

Product & Information Update TIMBER TREATMENT

Timber Treatment

The Building Code clause B2 *Durability* sets out minimum durability requirements for building materials and components. The expected life depends on the location of the material or element in the building and its function.

Lumberworx structural engineered wood products such as joists, bearers, rafters and studs must have a minimum durability of not less than 50 years.

Where timber may be subjected to moisture in use or is used externally, and it is not a naturally durable species, it must be treated with a wood preservative to make it resistant to decay fungi or wood-boring insects (borer) and render it sufficiently durable.

The requirements for timber use in buildings are defined by NZS 3602:2003 Timber and wood-based products for use in buildings. This standard also specifies the minimum preservative treatment levels for given end uses.

The requirements of specific treatment regimes are contained in NZS 3640:2003 Chemical Preservation of Round and Sawn Timber. It contains detailed treatment specifications, the types of chemicals that may be used, the minimum preservative retention and penetration into the timber, identification of treated timber and quality control requirements.

These standards are cited in Acceptable Solution B2/AS1 which provides verification of compliance with the NZBC.

NZS3640 Amendment 5 (2012/13)

This amendment included the following changes:

- The only treatment for laminated veneer lumber (LVL) is the face and glue line treatment described in clauses 4.5.1, 6.1.2 and table 6.1
- H3.1 LOSP was confirmed as a cladding treatment only with a 15 year durability requirement.

Amend 8
Feb 2014

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 H 1.2.

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15

While H3.1 LOSP is not included in standard NZS3640 as a treatment for LVL, it has been given a dispensation in amendment 8 of Acceptable Solution B2/AS1 with the notation that "laminated veneer lumber (LVL) treated using LOSP Azoles as specified for H3.1 in NZS3640 Table 6.2 satisfies the minimum treatment requirement of H1.2 (see above).

This dispensation cannot be used for other Engineered Wood Products such as Glulam.

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Lumberworx Ltd offers a range of structural engineered wood products suited to the H1.2 Hazard Class.

I-Beams

Lumberworx I-Beams are a New Zealand first meeting the H1.2 hazard class. The product is fabricated from components treated by methods offering the latest timber protection technology.

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. (See Laminated Veneer Lumber (LVL) below).

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).

The active ingredients in the web treatment are Tebuconazole, Propiconazole and Permethrin. These ingredients are food approved fungicides and are applied without the use of solvents and the process results in a full penetration system not requiring resealing after drilling or cutting. The treatment actives are non-corrosive to common timber fasteners

Laminated Veneer Lumber (LVL)

The glueline and face treatment for veneered timber was developed by Zelam (now Lonza) specifically for products such as LVL and plywood. The active ingredients are all well-known biocides registered for use in crop protection.

H1.2 Azotek glueline and face spray treatment is a full penetration system in accordance with NZS 3640 (A5) and an acceptable solution under amendment 8 B2/AS1 of the NZ Building Code. The ingredients are added to the glueline during manufacture to deliver precisely controlled actives throughout the veneer layup, and then outer veneers are face sprayed.

The process contains no solvents and can be cut, notched or drilled without any requirement for re-sealing or re-treating the exposed cut surfaces. The actives in the treatment are non-corrosive to common timber fasteners.

Laminated Strand Lumber (LSL)

LSL is treated with Zinc Borate (ZB) during manufacture. ZB is a white crystalline or amorphous powder insoluble in water and with low toxicity. It is mixed with the timber strands and adhesive during manufacture to create a full penetration treatment of the LSL product.

ZB is not referenced in NZS3640 for H1.2 hazard class but it is included in AS/NZS1604.4 Treatment Methods for Reconstituted Wood Products for treatment to H2 hazard class. Testing by Lumberworx has shown this application in LSL does meet the New Zealand H1.2 hazard class requirements. ZB will have no corrosive effect on common timber fasteners.

Glue Laminated Timber (Glulam)

Lumberworx Ltd offers GL17c product from Australia.

This high stiffness product is manufactured from slash pine (*pinus elliotti*) pre-treated in accordance with NZS3640 (A5) by approved operators in Australia.

The treatment is by boron water emulsion to retention levels described in table 6.1 for H1.2 hazard class

Some imported Glulam is treated to H3 LOSP (Australian hazard class) – this no longer meets B2/AS1 with H3 LOSP now confirmed only as a “cladding” treatment with 15 years durability. **H3 LOSP cannot** be used for structural use under B2/AS1 (except for the LVL dispensation).