

# Fixing of Flooring to Wesbeam Engineered Floor Joists

## Introduction

Engineered Wood Products (EWPs) are now used widely in residential housing from bearers and joists through to roof framing. This wide spread market acceptance has been due to their uniformity of engineering properties, high strength to weight ratios and their ready availability in longer lengths.

Wesbeam manufactures three EWPs that can be used as floors joists in residential housing: e-beam LVL and e-joist (I-joist product) that are the premier EWPs available and manufactured in Australia.

## Wesbeam Products

Using EWPs in floor joist applications requires an understanding of these products and the means of installing flooring products.

## Fastener Joint Group

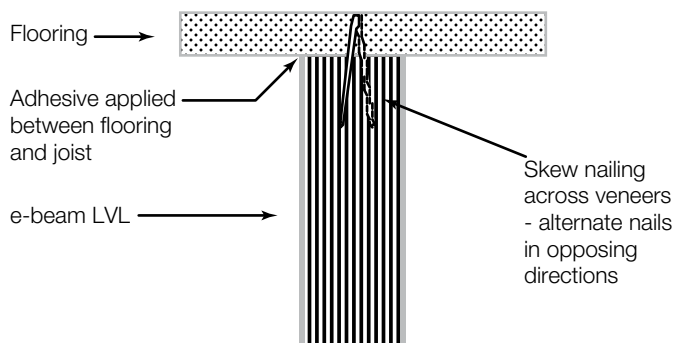
Wesbeam e-beam and e-joist LVL flange are the only sustainably sourced softwood engineered timber products manufactured for the Australian market with a JD3 Joint Group (as prescribed in AS1720.1 – 2010). F17 Kiln Dried Hardwood also has a JD3 Joint Group and therefore nailing into Wesbeam floor joist products will be similar to nailing into F17 hardwood floor joists.

## e-beam LVL

e-beam 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. It is pressed as a 1.2 m nominal width continuous billet in various standard thicknesses, then cut to standard widths and any specified length for use as structural beams and other framing components. e-beam conforms with the requirements of AS/NZS 4357 Structural Laminated Veneer Lumber and is manufactured from sustainably sourced timbers, making it an environmentally sustainable product.

With veneers in the vertical plane, nailing should be skewed across the veneers as shown in Figure 1. For typical nail sizes refer Table 1. Note: nominated screw sizes can also be used with e-beam floor joist products.

**Figure 1 – e-beam nailing**



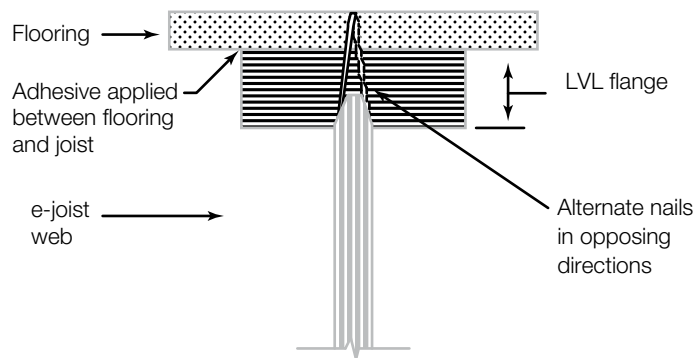
## e-Joists

e-joist is an I-joist product that can be used as a floor joist and consists of an LVL flange and a structural plywood or Orientated Strand Board (OSB) web. Flanges are manufactured by laminating sustainably sourced timber veneers using phenolic adhesive in a continuous assembly in which the grain direction of all veneers runs longitudinally.

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With an LVL top flange, fixings used to secure flooring products need to be of a length to prevent fixings from protruding when installed – See Figure 2. Note: Typical fastener length should be less than 55mm – refer Table 1.

**Figure 2 – e-joint nailing**



**Table 1 – Fastener Sizes  
for Fixing Flooring Directly  
to Wesbeam Floor Joists**

e-beam		e-joint (1)	
Hand driven nails (2)	Machine driven nails (2)	Machine driven nails	Screws (3)
<i>Particleboard (Up to 22mm thick) (4)</i>			
65 × 2.8 mm Ø flat or bullet head	65 × 2.5 mm Ø	50 × 2.5 mm Ø screw/ring shank	No. 10 × 50 mm twin thread, self drilling wood screw
<i>Tongued and Grooved Strip Flooring (Up to 21mm thick)</i>			
65 × 2.8 mm Ø bullet head	65 × 2.5 mm Ø T-head	50 × 2.5 mm Ø T-head (5)	N/A
<i>Plywood (Up to 19.5mm thick)</i>			
50 × 2.8 mm Ø flat or bullet head	50 × 2.5 mm Ø	50 × 2.5 mm Ø	No. 8 × 30 mm self drilling counter sunk wood screws

**Notes**

- (1) e-joint has a top flange thickness of 36mm.
- (2) Nails to be skew driven across veneers.
- (3) Screw sizes may also be used when fixing to e-beam.
- (4) Construction grade adhesive to be used in conjunction with the mechanical fasteners.
- (5) A continuous bead of (6mm approx.) of polyurethane flooring adhesive to be applied to the joist.

**References**

1. AS1684.2 Residential timber-framed construction – Standards Australia
2. AS1860.2 Particleboard flooring - Installation – Standards Australia
3. T&G Structural Plywood for Residential Construction – Engineered Wood Products Association of Australasia
4. Timber Flooring – Forest & Wood Products Research & Development Corporation