

**Product Technical Statement
Lumberworx I-Beams**



Issuing Company	Lumberworx Ltd 9 Yukon Place, Hornby, Christchurch 03 349 0515
Product	This PTS covers LIB 200.88s - LIB 240.88s - LIB 300.88s - LIB 360.88s
Product Description	<p>The Lumberworx I-Beam (LIB) is an engineered 'I' shaped structural timber member for use in residential, industrial and commercial construction in place of sawn timber.</p> <p>Lumberworx I-Beams are fabricated with Laminated Veneer Lumber (LVL) top and bottom flanges and a strandboard web by JNL. These radiata pine engineered wood components are bonded with a resorcinol structural adhesive rated for service class 3 as defined in AS/NZS4364:2010 Timber Bond Performance of Structural Adhesives.</p> <p>Lumberworx I-Beams are identified by the prefix LIB plus the height and width of the beam in mm. The suffix "s" denotes the strandboard web to differentiate from earlier variants.</p>
Scope of Use	<p>Lumberworx I-Beams can be used in buildings within the scope of NZS3604 as structural members such as floor joists, ceiling joists, rafters and purlins anywhere within the building where H1.2 hazard class applies.</p> <p>Maximum spans are those specified in the Lumberworx Design and Construction Guide; this is a comprehensive document specifying spans under specific loadings and the fixing details for Lumberworx I-Beams. This can be downloaded from the Lumberworx web site www.lumberworx.co.nz</p> <p>Specific Design for applications outside of the Design and Construction Guide, or under more stringent deflection conditions, may be made using Nelson Pine Design (NPD) electronic design software. NPD has been independently certified for use in New Zealand by a CPEng (see Nelson Pine Industries website www.nelsonpine.co.nz)</p>
Limitations of Use	Lumberworx I-Beams cannot be used outside the scope of NZS3604 or in weather exposed situations.
Installation	Installation of Lumberworx I-Beams must be in accordance with the Lumberworx Design and Construction Guide. This can be downloaded from the Lumberworx web site www.lumberworx.co.nz
Quality Assurance	<p>The Lumberworx quality management system (QMS) is BRANZ approved under Appraisal 545/2007 and remains operative while developing an ISO 10005 compliant QMS.</p> <p>An ISO 10005 compliant QMS is required to achieve CodeMark.</p>

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New Zealand Building Code

Lumberworx I-Beams if installed in accordance with the approved Design and Construction Guide, and designed to the spans contained in the same document or by using Nelson Pine Design (NPD), will meet the following performance clauses of the New Zealand Building Code B1 (Structure) B1.3.1, B1.3.2, B1.3.3 (a, b, c, f, g, h & q).

Lumberworx I-Beams will meet the requirements of Clause B2 of the New Zealand Building (Durability) when installed (also see H1.2 below).

The requirements of Clause F2 – Hazardous Building Materials – will be met and there will be no health hazard to occupants.

Verification

Lumberworx Ltd is the holder of BRANZ appraised document 545/2007; this appraisal does not include the strandboard web but all aspects of the BRANZ approved quality system remain operative while a higher level CodeMark is applied for. All fixing details approved by BRANZ still apply.

Structural compliance (B1) for LIBs with strandboard web has been verified by:

- a. A Chartered Professional engineer after reviewing SCION test results (available on www.lumberworx.co.nz) and by reference to NZS3603
- b. Type testing by SCION in accordance with ASTM D5055-4 "Standard Specification for Establishing and Monitoring Structural Capacities of Prefabricated Wood I-Joists".
- c. Testing of the strandboard web rigidity by SCION in accordance with ASTM D2719 "Standard Test Method for Structural Panels in Shear Through-the-Thickness".

Lumberworx has been manufacturing LIB's since March 2007 when BRANZ issued document 545/2007 and has a good history of manufacturing and use

Durability Compliance (B2) for LIBs has been verified by a Timber Protection consultant including compliance with H1.2 hazard class (available on www.lumberworx.co.nz) and by reference to NZS3640 (A5) and NZS3602

H1.2 Hazard Class

Timber protection is provided using the latest New Zealand technologies specified in NZS 3640(A5) for New Zealand conditions and pinus radiata species (NZS3602) and does not rely on post production solvent based treatments. Treatment of both the flanges and the web are by full penetration systems that do not require sealing after cutting or drilling.

The LVL flanges are treated in-process in accordance with NZS3640 (A5) by the glueline and face treatment for LVL described in CI 6.1.2.

The strandboard web is treated in process by water emulsion in the same manner as the popular JNL H3.1 strandfloor but to a higher level required for H1.2 in accordance with table 6.1 NZS3640 (A5).

(Note H3.1 only meets the minimum requirements of H1.2 hazard class – Reference B2/AS1).

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Product Support

Lumberworx has a range of information and construction details on its website at www.lumberworx.co.nz

Assistance is also available from the Lumberworx technical team for installers (builders), designers (engineers and architects) and BCA's (and officials). Call free on 0508 IBEAMS (0508 423267) for assistance.

Substitution

I-Beam science and engineering principles are common world-wide but all manufacturers products differ in performance due to them being assembled from components (flanges and webs) with varying characteristics (such as stiffness, strength and dimensions). There is no New Zealand standard for I-Beam manufacture.

To ensure compliance with New Zealand Building Code Lumberworx recommends selecting a brand that has been third party certified by a reputable Australasian organisation such as EWPAA, BRANZ or SCION, or has been granted a New Zealand CodeMark.

Lumberworx I-Beams may be substituted for another brand provided certification is supplied to ensure deflections are similar to the original design parameters in which case this would be a "minor variation" under the NZBC as the substitution "....does not deviate significantly from the plans and specifications..."

Lumberworx I-Beams treated to H1.2 hazard class will be more durable than untreated options and H3.1 options.

This statement has been prepared in accordance with MBIE guidelines

Helpful Links

Products: www.lumberworx.co.nz/products/

Guides and Brochures: www.lumberworx.co.nz/guides-and-brochures/guides-and-brochures/

Technical Bulletins: www.lumberworx.co.nz/guides-and-brochures/Technical-Bulletins/

Construction Details: www.lumberworx.co.nz/specifiers-and-design/construction-details/

Span Tables: www.lumberworx.co.nz/specifiers-and-design/span-tables/

Design Service: www.lumberworx.co.nz/specifiers-and-design/design-service/

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