



BRANZ Appraised
Appraisal No. 1217 [2022]

LAMINEX SUPERPINE™ PARTICLEBOARD FLOORING

Appraisal No. 1217 [2022]

Amended 29 September 2022



Edition 1.0 03.22

Laminex™
NEW ZEALAND

BRANZ Appraisals

Technical Assessments of
products for building and
construction.

Laminex™
NEW ZEALAND

Laminex New Zealand

810 Great South Road
Penrose
Auckland
Tel: 0800 303 606
Web: www.laminex.co.nz



BRANZ

1222 Moonshine Rd,
RD1, Porirua 5381
Private Bag 50 908
Porirua 5240,
New Zealand
Tel: 04 237 1170
branz.co.nz



Product

- 1.1 Laminex SuperPine™ Particleboard Flooring is an engineered woodpanel flooring material for the interior flooring of residential and commercial buildings.
- 1.2 Laminex SuperPine™ Particleboard Flooring is available in both square edge and tongue and groove options.

1.2 Scope

- 2.1 Laminex SuperPine™ Particleboard Flooring has been appraised for use as sheet flooring material on:
 - suspended timber-framed floors that have been designed and constructed in accordance with NZS 3604, Section 7; or,
 - steel-framed intermediate floors that have been designed and constructed in accordance with NASH Standard Part 2, Section 8.
- 2.2 Laminex SuperPine™ Particleboard Flooring has also been appraised for use as an overlay in non-wet areas on concrete slab-on-ground floors, suspended concrete floors and suspended timber floors.

Building Regulations

New Zealand Building Code (NZBC)

- 3.1 In the opinion of BRANZ, Laminex SuperPine™ Particleboard 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. Laminex SuperPine™ Particleboard 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 8.1-8.8.

Clause B2 DURABILITY: Performance B2.3.1 (a) not less than 50 years and B2.3.1 (b) 15 years. Laminex SuperPine™ Particleboard Flooring meets these requirements. See Paragraphs 9.1-9.3.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Laminex SuperPine™ Particleboard Flooring meets this requirement. See Paragraphs 13.1 and 13.2.

Technical Specification

Laminex SuperPine™ Particleboard Flooring

- 4.1 Laminex SuperPine™ Particleboard Flooring is manufactured from wood particles of various wood species, predominantly radiata pine. The wood particles are bonded together with a melamine urea formaldehyde [MUF] resin.
- 4.2 The product is available with either square edges or with tongue and groove edges. The tongue and groove option has the long edges factory grooved with a 4.5 mm wide and 9.5 mm deep slot. One edge is fitted with a rigid opaque white polypropylene tongue. This forms a tongue and groove [shear key] joint between adjacent sheets.
- 4.3 At manufacture, the sheets have an average density of 690 kg/m³ and an average moisture content of 7.5%. Laminex SuperPine™ Particleboard Flooring is supplied in sheet sizes of 3,600 x 1,200 x 20 mm and 2,400 x 1,200 x 20 mm. The 3,600 mm long sheets have a panel weight of 60 kg and the 2,400 mm long sheets have a panel weight of 40 kg. Laminex New Zealand also supply jumbo sheets to approved customers. The jumbo sheets are approximately 7,350 mm long x 2,450 mm wide and weigh approximately 250 kg.
- 4.4 The product is manufactured to the following tolerances*:
- Thickness ±0.2 mm.
 - Length and width ±2 mm.
 - Squareness 0.5 mm/m.
 - Sheet edges 1 mm/m maximum deviation from the line.

** Jumbo sheets are not supplied to the above tolerances. They need to be trimmed by the approved customer to their requirements.*

Accessories

- 4.5 Accessories used with Laminex SuperPine™ Particleboard Flooring, which are supplied by the contractor are:
- **Timber frame fixings** - hot-dip galvanised or stainless steel 60 mm x 2.8 or 3.1 mm annular-grooved flooring or jolt head nails; or 45 mm x 8 g screws that comply with AS 3566.1 or Simpson Strong-Tie WSV Subfloor #10 x 50 mm screws [WSV50SA].
 - **Steel frame fixings** - 45 mm x 10 g Tek self-drilling corrosion resistant screws.
 - **Adhesive** - BRANZ appraised adhesive suitable for adhering timber sheet material to timber or steel framing or concrete as required.

Handling and Storage

- 5.1 Laminex SuperPine™ Particleboard Flooring must not be stored on wet concrete floors. Sheets must always be block-stacked on bearers at maximum 1,200 mm centres. For short-term storage, sheets must be protected from the weather with a breather-type cover which is supported clear of the sheet surface on battens, so that air can circulate freely around the stack.
- 5.2 For long-term storage, Laminex SuperPine™ Particleboard Flooring must be stored inside, in well-ventilated, dry conditions.

Technical Literature

- 6.1 This Appraisal must be read in conjunction with:
- SuperPine™ Particleboard Flooring Technical Manual, Edition 3.0, dated October 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

General

- 7.1 Laminex SuperPine™ Particleboard Flooring may be used as pre-laid or post-laid flooring for suspended timber floors designed to Section 7 of NZS 3604 or intermediate steel floors designed to Section 8 of NASH Standard Part 2. Laminex SuperPine™ Particleboard Flooring may also be used as a flooring overlay to concrete slab-on-ground floors and suspended concrete or timber floors.
- 7.2 When flooring is pre-laid, care must be taken in the planning and construction stages to ensure the building is closed in within the maximum exposure period of eight weeks. If this is unlikely, then the flooring must be post-laid.
- 7.3 When pre-laid, an expansion gap of 40 mm is required at 15 m intervals over double joists or blocking. This 40 mm gap is filled after closing in. A minimum 8 mm clearance must be provided between panel edges and fixed objects such as bottom plates, columns, abutting concrete, etc.
- 7.4 For timber and steel joists, the use of a construction adhesive is recommended in conjunction with mechanical fasteners, to help eliminate floor system movement, which could result in undesirable noise [squeaking].

Laminex SuperPine™ Diaphragm Floors

- 7.5 Where Laminex SuperPine™ square edge sheets are used for diaphragm floors, the joist spacing supporting the sheets must be no greater than 600 mm centres. Where Laminex SuperPine™ tongue and groove sheets are used, the joist spacing supporting the sheets must be no greater than 450 mm centres. The sheets must be laid with the long edges perpendicular to the joists and the short edges coincident with the joists. The nailing pattern to be used in fixing these sheets down must be in accordance with the Technical Literature.

Subfloor Ventilation

- 7.6 Where Laminex SuperPine™ Particleboard Flooring is laid over a timber subfloor framing system, all timber and flooring must be protected against damage from ground water moisture in accordance with all 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. In calculating the required number of vents, only the open unobstructed area of each vent unit shall be taken into account. Hot-air, steam systems, and relief or overflow pipes must not vent or drain into subfloor areas. To allow for adequate ventilation and access, a minimum clearance of 550 mm between the surface of the ground and the underside of the Laminex SuperPine™ Particleboard Flooring is required.

Concrete Floors

- 7.7 Concrete slab-on-ground floors, where Laminex SuperPine™ Particleboard Flooring is to be used as a flooring overlay, must be constructed using protective damp-proof membranes in accordance with NZS 3604, Section 7.5. The concrete surface must not deviate by more than 5 mm over 3 m. In addition, the substrate must be sound, dust free and dry. The relative humidity of air at the concrete surface must not exceed 75% prior to installation. Relative humidity must be determined in accordance with BRANZ Bulletin No. 585. It is important that where a construction joint exists in a concrete slab, a joint must also be formed in the flooring directly above.

Finishing

- 7.8 Laminex SuperPine™ Particleboard Flooring must be finished by sealing the surface, or finishing with a polyurethane coating system or other floor covering, as detailed in the Technical Literature, before occupancy.

Wet Areas

- 7.9 Laminex SuperPine™ Particleboard Flooring is not recommended for use in bathrooms or showers. For these areas, Laminex New Zealand recommend the use of Strandfloor® H3.1 Flooring. Refer to BRANZ Appraisal No. 677 for more information.
- 7.10 For other areas which contain a water supply system, such as laundries, sanitary compartments, and kitchen, Laminex SuperPine™ Particleboard Flooring must be protected with an impervious finish.
- 7.11 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.

Exposure

- 7.12 Due to rain wetting before closing in, it may be possible for the moisture content of the pre-laid sheets to temporarily exceed the 18% level given in NZBC Acceptable Solution E2/AS1, Paragraph 10.2 c]. Under normal circumstances, when used and installed as required by this Appraisal and the Technical Literature, this level of temporary wetting of Laminex SuperPine™ Particleboard Flooring is acceptable.

Structure

Density and Mass

- 8.1 Laminex SuperPine™ Particleboard Flooring sheets have a density of approximately 690 kg/m³ and a surface mass of approximately 13.8 kg/m². The sheets are therefore considered a light flooring in terms of NASH Standard Part 2.

Loads

- 8.2 Laminex SuperPine™ Particleboard Flooring will support loads of up to 2 kPa in buildings built within the scope of NZS 3604 with maximum floor joist spacing of 600 mm centres. Point loads may reduce allowable floor joist spacing, please refer to the Floor Design section of the Technical Literature.
- 8.3 For steel-framed floors, Laminex SuperPine™ Particleboard Flooring will support floor loads of up to 2 kPa in buildings built within the scope of NASH Standard Part 2 with a maximum floor joist spacing of 600 mm.
- 8.4 Floors built outside the scope of NZS 3604 or NASH Standard Part 2 have not been assessed and are outside the scope of this Appraisal. These floors must be subject to specific design and Laminex New Zealand must be consulted for relevant design information, strength and stiffness.
- 8.5 For typical NZS 3604 and NASH Standard Part 2 applications pre-laid over supports at the above spacings, the stiffness of the Laminex SuperPine™ Particleboard Flooring will still be acceptable after exposure to the weather for eight weeks. Post-laying of sheets avoids any loss in stiffness which may occur as a result of weathering.

Structural Diaphragms

- 8.6 Laminex SuperPine™ Particleboard Flooring has been appraised for use as a sheet material for diaphragms to resist lateral loads in NZS 3604 and NASH Part 2 buildings. Such diaphragms must be detailed as required by Clause 7.3 of NZS 3604 or Section 5.5.3 of NASH Standard Part 2 and the Technical Literature. Refer to the Technical Literature for suitable fastener types and fixing patterns for structural diaphragm floors.

Heat

- 8.7 Over-floor heating systems may be used with Laminex SuperPine™ Particleboard Flooring provided it is not subjected to a temperature exceeding 35°C.
- 8.8 Laminex SuperPine™ Particleboard Flooring must not be subjected to temperatures exceeding 50°C for prolonged periods.

Durability

- 9.1 Laminex SuperPine™ Particleboard 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, and the performance requirements of NZBC Clause B2.3.1 (b) at least 15 years in other situations.

Serviceable Life

- 9.2 Flooring systems based on Laminex SuperPine™ Particleboard 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 eight weeks; and,
 - Appropriate measures have been taken to ensure the moisture content of the flooring is controlled in accordance with the provisions of NZBC Acceptable Solutions E2/AS1 and E3/AS1, the Technical Literature and this Appraisal.; and,
 - The flooring has not been exposed to further weathering, or subjected to water immersion, e.g. flooding, or to sub-zero temperatures while in a wet condition.
- 9.3 When sheets are used as a floor overlay fixed directly over concrete floors and the sheets do not perform any structural function (i.e. support loads), the NZBC does not require a minimum serviceable life for the covering. However, where slab-on-ground floors are permanently protected from ground moisture in accordance with NZS 3604, Section 7.5, a serviceable life of over 50 years is still possible.

Maintenance

- 10.1 Adequate subfloor ventilation for timber-framed suspended ground floors 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.

Prevention of Fire Occurring

- 11.1 Separation or protection must be provided to Laminex SuperPine™ Particleboard Flooring from heat sources such as fireplaces, heating appliances, flues 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.
- 11.2 The serviceable life of the product may be affected if the surface temperature exceeds 50°C for long periods. Fuel-burning appliance manufacturers must therefore be consulted to ascertain the clearances or protection required to ensure that a 50°C surface temperature is not exceeded. Clearances specified in Part 7 of NZBC Verification Method C/VM1 and Acceptable Solution C/AS1, and NZBC Acceptable Solution C/AS2 may not be sufficient for some appliances.

Fire Affecting Areas Beyond the Fire Source

- 12.1 Laminex SuperPine™ Particleboard Flooring can be used as flooring in Risk Group SH dwellings, which have no specific fire requirements under the NZBC.
- 12.2 For Risk Groups other than SH, surface finish requirements for floors are given in NZBC Acceptable Solution C/AS2, Paragraph 4.17.3.
- 12.3 Laminex SuperPine™ Particleboard Flooring with a waterborne or solvent borne applied surface coating not more than 0.4 mm thick and not more than 100 g/m² has a Critical Radiant Flux of 2.2 kW/m² based on NZBC Verification Method C/VM2 Appendix B Table B1.

Hazardous Building Materials

- 13.1 When installed and covered, the level of formaldehyde emission from Laminex SuperPine™ Particleboard Flooring will be tolerable for most occupants in buildings with an adequate level of ventilation provided in accordance with NZBC Performance Provision G4.3.1.
- 13.2 The level of formaldehyde emission will decrease with time. After installation, emission levels will be controlled by ventilation together with the sealing of the surface or finishing with a polyurethane system, or the use of coverings such as tiles, vinyl or carpets with foam or rubber underlays. Floor coverings and furniture may also themselves be sources of formaldehyde. Covering or sealing of the sheets must be carried out before the building is occupied.

Energy Efficiency

- 14.1 For the purposes of calculating the building performance index of the building envelope (refer to NZBC Clause H1.3.2) the R-value of Laminex SuperPine™ Particleboard Flooring 20 mm sheets should be taken as 0.17 m²K/W.

Installation Information

Installation Skill Level Requirement

- 15.1 All design and building work must be carried out in accordance with the Laminex SuperPine™ Particleboard Flooring Technical Literature and this Appraisal by competent and experienced tradespersons conversant with Laminex SuperPine™ Particleboard Flooring. 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.

General

- 16.1 General installation of Laminex SuperPine™ Particleboard Flooring must be in accordance with the Technical Literature and the provisions of this Appraisal.
- 16.2 It does not generally matter which way up the Laminex SuperPine™ Particleboard Flooring sheets are laid. If the floor is to be finished with a clear finish, then all Laminex SuperPine™ Particleboard Flooring sheets should be laid with the printed face down.
- 16.3 Laminex SuperPine™ Particleboard Flooring tongue and groove sheets do not need blocking under the tongue and groove joint. Otherwise all sheets must be supported at all edges and ends, which may require additional blocking to be installed.
- 16.4 Each sheet of Laminex SuperPine™ Particleboard Flooring must span at least two floor joist spans (i.e. be continuous over three joists), except at floor edges where infill sheets may be required.
- 16.5 The moisture content of the timber floor framing must not exceed 18% when Laminex SuperPine™ Particleboard Flooring is installed.
- 16.6 On timber-framed floors, Laminex SuperPine™ Particleboard Flooring must be fixed with 60 x 3.1 or 2.8 mm hot-dip galvanised or stainless steel, annular-grooved flooring nails, or 45 x 8 g screws (non-diaphragm applications only) at 150 mm centres around the perimeter of the sheets, and at 200 mm centres at intermediate supports. Nails may be power or hand driven but must be parallel with, and no closer than 10 mm to the edge of the sheet.
- 16.7 On steel-framed floors, Laminex SuperPine™ Particleboard Flooring must be fixed with 50 mm x 10 g Tek screws (non-diaphragm applications only) at 150 mm centres around the perimeter of the sheets, and at 200 mm centres at intermediate supports. Screws must be no closer than 10 mm to the edge of the sheet.
- 16.8 When Laminex SuperPine™ Particleboard Flooring is used as a diaphragm floor, then fixing must be in accordance with the Technical Literature. This requires the supporting joists to be at no more than 600 mm centres for square edges sheets and 450 mm maximum centres for tongue and groove sheets.
- 16.9 Where used as an overlay to timber substrates, the moisture content of the substrate must not exceed 15%.

- 16.10 Existing timber floor substrates must be re-punched and then coarse sanded flat prior to fixing the sheets in place.
- 16.11 When used as an overlay on timber substrates or as a second layer over a pre-laid single layer, sheets must be fixed with mechanical fasteners or adhesive with fasteners, ensuring that sheet joints do not coincide with joints in the substrate.
- 16.12 Where used as an overlay to tongue and groove timber flooring, the joints in the Laminex SuperPine™ Particleboard Flooring must not coincide with the joints in the tongue and groove flooring.
- 16.13 Where used as an overlay to concrete, the concrete surface must not deviate by more than 5 mm over 3 m. In addition, the substrate must be sound, dust free and dry. The relative humidity of air at the concrete surface must not exceed 75% prior to installation. Relative humidity must be determined in accordance with BRANZ Bulletin No. 585. As a general guide for new concrete slabs, one month of drying time must be allowed for each 25 mm thickness of concrete.
- 16.14 When used as an overlay on concrete, sheets must be bonded using a full spread of approved adhesive [see the Technical Literature].
- 16.15 Continuously-laid bottom plates to walls in pre-laid situations must be cut away at openings as soon as possible, in order to allow ponded water to drain or be removed.
- 16.16 Protection required to prevent damage to the flooring during other construction processes must be provided in a manner which allows sheets exposed to the weather to dry quickly. For this reason, temporary weather protection such as plastic sheeting or liquid sealers must not be used directly on sheet surfaces.

Finishing

- 17.1 Covering or sealing of the Laminex SuperPine™ Particleboard Flooring must be carried out after the building is fully closed-in but before it is occupied. Details for finishing are provided in the Technical Literature.
- 17.2 Covering or sealing must not be carried out until the moisture content of the flooring is less than 15%.
- 17.3 Some coating and adhesive manufacturers may require lower moisture contents for optimum performance when their products are used on Laminex SuperPine™ Particleboard Flooring. The instructions of these manufacturers must be followed when their products are used on Laminex SuperPine™ Particleboard Flooring.

Health and Safety

- 18.1 Exposure to wood dust may cause irritation to the respiratory system and skin and may cause sensitisation resulting in asthma, and by skin contact resulting in dermatitis. A dust mask and eye protection must be worn when working with Laminex SuperPine™ Particleboard Flooring. Work areas must be ventilated and kept clean. Machinery used must be fitted with dust extractors. Off-cuts, shavings and dust must be disposed of in accordance with the requirements of local authorities.

Basis of Appraisal

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

Tests

- 19.1 The change in the physical properties of the Laminex SuperPine™ Particleboard Flooring, such as modulus of rupture, modulus of elasticity, internal bond strength, thickness swell and surface water absorption after natural weathering have been determined by BRANZ.
- 19.2 The density, modulus of rupture, modulus of elasticity, internal bond, and deflection under concentrated load [stiffness] of Laminex SuperPine™ Particleboard Flooring have been determined by BRANZ.
- 19.3 Strength capacity and deflection under concentrated load [stiffness] of Laminex SuperPine™ Particleboard Flooring exposed to the weather for eight weeks, have been determined by BRANZ.
- 19.4 The thermal resistance of Laminex SuperPine™ Particleboard Flooring has been determined by BRANZ.
- 19.5 Formaldehyde emission levels have been determined by testing to AS/NZS 4266.1. The results of these tests have been reviewed by BRANZ and found to be satisfactory.

Other Investigations

- 20.1 The Technical Literature for Laminex SuperPine™ Particleboard Flooring has been reviewed by BRANZ and found to be satisfactory.

Quality

- 21.1 The manufacture of Laminex SuperPine™ Particleboard 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.
- 21.2 The quality management systems of the Laminex SuperPine™ Particleboard Flooring production have been assessed and registered by QAS International Ltd as meeting the requirements of ISO 9001.
- 21.3 Laminex New Zealand is responsible for the quality of the product supplied.
- 21.4 Quality of installation of the product on-site is the responsibility of the installer.
- 21.5 Maintenance of the flooring system is the responsibility of the building owner.

Sources of Information

- AS 3566.1:2002 Self-drilling screws for the building and construction industries.
- AS/NZS 1170:2002 Structural design actions.
- AS/NZS 4266.1:2017 Reconstituted wood-based panels – Methods of testing – Part 1: Base panels.
- BRANZ Bulletin Issue 585 Measuring moisture in timber and concrete.
- NASH Standard Part Two: Light Steel-framed Buildings.
- NZS 3604:2011 Timber-framed buildings.
- Ministry of Business, Innovation and Employment Record of amendments – Acceptable Solutions, Verification Methods and handbooks.
- The Building Regulations 1992.

Amendments

Amendment No.1, dated 12 May 2022.

This Appraisal has been amended to add a jumbo sheet size option.

Amendment No.2, dated 29 September 2022.

This Appraisal has been amended to add tongue and groove sheets.



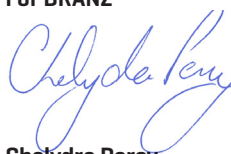
In the opinion of BRANZ, **Laminex SuperPine™ Particleboard Flooring** is fit for purpose and will comply with the Building Code to the extent specified in this Appraisal provided it is used, designed, installed and maintained as set out in this Appraisal.

The Appraisal is issued only to **Laminex New Zealand**, 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. **Laminex New Zealand:**
 - 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 **Laminex New Zealand**.
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 **Laminex New Zealand** or any third party.

For BRANZ



Chelydra Percy
Chief Executive

Date of Issue:
04 May 2022