



## LVL AND TREATMENT FOR USE IN BUILDINGS

### - A TECHNICAL NOTE FOR DESIGNERS

This technical note has been created for designers and specifiers to clearly define the compliance paths for Laminated Veneer Lumber (LVL) treatment within the New Zealand Build Code (NZBC) for Clause B2, Durability.

Futurebuild® LVL components can be provided untreated, H1.2 glueline and surface spray treated, or H3.1 LOSP Azole treated as an Acceptable Solution under the NZBC subject to the requirements of NZS 3602, Timber and wood-based products for Use in Buildings (NZS 3602) and NZS 3604, Timber framed buildings.

### NZBC ACCEPTABLE SOLUTION B2/AS1

NZBC Clause B2 – Durability, Acceptable Solution B2/AS1, provides the specific treatment levels (or lack thereof) for products and applications to meet the durability requirements of timber and wood-based building elements in houses. Section 3.2 of B2/AS1 notes:

#### 3.2 Timber and wood-based building products

##### 3.2.1 The following Standards form an Acceptable Solution for B2/AS1...

- a) NZS 3602 Part 1 as modified by paragraph 3.2.2
- b) NZS 3640 as modified by paragraph 3.2.3
- c) NZS 3604, with reference to NZS 3602 (and NZS 3640), as modified by Paragraph 3.2.1 a) and b) above

NZS 3602 delineates the treatment level requirement for individual components in buildings whilst NZS 3640 details the chemicals, penetrations and retentions for treatment plants to achieve the required Hazard Class. NZS 3604 is the Timber-framed building Standard which also details durability requirements, particularly the treatment requirements for engineered wood products when not specifically referenced in NZS 3602, like lintels, studs, etc.

### UNTREATED LVL AS PRESCRIBED BY ACCEPTABLE SOLUTION B2/AS1

LVL has an inherent increased resistance to moisture uptake and decay when compared to sawn timber and as such, in accordance with NZS 3602, can be installed untreated in low risk of moisture penetration applications. These applications include Category C, Members protected from the weather but exposed to ground atmosphere, and Category E, Members not exposed to weather or ground atmosphere and in dry conditions, in Table 1 NZS 3602.

From a compliance perspective, B2/AS1 section 3.2.2.1 (extracted below) notes that the level of treatment required for engineered wood products noted in NZS 3602 remain unaltered and provides a compliant, Acceptable Solution pathway to the NZBC;

*3.2.2.1 Level of treatment references to radiata pine and douglas fir solid timber in Table 1 categories 'C', 'D' and 'E' and Table 2 category 'B' shall be replaced by Tables 1A and 2A below. Table 1A and Table 2A are to be read with NZS 3602 sections 108 to 111 inclusive, with amendments in Paragraph 3.2.2.3 below.*



Other references to radiata pine, douglas fir solid timber and engineered wood products in NZS 3602, including Table 1 categories 'A', & 'B'; Table 2 category 'A'; and Table 3 are unaltered.

LVL can still be provided untreated in situations identified in Table 1 of NZS 3602, sections C and E, with relevant LVL sections extracted below.

**Table 1: C Members protected from the weather but exposed to ground atmosphere (see section 108)**

Ref No.	Wood-based building component	Species or type	In-service moisture range %	Level of treatment*	See clause / section
1C.1	Jackstuds, subfloor braces, bearers, wall plates, floor joists to the sub floor, blocking, subfloor wall studs, walings and battens, wall studs and nogs, diagonal boards	LVL	18 % or less	None	108
1C.3	Interior flooring, suspended ground floors	LVL	18 % or less	None	108.2

\*Level of treatment to NZS 3640 or AS/NZS 1604

**Table 2: E Members not exposed to weather or ground atmosphere and in dry condition (see section 110)**

Ref No.	Wood-based building component	Species or type	In-service moisture range %	Level of treatment*	See clause / section
1E.1	All roof trusses, including gable end trusses, roof, ceiling and eaves framing, purlins and battens excluding skillion roof framing, and sarking described in 1D.1	LVL	18 % or less	None	104.4.3
1E.2	All midfloor framing excluding boundary joists but including associated ceiling framing	LVL	18 % or less	None	104.4.3
1E.3	Unlined buildings except those not allowed in 110.2(f)	LVL	18 % or less	None	104.4.3
1E.5	Internal walls excluding those supporting decks and balconies	LVL	18 % or less	None	

\*Level of treatment to NZS 3640 or AS/NZS 1604

## LEVELS OF TREATMENT FOR LVL AS PRESCRIBED BY ACCEPTABLE SOLUTION B2/AS1

NZS 3602 does not specifically reference any applications where H1.2 and/or H3.1 treatment is required for LVL. B2/AS1 provides a compliance path for the use of LVL in areas where H1.2 treatment is required for applications including wall and roof framing covered by category D, Members protected by weather but with a risk of moisture penetration conducive to decay (see Section 109) via NZS 3604 as detailed below:

*NZS 3604:2011, Timber Framed buildings, section 2.3.9.4 denotes "The preservative treatment for engineered wood products shall comply with NZS 3602 provided however that where engineered wood products are not already specified, the level of treatment shall be the same as that required for kiln-dried radiata pine structural grades to comply with NZS 3602."*



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### TECHNICAL NOTE



From this, H1.2 is required where LVL is not specifically detailed such as in enclosed external framing like lintels, studs, boundary joists, etc.

Two options for H1.2 treated LVL exist in B2/AS1:

1. NZS 3640 includes a H1.2 option for glueline treatment with a surface spray applied at the ripping/post processing stage for LVL.
2. H3.1 LOSP Azole is permitted via Section 3.2.2.1, which notes “Laminated veneer lumber (LVL) treated using LOSP borne azoles as specified for H3.1 in NZS 3640 Table 6.2 satisfies the minimum treatment requirement of H1.2”.

## FUTUREBUILD LVL STOCKING AND MANUFACTURE

Untreated LVL, H1.2 glueline and surface spray treatment, and H3.1 LOSP Azole treatment are all suitable options, subject to the requirements of NZS 3602 and NZS 3604, however, due to warehousing restrictions some treatment options are not available off the shelf.

Solid Futurebuild LVL Sections including hySPAN®, hy90® and hyONE®

Only H1.2 glueline and surface spray treated solid LVL sections are available off the shelf. Untreated solid LVL sections, as well as H3.1 LOSP treatment, are still available but minimum order volumes and lead times may apply.

hyJOIST® treatment availabilities

hyJOIST is stocked in both untreated and H1.2 glueline and surface spray treated LVL sections, both readily available off the shelf. H3.1 LOSP treatment of hyJOIST is available but minimum order volumes and lead times may apply.

## FURTHER INFORMATION AND TECHNICAL SUPPORT

For further information in relation to the use and specification of untreated, H1.2 or H3.1 LOSP treated LVL products, speak to our technical team.

**Contact the Futurebuild® LVL team:**

**Phone:** 0800 808 131 | **Email:** [info@futurebuild.co.nz](mailto:info@futurebuild.co.nz)

For comprehensive technical literature or to learn more about the full Futurebuild LVL range visit [www.futurebuild.co.nz](http://www.futurebuild.co.nz)



MARCH 2019

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