors are responsible for the quality of installation of the Stria™ Cladding Vertical in accordance with the instructions of James Hardie New Zealand Limited.

21.5 Building owners are responsible for the maintenance of Stria™ Cladding Vertical in accordance with the instructions of James Hardie New Zealand Limited.

Sources of Information

- AS 3730 Guide to the properties of paints for buildings.
- AS/NZS 1170:2002 Structural design actions.
- AS/NZS 2908.2:2000 Cellulose-cement products - Flat sheet.
- AS/NZS 3837:1998 Method of test for heat and smoke release rates for materials and products using an oxygen consumption calorimeter.
- AS/NZS 4534:1998 Zinc and zinc/aluminium-alloy coatings on steel wire.
- AS/NZS 4680:2006 Hot-dip galvanized (zinc) coatings on fabricated ferrous articles.
- BRANZ Appraisal No. 611 James Hardie Rigid Air Barriers.
- BRANZ EM7 Performance of mid-rise cladding systems.
- ISO 8336:2009 Fibre-cement flat sheets -Product specification and test methods.
- NFPA 285:2012 Standard method of test for the evaluation of flammability characteristics of exterior non-loadbearing wall assemblies containing components using the intermediate scale, multi-storey test apparatus.
- 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.

Readers are advised to check the validity of this Appraisal by referring to the Valid Appraisals listing on the BRANZ website, or by contacting BRANZ.

BRANZ

In the opinion of BRANZ, Stria™ Cladding Vertical 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:
31 August 2022

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