



WESBEAM LVL AND E-JOISTS USED INTERNALLY AND EXTERNALLY IN RESIDENTIAL HOUSING



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Introduction

Wesbeam's laminated veneer lumber (LVL and e-joists), can be used in all structural applications where traditional sawn timber has been used. Being engineered timber products, LVL and e-joists are manufactured to meet the specific needs of the residential building industry and are available as both untreated as well as treated products to enhance their durability.

The benefits of LVL and e-joists are due to its reliability, dimensional consistency and long length availability that have seen it now used widely in residential housing from bearers and joists through to roof battens. This wide spread market acceptance has been due to its uniformity of engineering properties, high strength to weight ratio and reliable performance.

LVL and e-joist Products

Wesbeam manufacture a number of LVL and e-joist products in a range of sizes, thicknesses and depths. Some products are for general residential housing applications and others are designed specifically for single purpose applications. The table below lists the various Wesbeam manufactured products, the level of treatment and applications that the products are suited for

Treatment Level	Service Conditions	Wesbeam LVL/ e-joist Products	Typical Residential Housing Applications
Untreated – no termite or fungicide treatment	Inside, above ground. Completely protected from the weather, well ventilated, and protected from termites.	All Wesbeam LVL and e-joist products can be used in these prescribed service conditions	All floor, wall and roof framing applications
e2S – termite protection only (CodeMark certified glue-line treatment)	Inside, above ground. Completely protected from wetting and well ventilated. For use in locations South of the Tropic of Capricorn only.	e-beam	All floor, wall and roof framing applications
		e-purlin	Roof framing
		e-splay	Roof framing
		e-strut	Roof framing
H2 – termite protection only	Inside, above ground. Completely protected from wetting and well ventilated. For use in all geographical locations in Australia.	Wesbeam manufactured e-joists – (with termite treated structural web)	Floor joists and roof rafters
		e-beam	All floor, wall and roof framing applications
H3 – termite and fungicide protection	Outside, above ground. Subject to periodic moderate wetting. For use in all geographical locations in Australia.	Wesbeam manufactured e-joist	Floor joists and roof rafters
		e-beam	All floor, wall and roof framing applications

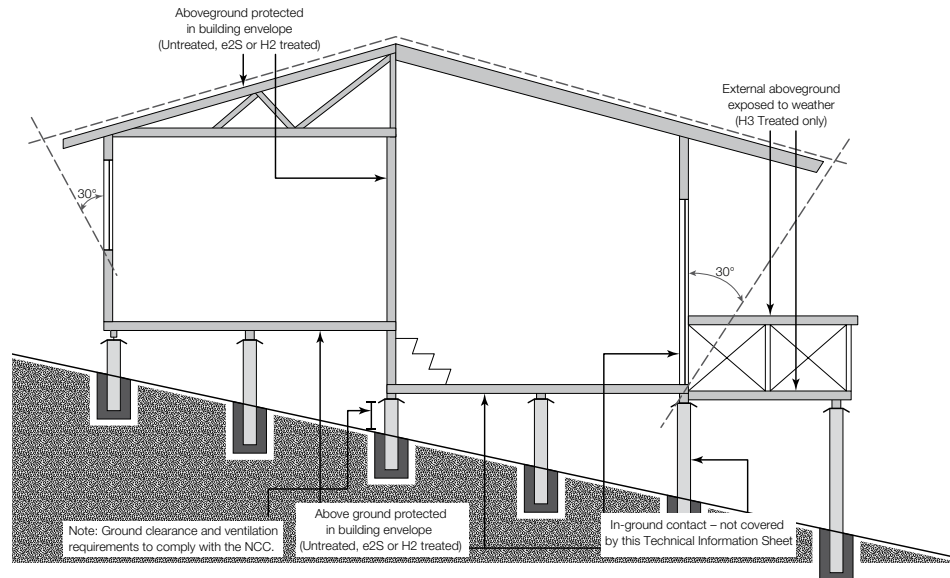
Wesbeam LVL and e-joists Engineered Timber Products

Wesbeam LVL is manufactured by laminating sustainably sourced timber veneers, using phenolic adhesive, in a continuous assembly in which the grain direction of all veneers runs longitudinally.

The veneers are pressed as a 1200mm wide continuous billet in various standard thicknesses (e.g. 35mm, 45mm, 63mm), cut to standard widths and lengths up to 13.2m for use as structural beams and other framing components.

Wesbeam LVL conforms with the requirements of AS/NZS 4357: *Structural Laminated Veneer Lumber* and is manufactured from sustainably sourced Western Australian timbers.

e-beam Options



(1) Untreated LVL

Wesbeam's LVL is manufactured from sustainably sourced timbers that have an above ground natural durability Class 4 or better. It can readily be used within a covered house frame as illustrated above or fully protected from the weather under a roofed structure such as a carport.

(2) Treated LVL and e-joists

A CodeMark certified e2S glue-line preservative treatment is available for Wesbeam's LVL and e-joist products. This preservative treatment comes as a standard level of treatment for the majority of the residential housing products.

If further preservative treatment is desired to enhance the durability of Wesbeam's LVL and e-joists, they can be treated in accordance with AS/NZS1604.1:2021 Preservative-treated wood-based products - Products and treatment to meet the intended durability as described below. This can be carried out at Wesbeam's treatment facility at Neerabup in WA, or by a 3rd party treatment plant. e-joists may be treated to H2, while LVL beams can be treated to H2 or H3 hazard level.

H2 and e2S Exposure (Inside, protected from wetting, above ground)

Being manufactured products, Wesbeam's LVL and e-joists can be easily treated to resist termite attack. LVL products treated to a H2 LVL can be used anywhere in Australia, while an e2S LVL can only be used in locations South of the Tropic of Capricorn to provide protection against termite attack.

Wesbeam e-joists are manufactured to an e2S level preservative treatment (with a termite treated structural web), but can be treated to a H2 level if used North of the Tropic of Capricorn. H2 and e2S treated products should only be used undercover within a house frame (as shown in the diagram) or fully protected from the weather under a roofed structure such as a verandah or carport.

H3 Exposure (Outside, above ground, intermittently exposed to weather)

Wesbeam LVL is also available as H3 Light Organic Solvent Preservative (LOSP) treated products enabling them to be used in outside, above ground environments where periodical wetting may occur.

As with any timber product, additional protective measures (refer Figure 1 & 2 below) should be employed to stop water from ponding on exposed surfaces that can lead to decay. Additionally, using acrylic paint will assist in protecting timber surfaces from UV sunlight and general weather exposure.

NOTE:

- 1 Wesbeam e-joists cannot be used in external above ground environments.
- 2 Copper Chrome Arsenic (CCA) cannot be used to treat Wesbeam LVL and e-joist products.

Remedial Treatment of Preservative Treated LVL and e-joists

AS/NZS1604.4:2021 requires that where the preservative treatment is envelope penetration, an application of a remedial preservative treatment is required to protect the integrity of the treatment envelope if it is compromised.

This applies to Wesbeam customers for **H2 treated LVL/e-joist and H3 treated LVL products** – where all cut surfaces require a remedial preservative treatment.

Refer to the Wesbeam Technical Information Sheet “Preservative Treated Wesbeam LVL and e-joists: Treatment Levels and Guidelines for Remedial Treatment” for more information.

Wesbeam LVL – Additional Protective Measures That May Be Adopted for LVL joists/bearers

Figure 1 – Use of Damp Proof Course (DPC)

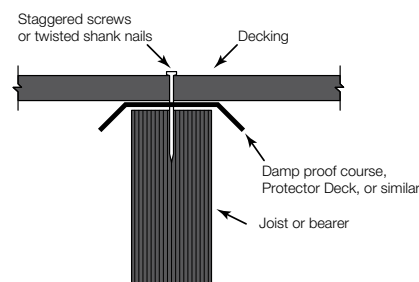
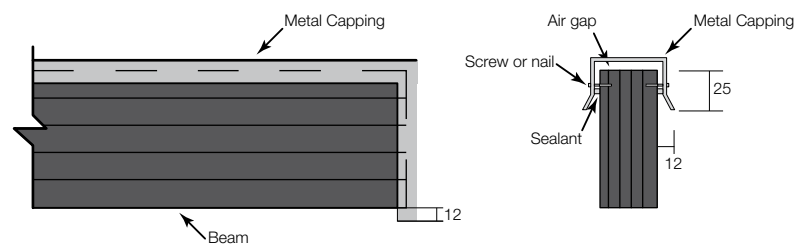


Figure 2 – Beam capping / end flashing



Fasteners

Fasteners used in external environments should have an adequate protective coating in accordance with the National Construction Code (e.g. hot dipped galvanised or stainless steel) to guard against corrosion and combat the elements. Fasteners should also be selected to minimise the chance of splitting timber during installation – pre-drilling may be required in some situations.



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