



BRANZ Appraised

Appraisal No. 850 [2025]

SECURA™ FLOORING



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BRANZ Appraisals

Technical Assessments of products for building and construction.



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Product

- 1.1 Secura™ Flooring is a fibre cement structural flooring material for the interior flooring of residential and light commercial buildings.
- 1.2 Secura™ Flooring is suitable for use as a general flooring and is also for use in wet areas such as bathrooms, toilets, laundries and kitchens. It is a substrate for most flooring finishes such as tiles, vinyl, other impervious flooring and carpet.

Scope

- 2.1 Secura™ Flooring has been appraised for use as a sheet flooring material and structural floor diaphragm on suspended internal timber-framed floors of residential and light commercial buildings that have been designed and constructed in accordance with NZS 3604, Section 7.
- 2.2 Secura™ Flooring has also been appraised for use as a sheet flooring material on suspended timber and steel-framed floors of residential buildings subject to specific engineering design (SED) where the floor loads do not exceed those specified in AS/NZS 1170.1, Table 3.1, Category A1 or B (up to, and including, 3 kPa uniformly distributed (UDL) floor load or 2.7 kN point load).

Building Regulations

New Zealand Building Code (NZBC)

- 3.1 In the opinion of BRANZ, Secura™ Flooring, 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. Secura™ Flooring meets the requirements for loads arising from self-weight, imposed gravity loads arising from use, earthquake, wind and impact [i.e. B1.3.3 (a), (b), (f), (h) and (j)]. See Paragraphs 11.1-11.4.

Clause B2 DURABILITY: Performance B2.3.1 (a) not less than 50 years and B2.3.2. Secura™ Flooring meets these requirements. See Paragraphs 12.1 and 12.2.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Secura™ Flooring meets this requirement.



Technical Specification

Secura™ Flooring

- 4.1 Secura™ Flooring is a sheet flooring material with tongue-and-groove joints along both long edges for easy jointing across the floor joists. The short edges are square edged. The sheets are sealed on all six sides with a moisture-resistant sealer.
- 4.2 Secura™ Flooring is manufactured using a reduced density cellulose fibre cement formulation. The sheets are formed, cut to length and then cured by high-pressure autoclaving. After autoclaving, the long edges are tongue-and-grooved for jointing, and the long edges on one face of the sheet are chamfered. Secura™ Flooring sheets are 19 mm thick and are available 600 mm wide by 2,400 mm long.
- 4.3 Instructions are printed on the faces of Secura™ Flooring sheets to identify which side is installed facing up for either tiled, or vinyl and carpet applications.

Accessories

- 4.4 Accessories used with Secura™ Flooring, which are supplied by the building contractor are:
 - **Fixings [timber frame non-diaphragm installation]** – Paslode 50 x 2.87 mm Dekfast hot-dip galvanised RounDrive nail, Paslode 50 x 2.87 mm stainless steel ring shank RounDrive nails or 10 g x 40 mm self-embedding stainless steel wood screws.
 - **Fixings [steel frame non-diaphragm installation]** – 8 g x 40 mm minimum self-drilling AS 3566, Class 3 galvanised screws.
 - **Fixings [timber frame diaphragm installation]** – Simpson Strong-Tie SSDHSD50ER 50 mm Grade 305 stainless steel tapping screw.
 - **Joint sealant** – sealant covered by a valid BRANZ Appraisal. The sealant must also be compatible with the selected waterproofing membrane.

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. Secura™ Flooring sheets 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 a cover or providing waterproof covers to the stack. Care must be taken to avoid damage to edges, ends or surfaces.
- 5.2 Accessories must be stored so they are kept clean, dry and undamaged. All accessories must be used within the maximum storage time of the manufacturer.

Technical Literature

- 6.1 This Appraisal must be read in conjunction with:
 - Secura™ Flooring Installation Manual, dated February 2025.
- 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

- 7.1 Secura™ Flooring may be used as pre-laid or post-laid flooring. When flooring is pre-laid, care must be taken in the planning and construction stages to ensure the building is closed in within a maximum exposure period of 90 days. If this is unlikely, then the flooring must be post-laid. Secura™ Flooring is not suitable for use as a flooring overlay to concrete slab-on-ground floors.
- 7.2 For timber-framed floors, the use of a construction adhesive is recommended by James Hardie New Zealand Limited, in conjunction with mechanical fasteners to help eliminate floor system movement, which could result in the undesirable generation of noise [squeaking]. The use of adhesives for fixing Secura™ Flooring in this application have not been assessed, and are outside the scope of this Appraisal.

Framing

Timber Treatment

- 8.1 Timber floor framing beneath Secura™ Flooring must be treated as required by NZBC Acceptable Solution B2/AS1.

Timber Framing

- 8.2 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, joists must be 45 mm wide and at a maximum of 400 mm centres.
- 8.3 Timber framing must have a maximum moisture content in accordance with NZS 3602 at the time of Secura™ Flooring installation. *[Note: If Secura™ Flooring is fixed to framing with a moisture content greater than 20%, problems may occur at a later date due to excessive timber shrinkage.]*

Steel Framing

- 8.4 Steel framing must be SED meeting the requirements of the NASH Standard Part 2. The steel thickness must be 0.75-1.9 mm base metal thickness (BMT). In all cases, joists must be 45 mm wide at a maximum of 400 mm centres.

Secura™ Flooring Set-out

- 8.5 Secura™ Flooring must be installed across the floor joists, with short ends fully supported on joists. The flooring must be laid in a staggered pattern, and the minimum allowable length of sheet shall be twice the joist spacing – i.e. 800 mm for 400 mm joist spacings. No blocking is required between the floor joists under tongue-and-groove joints.
- 8.6 Where Secura™ Flooring is going to be covered with a tile finish, the sheet must be installed with the 'This side down for tiles' print facing down. Where Secura™ Flooring is going to be covered with a vinyl or carpet finish, the sheet must be installed with the 'This side up for vinyl' print facing up.

General

Subfloor Ventilation

- 9.1 Where Secura™ Flooring is laid over a subfloor space, all timber and flooring must be protected against damage from ground water moisture in accordance with the requirements of NZS 3604, Section 6. Cross-flow ventilation around the full perimeter of the building must be provided in accordance with the relevant requirements of NZS 3604, Section 6.14.

Finishing

- 9.2 Secura™ Flooring must be finished with a suitable floor covering to suit the intended end use.

Wet Areas

- 9.3 Secura™ Flooring is suitable for use in wet areas. Wet areas are spaces where sanitary fixtures and sanitary appliances are located such as bathrooms, toilets, laundries and kitchens. There are two general categories of wet areas as follows:
- **Water splash** – these are areas subject to intermittent splashing of water such as around baths, vanities, tubs and sinks.
 - **Shower areas** – these are areas subject to frequent and heavy water splash such as enclosed showers, unenclosed shower zones and showers over baths.
- 9.4 Where Secura™ Flooring is used in shower areas, a waterproofing membrane system must be used to protect the Secura™ Flooring. Other water splash areas must be protected by an integrally waterproof material [e.g. polyvinylchloride, ceramic floor tiles etc.] with sealed joints or a waterproofing membrane. The Technical Literature contains details of waterproofing membranes recommended by James Hardie New Zealand Limited. The use of alternative waterproofing membranes with Secura™ Flooring has not been assessed by BRANZ and is outside the scope of this Appraisal.



- 9.5 A floor waste is recommended where accidental flooding is possible. Floor wastes must be installed in accordance with the requirements of NZBC Acceptable Solution E3/AS1, Paragraph 2.2 or NZBC Acceptable Solution G13/AS1, Paragraph 3.4.

Control Joints

- 10.1 Where Secura™ Flooring is finished with tiles, control joints must be constructed in accordance with the Technical Literature and provided at maximum 4.8 m centres. Control joints must also be provided at changes of direction [such as L-shaped rooms], at doorways where the tile finish is carried through to the next room, and where there is a control joint in the floor structure below.

Structure

Density

- 11.1 Secura™ Flooring sheets have a mass of approximately 24.5 kg/m².

Loads

- 11.2 Secura™ Flooring will support UDL of up to 3 kPa, and concentrated point loads of 2.7 kN in residential and light commercial buildings built within the scope of NZS 3604 and SED building applications with maximum floor joist spacing of 400 mm centres.
- 11.3 For typical NZS 3604 applications pre-laid over supports at maximum 400 mm centres, the stiffness of Secura™ Flooring sheets will still be acceptable after exposure to the weather for 90 days.

Structural Floor Diaphragms

- 11.4 Secura™ Flooring has been appraised for use as a sheet material for structural floor diaphragms to resist lateral loads in accordance with NZS 3604, Section 7.3 for buildings within the scope limitations of NZS 3604. Such diaphragms must be detailed in accordance with the Technical Literature. Simpson Strong-Tie SSDHSD50ER 50 mm Grade 305 stainless steel tapping screws must be used to fix Secura™ Flooring for structural floor diaphragms.

Durability

- 12.1 Secura™ Flooring meets the performance requirements of NZBC Clause B2.3.1 [a] not less than 50 years where the floor is a structural diaphragm, or it is installed under structural walls.

Serviceable Life

- 12.2 Flooring systems based on Secura™ Flooring can be maintained in a serviceable condition for at least 50 years, provided that when pre-laid, the flooring has not been exposed to the weather for a period greater than 90 days.

Maintenance

- 13.1 Adequate subfloor ventilation must be maintained by ensuring vegetation or other obstructions are kept away from vents in perimeter foundation walls. Where ground vapour barriers exist, they must be maintained in a serviceable and effective condition.
- 13.2 In wet areas, impervious floor coverings [or waterproofing membranes] must be maintained to ensure water cannot penetrate through to the Secura™ Flooring. Any floor wastes must be installed and maintained so as to remain unobstructed, drain to the outside of the building, and prevent Secura™ Flooring from becoming wet.

Prevention of Fire Occurring

- 14.1 Separation or protection must be provided to Secura™ Flooring from heat sources such as fireplaces, heating appliances and chimneys. Part 7 of NZBC Acceptable Solution C/AS1 and NZBC Acceptable Solution C/AS2 provide methods for separation and protection of combustible materials from heat sources.

Fire Affecting Areas Beyond the Fire Source

- 15.1 Secura™ Flooring can be used as flooring in Risk Group SH dwellings which have no specific fire requirements under the NZBC.
- 15.2 For Risk Groups other than SH, surface finish requirements for floors are given in NZBC Acceptable Solution C/AS2, Paragraph 4.17.3. Secura™ Flooring has a critical radiant flux $\geq 11 \text{ kW/m}^2$, in accordance with NZBC Acceptable Solution C/AS2, Appendix C2.1 [a].

Installation Information

Installation Skill Level Requirement

- 16.1 Secura™ Flooring installation must always be carried out in accordance with the instructions given within the Technical Literature and this Appraisal by, or under the supervision of, a Licensed Building Practitioner (LBP) with the relevant Licence Class.

General

- 17.1 Secura™ Flooring sheets must be laid with the correct side facing up, depending on the selected floor finish. The sheets must be laid across the floor joists ensuring that all short edges of the flooring are fully supported on floor joists or perimeter framing. Secura™ Flooring does not need blocking under the tongue-and-groove joint.
- 17.2 Sheets must be cut so that they fit the floor area tightly, with joints staggered in a stretcher-bond brick pattern, ensuring four sheet corners never meet at one point. Each sheet must span at least two floor joist spans [i.e. be continuous over three joists].
- 17.3 A continuous 5 mm bead of construction adhesive is applied to the floor joists before the sheet is laid in place. Starting from the corner, the sheets are laid across the joists and mechanically fixed with Paslode 50 x 2.87 mm Dekfast hot-dip galvanised RounDrive nails, Paslode 50 x 2.87 mm stainless steel ring shank RounDrive nails or 10 g x 40 mm self-embedding stainless steel wood screws (timber frame non-diaphragm applications), or 8 g x 40 mm minimum self-drilling AS 3566, Class 3 galvanised screws (steel frame non-diaphragm applications) at 200 mm centres maximum along each joist. The fixings must be positioned at a minimum of 25 mm from the tongue-and-grooved edge, 12 mm from a square or cut edge, and a minimum of 50 mm from the sheet corner.
- 17.4 Where Secura™ Flooring is to be used as a diaphragm floor, the sheets must be fixed with Simpson Strong-Tie SSDHSD50ER 50 mm Grade 305 stainless steel tapping screws. The fixing layout must be in accordance with the Installation Manual.
- 17.5 When used under tiles, a 2 mm gap must be provided at square edges and filled with sealant. The rebate in long joint groove edges must also be filled with sealant after jointing. After the flooring has been mechanically fixed, all fixing heads must be sealed over.
- 17.6 Control joints, where required, must be formed in accordance with the Technical Literature.
- 17.7 On completion, the floor surface must be cleaned, and the sealant left for at least 24 hours to cure, prior to tiling or other floor finishes being applied.

Inspections

- 17.8 The Technical Literature must be referred to during the inspection of Secura™ Flooring installations.

Floor Finishes

- 18.1 The application of floor coverings to Secura™ Flooring must be carried out after the building is fully closed-in. Details of finishing options are provided in the Technical Literature.
- 18.2 Adhesives used for the installation of vinyl floor coverings must be used in accordance with the manufacturer's instructions. Carpets are laid using the appropriate grips, fixings and underlays.
- 18.3 Where falls need to be created in the floor, a mortar bed screed can be used. To prevent cracking of the floor tiles, the mortar bed must be reinforced over all joints in the flooring sheets.

- 18.4 Flexible tile adhesives and grouts must be used to help eliminate the effects of differential movement between tiles and the Secura™ Flooring. The Technical Literature contains details of waterproofing membranes and tile adhesives recommended by James Hardie New Zealand Limited.

Health and Safety

- 19.1 Cutting of Secura™ Flooring must be carried out in well ventilated areas, and a dusk mask and eye protection must be worn.
- 19.2 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 because of the amount of dust generated.
- 19.3 Safe use and handling procedures for Secura™ Flooring and the components that make up the flooring 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

- 20.1 The following testing of Secura™ Flooring has been tested by the James Hardie NATA Accredited laboratory:
- Testing in accordance with AS/NZS 2908.2. The testing covered bending strength, water permeability, freeze/thaw resistance, warm water soaking, heat/rain, soak-dry and apparent density. The testing was completed on control samples and samples that had been subjected to extended periods of natural weathering.
 - Strength capacity and deflection under concentrated load [stiffness].
- The test methods and results have been reviewed by BRANZ and found to be satisfactory.
- 20.2 Secura™ Flooring has been tested by BRANZ as a structural floor diaphragm to compare its performance with an NZS 3604 structural floor diaphragm. An opinion has been given by BRANZ technical experts that the Secura™ Flooring diaphragm is equivalent in performance to the structural floor diaphragm of NZS 3604.
- 20.3 Secura™ Flooring has been tested by CSIRO to ISO 9239-1, in accordance with the requirements of NZBC Acceptable Solution C/AS2, Appendix C2.1 [a].

Other Investigations

- 21.1 Durability and fire opinions have been provided by BRANZ technical experts.
- 21.2 Site visits have been carried out by BRANZ to assess the practicability of installation, and to examine completed installations.
- 21.3 The Technical Literature for Secura™ Flooring has been reviewed by BRANZ and found to be satisfactory.

Quality

- 22.1 The manufacture of Secura™ Flooring has been examined by BRANZ, including methods adopted for quality control. Details of the manufacturing processes, and quality and composition of the raw materials used were obtained and found to be satisfactory. The quality management systems of James Hardie Australia Pty Ltd have been assessed and registered as meeting the requirements of ISO 9001.
- 22.2 The quality of materials, components and accessories supplied by James Hardie New Zealand Limited is the responsibility of James Hardie New Zealand Limited.
- 22.3 Quality on-site is the responsibility of the installer.
- 22.4 Designers are responsible for the building design, and building contractors are responsible for the quality of installation of the floor structure, Secura™ Flooring and accessories in accordance with the instructions of James Hardie New Zealand Limited.
- 22.5 Waterproofing membrane and floor covering suppliers are responsible for the quality of installation of the membrane and floor coverings in accordance with the instructions of the manufacturer.



22.6 Building owners are responsible for the maintenance of Secura™ Flooring and applied finishes in accordance with the instructions of James Hardie New Zealand Limited.

Sources of Information

- AS/NZS 1170:2002 Structural design actions.
- AS/NZS 2908.2 Cellulose-cement products – Flat sheet.
- AS/NZS 4858:2004 Wet area membranes.
- ISO 9239-1:2010 Reaction to fire tests for flooring - Part 1: Determination of the burning behaviour using a radiant heat source.
- NASH Standard Part Two: 2019 Light steel-framed buildings.
- NZS 3604:2011 Timber-framed buildings.
- NZS 3603:1993 Timber structures standard.
- Ministry of Business, Innovation and Employment Record of amendments - Acceptable Solutions, Verification Methods and handbooks.
- The Building Regulations 1992.



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SECURA™ FLOORING



BRANZ

In the opinion of BRANZ, **Secura™ Flooring** 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 quality of work;
 - 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

Claire Falck

Chief Executive

Date of Issue:

20 February 2025