

## LUMBERWORX I-BEAMS

### Product Description

The Lumberworx I-Beam (LIB) is an engineered 'I' shaped structural timber member for use in residential, industrial and commercial construction.

Lumberworx I-Beams are fabricated with Laminated Veneer Lumber (LVL) top and bottom flanges and a strandboard web. These radiata pine engineered wood components are bonded together with a resorcinol structural adhesive rated for service class 3 as defined in AS/NZS4364:2010 Timber Bond Performance of Structural Adhesives.

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.

*The range is: LIB 200.88s - LIB 240.88s - LIB 300.88s - LIB 360.88s*

### Scope of Use

Lumberworx I-Beams can be used in residential and other building types as structural members such as floor joists, ceiling joists, rafters and purlins anywhere within the building where H1.2 hazard class applies.

Each depth of LIB is governed in its span by loadings described in NZS1170 Structural Design Actions

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](http://www.lumberworx.co.nz)

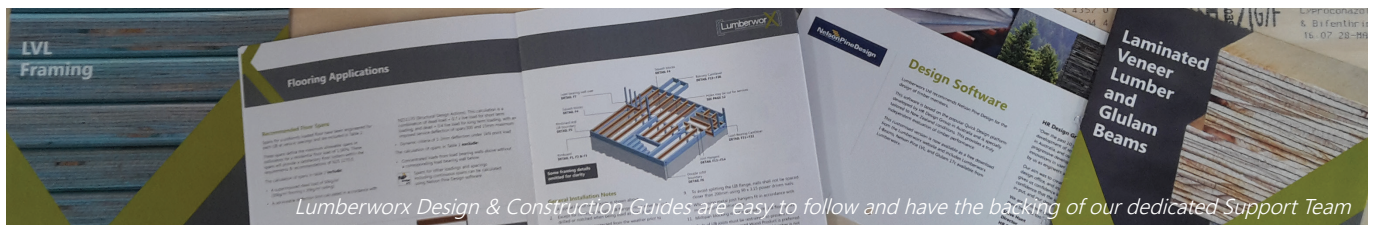
Specific Design for applications outside of the Design and Construction Guide, or under more stringent deflection conditions, may be made using Nelson Pine Design (NPD) electronic design software.

### Limitations of Use

Lumberworx I-Beams cannot be used in weather exposed conditions and for sub-floor use must be in accordance with NZS3604 for ventilation and ground clearance.

### Installation

Installation of Lumberworx I-Beams must be in accordance with the Lumberworx Design and Construction Guide



### 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 Durability of the New Zealand Building Code B2 (Durability) when installed (also see H1.2 below).

## LUMBERWORX I-BEAMS

### 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. NZBC compliance of the LIB with strandboard web has been verified by:

- a. A Chartered Professional engineer in respect of structure after reviewing SCION test results (available on [www.lumberworx.co.nz](http://www.lumberworx.co.nz))
- b. A Timber Protection consultant in respect of durability including compliance with H1.2 hazard class (available on [www.lumberworx.co.nz](http://www.lumberworx.co.nz))
- c. Type testing by SCION in accordance with ASTM D5055-4 "Standard Specification for Establishing and Monitoring Structural Capacities of Prefabricated Wood I-Joists".
- d. Testing of the strandboard web rigidity by SCION in accordance with ASTM D2719 "Standard Test Method for Structural Panels in Shear Through-the-Thickness".

### H1.2 Hazard Class

Timber protection includes the latest New Zealand technologies for New Zealand conditions and pinus radiata species as specified in NZS 3640(A5), 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.

LIB88s 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 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).

### 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 EWPA, 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*