



BRANZ Appraised

Appraisal No. 986 [2023]

NORTHBEAM SOLID TIMBER BEAMS, POSTS AND JOISTS

Appraisal No. 986 [2023]

This Appraisal replaces BRANZ
Appraisal No. 986 [2017]



BRANZ Appraisals

Technical Assessments of
products for building and
construction.



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Product

- 1.1 Northbeam Solid Timber Beams, Posts and Joists are a range of preservative treated, solid radiata pine timber suitable for use as structural and non-structural timber framing for use in buildings and construction. The Northbeam timber range is available in sizes of up to 400 x 400 mm and can also be supplied in custom sizes or profiles to order.

Scope

- 2.1 Northbeam Solid Timber Beams, Posts and Joists are appraised for use as structural and non-structural timber framing in buildings within the following scope:
 - in timber-framed buildings designed and constructed in accordance with NZS 3604; and,
 - as structural timber members in buildings subject to specific engineering design.
- 2.2 Northbeam Solid Timber Beams, Posts and Joists are preservative treated and appraised for use as wood-based building components as detailed within NZBC Acceptable Solution B2/AS1.

Building Regulations

New Zealand Building Code (NZBC)

- 3.1 In the opinion of BRANZ, Northbeam Solid Timber Beams, Posts and Joists, 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 B1.3.3. Northbeam Solid Timber Beams, Posts and Joists meet the requirements for loads arising from self-weight, imposed gravity loads arising from use, earthquake, snow and wind [i.e. B1.3.3 (a), (b), (f), (g) and (h)]. See Paragraphs 8.1 and 8.2.

Clause B2 DURABILITY: Performance B2.3.1 (a) 50 years. Northbeam Solid Timber Beams, Posts and Joists meet this requirement. See Paragraph 9.1.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Northbeam Solid Timber Beams, Posts and Joists meet this requirement.



Technical Specification

- 4.1 Northbeam Solid Timber Beams, Posts and Joists, supplied by Northpine Limited, are available in various treatment hazard classes - H1.2, H3.2, H4 and H5, and as sawn or machine-gauged finish and either as kiln-dried or wet.
- 4.2 Northbeam Solid Timber Beams, Posts and Joists range includes timber sizes ranging from 70 x 45 mm to 400 x 400 mm, and can also be supplied in custom sizes or profiles to order to suit specific projects or end uses.
- 4.3 All product within the Northbeam Solid Timber Beams, Posts and Joists range is structurally graded, either by visual grading or stress grading and is available in number one framing, SG8, SG10 or SG12 grades.

Handling and Storage

- 5.1 Northbeam Solid Timber Beams, Posts and Joists must be stacked flat, off the ground and supported on a level platform. All dried timber is wrapped in LDPE polyethylene sheet for temporary protection from rain wetting following production, and to minimise splitting and checking. It is recommended that moisture uptake of the timber before and during construction be prevented or minimised where practically possible, and care must be taken to avoid damage to the timber in transit and storage.

Technical Literature

- 6.1 This Appraisal must be read in conjunction with:
 - Northbeam Product list, dated February 2023.
- 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 Northbeam Solid Timber Beams, Posts and Joists are available as stress graded timber, either by visual grading or stress grading, and are available in number one framing, SG8, SG10 or SG12 grades, with grading in accordance with NZS 3622 or NZS 3631. Products in the Northbeam range are preservative treated to various hazard classes in accordance with NZS 3640, including H1.2, H3.2, H4 and H5, and are suitable for use in situations where permitted by NZBC Acceptable Solution B2/AS1.
- 7.2 Markings and identification on Northbeam Solid Timber Beams, Posts and Joists include the stress or visual grade of the timber, the grading standard used to determine grade, the type and level of preservative treatment applied, and indicate whether it is machine gauged or kiln dried. Timber which has been grade verified also features the 'Grade Verified' branding, signifying that the timber grading process at Northpine is monitored by Grade Right [NZ] Ltd, who administer 'Grade Right', a third-party quality assurance scheme to which membership is voluntary.

Structure

Non-Specific Engineering Design

- 8.1 Northbeam Solid Timber Beams, Posts and Joists are able to be used in structural applications in accordance with NZS 3604. Number one framing grade timber is considered by NZS 3604 to be SG6 grade when designing in accordance with the standard. Spans and member sizes shall be taken from the corresponding tables in the standard for timber grade for SG6, SG8 or SG10. SG12 timber can be used in applications in accordance with NZS 3604 in equivalent sizes to those specified in NZS 3604 for SG6, SG8 or SG10 members. Owing to the increased strength characteristics of SG12 graded timber, reduced amounts of deflection can be anticipated arising from in-service loadings when compared to members made of SG6, SG8 or SG10 grade timber.

Specific Engineering Design

- 8.2 Northbeam Solid Timber Beams, Posts and Joists may be used as individual structural members by way of specific engineering design using the appropriate Standards in NZBC Verification Method B1/VM1, and the characteristic material properties for radiata pine given in NZS 3603.

Durability

Serviceable Life

- 9.1 Northbeam Solid Timber Beams, Posts and Joists, when used in situations and with preservative treatments as detailed within NZBC Acceptable Solution B2/AS1, are expected to have a serviceable life in excess of 50 years.

Maintenance

- 10.1 There are no maintenance requirements for Northbeam Solid Timber Beams, Posts and Joists. Maintenance however must be carried out on the building's external envelope and internal lining system to ensure that they continue to satisfy the performance requirements of NZBC Clauses E2 and E3.
- 10.2 Where Northbeam Solid Timber Beams, Posts and Joists have been exposed to leaks which have gone undetected for extended periods of time, remedial work to remedy any water damage should include inspection of structural framing by a Licensed Building Practitioner to determine that the timber is free of decay and is suitable for continued service.

Prevention of Fire Occurring

- 11.1 Separation or protection must be provided to Northbeam Solid Timber Beams, Posts and Joists 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.

Installation Information

Installation Skill Level Requirement

- 12.1 Installation of Northbeam Solid Timber Beams, Posts and Joists must be completed by, or under the supervision of, a Licenced Building Practitioner with the relevant Licence Class, in accordance with the Technical Literature and this Appraisal.

General

- 13.1 After completion of the structural framing of a building, Northbeam Solid Timber Beams, Posts and Joists (framing) that is to be enclosed behind interior linings shall be dry with a maximum moisture content of either 20 % or that specified by the lining material proprietor, whichever is the less, prior to the installation of interior linings.

Aesthetics and Finishing

- 13.2 Northbeam Solid Timber Beams, Posts and Joists are produced to a high technical standard with appropriate grading that identifies and discards timber containing unacceptable inherent defects that are found in solid timber. All dried timber is wrapped in LDPE polyethylene sheet for temporary protection from rain wetting following production and to minimise splitting and checking, a natural characteristic of pine. Solid timber is also prone to movement after installation and throughout its serviceable life due to changes or fluctuations in temperature, humidity and moisture content within the environment in which it is situated. These issues may affect the visual characteristic or other qualities of the finished construction. It is recommended that the contractor exercise judgement and have a sound understanding of the behaviour of solid timber when selecting timber or carrying out construction in cases where aesthetic value and finishing is of high importance. Aesthetics and finishing of Northbeam Solid Timber Beams, Posts and Joists have not been assessed and are outside the scope of this Appraisal.



Health and Safety

- 14.1 Personal protective equipment must be used when working with treated timber to prevent contact with treated timber. Skin and eye protection should be worn and a mask used to prevent inhalation of dust when cutting or drilling timber. Timber off-cuts, shavings and other treated timber residue must be disposed of in an approved landfill.
- 14.2 Treated timber off-cuts must not be burnt.

Basis of Appraisal

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

Investigations

- 15.1 Northbeam Solid Timber Beams, Posts and Joists Technical Literature has been examined by BRANZ and found to be satisfactory.
- 15.2 Audits of timber grading and treatment processes at Northpine, completed by Grade Right (NZ) Ltd, have been reviewed by BRANZ and found to be satisfactory.

Quality

- 16.1 Northpine Limited's sawmilling processes and details of the grading and treatment processes have been examined by BRANZ and found to be satisfactory.
- 16.2 Northpine Limited is responsible for the quality of the product supplied.
- 16.3 The quality of the application of Northbeam Solid Timber Beams, Posts and Joists and any subsequent finish on-site is the responsibility of the contractors.
- 16.4 Designers are responsible for the design of buildings.
- 16.5 Building owners are responsible for the maintenance in accordance with this Appraisal.

Sources of Information

- AS/NZS 1170:2002 Structural design actions.
- AS/NZS 1748.1:2011 Timber – Solid – Stress-graded for structural purposes – General Requirements.
- AS/NZS 1748.2:2011 Timber – Solid – Stress-graded for structural purposes – Qualification of grading methods.
- NZS 3602:2003 Timber and wood-based products for use in building.
- NZS 3603:1993 Timber structures standard.
- NZS 3604:2011 Timber-framed buildings.
- NZS 3622:2004 Verification of timber properties.
- NZS 3631:1988 New Zealand timber grading rules.
- NZS 3640:2003 Chemical preservation of round and sawn timber.
- Ministry of Business, Innovation and Employment Record of amendments – Acceptable Solutions, Verification Methods and handbooks.
- The Building Regulations 1992.



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30 November 2023

NORTHBEAM SOLID TIMBER
BEAMS, POSTS AND JOISTS



In the opinion of BRANZ, **Northbeam Solid Timber Beams, Posts and Joists** are fit for purpose and will comply with the Building Code to the extent specified in this Appraisal provided they are used, designed, installed and maintained as set out in this Appraisal.

The Appraisal is issued only to **Northpine 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. **Northpine 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 **Northpine 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 **Northpine Limited** or any third party.

For BRANZ

Claire Falck

Chief Executive

Date of Issue:

30 November 2023