

## Wesbeam LVL and e-joists used Internally and Externally in Residential Housing

### 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. Technically, 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 – AS/NZS1604.4:2012	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 this prescribed service conditions	All floor, wall and roof framing applications
H2S – termite protection only	Inside, above ground. Completely protected from wetting and well ventilated. For use in locations South of the Tropic of Capricorn only.	<b>Wesbeam manufactured LVL – H2S</b>	
		e-beam	All floor, wall and roof framing applications
		e-beam+[F17]	All floor, wall and roof framing applications
		e-bearer+joist	Sub-floor systems – bearers and joists
		e-garage	Garage beams, alfresco beams
		e-purlin	Roof framing
		e-splay	Roof framing
		e-stick	Roof framing
H2 – termite protection only	Inside, above ground. Completely protected from wetting and well ventilated. For use in all geographical locations in Australia.	<b>Wesbeam LVL – 3rd party H2 treated</b>	
		e-beam	All floor, wall and roof framing applications
		e-beam+[F17]	All floor, wall and roof framing applications
		e-garage	Garage beams, alfresco beams
		Wesbeam e-joists – 3rd party H2 treated	Floor joists and roof rafters
H3 –termite and fungicide protection only	Outside, above ground. Subject to periodic moderate wetting. For use in all geographical locations in Australia.	<b>Wesbeam LVL – 3rd party H3 treated</b>	
		e-beam	All floor, wall and roof framing applications
		e-beam+[F17]	All floor, wall and roof framing applications
		e-garage	Garagebeams, alfresco beams
		Wesbeam e-joists cannot be used externally	

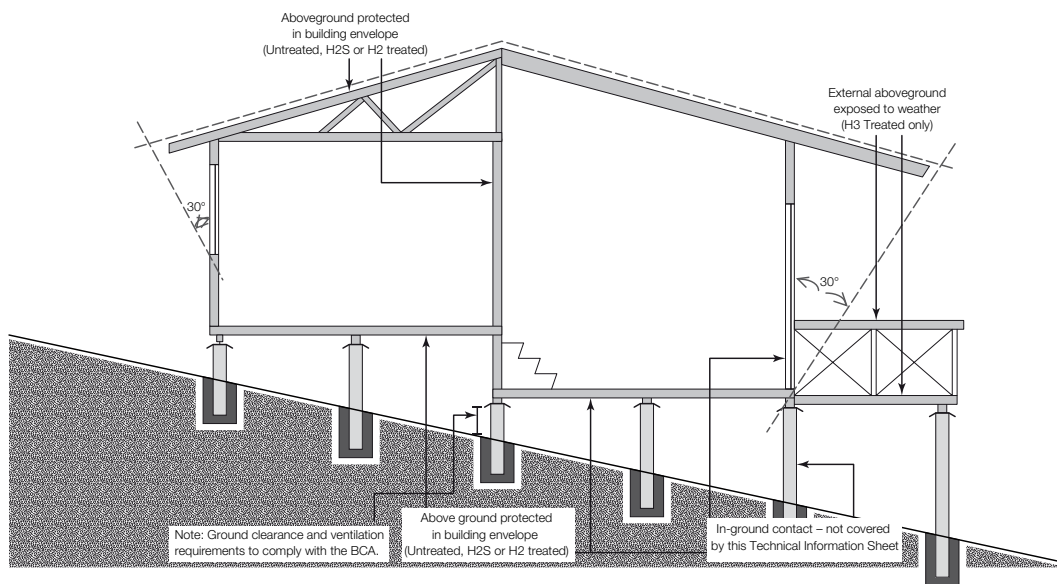
## Wesbeam LVL and e-joists Engineered Timber Products

Wesbeam LVL is manufactured by laminating plantation timber veneers, using phenolic adhesive, in a continuous assembly in which the grain direction of all veneers runs longitudinally. The grade of veneers used complies with the requirements of AS/NZS 2269 Plywood – Structural Part 0 Specifications which allows a range of characteristics, including filled knot holes, sound knots, filled splits and tight gum veins, to be present in veneers. They are pressed as a 1.2 m nominal width continuous billets in various standard thicknesses (35mm, 45mm, 63mm and 75mm), cut to standard widths and any specified length for use as structural beams and other framing components. Wesbeam LVL conforms with the requirements of AS/NZS 4357 Structural Laminated Veneer Lumber and are manufactured from plantation timbers, making them environmentally sustainable products.

## e-beam and e-beam+[F17] Options

### (1) Untreated LVL

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



### (2) Treated LVL and e-joists

If a preservative treatment is desired to enhance the durability of Wesbeam's LVL and e-joists, they can be treated in accordance with AS1604 Specification for preservative treatment Part 4: Laminated veneer lumber (LVL) to meet the intended durability as described below.

#### *H2 and H2S Exposure* (Inside, protected from wetting, above ground)

Being manufactured products, Wesbeam's LVL and e-joists can be readily treated to resist termite attack. LVL products treated to a H2 LVL can be used anywhere in Australia while a H2S 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 a H2S level preservative treatment but can be treated to a H2 level if used North of the Tropic of Capricorn. H2 and H2S 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, fully exposed, above ground)

Wesbeam LVL is also available as H3 Light Organic Solvent Preservative (LOSP) treated products enabling them to be used in outside, fully exposed environments. But 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 as well as using acrylic paint finishes helping protect 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

Customers purchasing Wesbeam treated LVL products are advised that AS/NZS1604.4:2012 requires where the preservative treatment is envelope penetration – H2S spray, H2 and H3 – such LVL and e-joist treated products need an application of a remedial preservative treatment to protect the integrity of the treatment envelope. This advice applies to the following:

- For H2S spray envelop treated LVL, where the product has been rip-sawn, re-sized, or had its original dimensions altered in any way – all cut surfaces require a remedial preservative treatment
- For H2 and H3 treated LVL and H2 treated e-joists – all cut surfaces require a remedial preservative treatment

No remedial treatment is required:

- For H2S spray envelop treated LVL, and
- For H2S treated e-joists,

where the product has been cut to length and drilled for service holes only.

Refer to the Wesbeam Technical Information Sheet – Guidelines for the Remedial Treatment of Preservative Treated Wesbeam LVL and e-joists for more information.

Figure 1 – Use of DPC

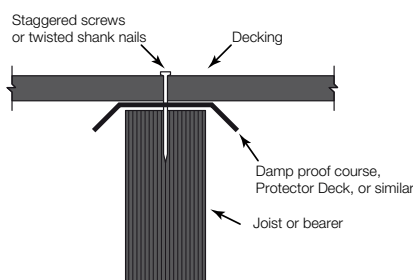
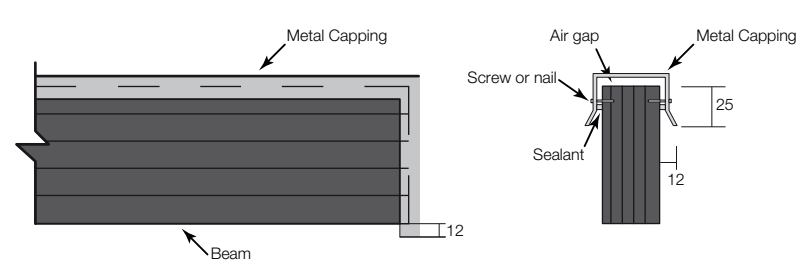


Figure 2 – Beam capping / end flashing



## Fasteners

Fasteners used in external environments should have an adequate protective coating (e.g. hot dipped galvanised, stainless steel or monel metal) 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.