



WESBEAM e-beam LVL

CHARACTERISTIC VALUES & DESIGN CRITERIA

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NCC Building Material Compliance:

Wesbeam e-beam LVL is manufactured in accordance with *AS/NZS 4357 Structural Laminated Veneer Lumber* at our Neerabup facility in Western Australia. The LVL manufacturing process is independently 3rd party audited and certified by the Engineered Wood Products Association of Australasia (EWPAA) to ensure its compliance to AS/NZS 4357.

The EWPAA is an accredited LVL, I-Joist, plywood and veneer product certifier, by the peak certifying body in Australasia, the Joint Accreditation System – Australia and New Zealand (JAS-ANZ), accredited to *ISO17065: Product Certification* and *ISO17021: Management Systems*. JAS-ANZ certified products meet the acceptance criteria of the National Construction Code (NCC) of Australia; and State and Commonwealth purchasing authorities.

PRODUCT DESCRIPTION

Product Name

e-beam LVL

Product Range

Thickness (Breadth) (mm)	Width (Depth) (mm)								
	90	130	150	170	200	240	300	360	400
35 mm	90	130	150	170	200	240	300	360	
45 mm	90	130	150	170	200	240	300	360	400
63 mm	90	130	150	170	200	240	300	360	400

NOTE: Availability of section sizes varies by state. Contact Wesbeam Sales Team for confirmation of local availability.

Manufactured in Accordance with

AS/NZS 4357 Series of Standards

Product certified by

Engineered Wood Products Association of Australasia (EWPAA)

Grading Method

In grade tested

In-mill Tested in Accordance with

AS/NZS 4357.0 and AS/NZS 4063 series

Veneer Species

Mix of softwoods and hardwoods

Natural Durability

Class 4

Termite Resistance of Heartwood

Not resistant

Joints

Outer 2 veneers are scarf jointed, inner veneers scarf and/or butt jointed

Dimensional Tolerances	Length	-0, +20 mm
	Depth (<400)	-0.5, +2.0 mm
	Depth (>400)	-0.5, +4.0 mm
	Thickness	35mm -2.0, +2.0 mm 45mm -4.5, +4.0 mm 63mm -3.5, +5.0 mm
Straightness	Spring & Bow	1 mm in 1000 mm
	Squareness	1 mm in 100 mm
	Twist	$\frac{\text{Length (mm)} \times \text{Width (mm)}}{3500 \text{ Thickness (mm)}}$
Treatment Methods	e-beam non-treated	Nil
	e-beam e2s treated	CodeMark Certified glue-line treatment for termites and borers
	e-beam H2 treated	AS1604 Series of Standards
	e-beam H3 treated	AS1604 Series of Standards
Timber Moisture Content	8-15% (at time of despatch)	
Adhesive	Phenolic to AS/NZS 2754.1	
Bond	Type A to AS/NZS 2098.2	
Finish	Unsanded faces, sawn edges and edges arrised	
Storage	Store on level bearers at 1800 mm centres well clear of ground, and cover to keep dry but allow ventilation	

DESIGN CRITERIA

	Characteristic Values for Design for Wesbeam e-beam LVL are determined by in-grade testing in accordance with AS/NZS 4063. The Characteristic Values for Design listed for Wesbeam e-beam LVL apply only when the moisture content of the LVL in service is below 15%.
References	<ul style="list-style-type: none"> (a) AS 1720.1 Timber Structures Part 1: Design Methods (b) AS/NZS 4063.1 Characterization of structural timber – Part 1: Test Methods (c) AS/NZS 4063.2 Characterization of structural timber – Part 2: Determination of characteristic values (d) AS/NZS 4357.0 Structural laminated veneer lumber Part 0: Specifications (e) Engineered Wood Products Association of Australasia: Structural Plywood and LVL Manual
Required Undersize for Design	<p>0mm x 0mm (on edge application)</p> <p>Refer to Wesbeam Technical Team for requirements when designing e-beam on-flat application</p>

**Wesbeam e-beam LVL
Characteristic Values for Design**

The Characteristic Values for Design (Limit State) for use with AS1720.1:2010 have been determined in accordance with the requirements set forth in AS/NZS 4063

Characteristic Values for Design		On Edge (MPa)
f'_b	Bending strength*	50.0*
f'_t	Tension strength – parallel to grain	34.0
f'_{tp}	Tension strength – perpendicular to grain	0.6
f'_c	Compression strength – parallel to grain	47.0
f'_{cp}	Compression strength – perpendicular to grain	16.0
f'_p	Bearing strength – perpendicular to grain	12.0
f'_l	Bearing strength – parallel to grain	35.0
f'_s	Shear strength	5.0
f'_{sj}	Shear at joints	7.5
E	Short duration average modulus of elasticity	13,200
G	Short duration average modulus of rigidity	660

NOTE: Refer to Wesbeam for properties on flat

***Volume effect multiplier**

The volume effect multiplier applies to bending and tension members only and applies to the characteristic properties prior to any other calculations

$$k = \left(\frac{95}{d}\right)^{0.140}$$

**Other Wesbeam
e-beam LVL Properties**

Strength Group, Joint Group Classifications and Design Densities	
Average Density (kg/m ³)	660
Joint Group for nailplate tooth design	Refer nailplate supplier
Joint group for connector design (nails, screws and bolts)	JD3
Strength Group (Seasoned)	SD6

These product properties apply to Wesbeam e-beam branded LVL ONLY and cannot be used for other Wesbeam LVL products.

NOTE: Characteristic Values for Design are subject to change without notice. Current values can be obtained via the Wesbeam website.

**Certification
and Warranty**

Wesbeam Pty Ltd certifies that Wesbeam e-beam LVL is manufactured to conform to the LVL Characteristic Values for Design & the Design Criteria noted above, or if the above is modified by Wesbeam, then as advised in writing by way of update of this note, by Wesbeam. In addition, Wesbeam certifies that when Wesbeam manufactured e-beam LVL is designed and installed in accordance with the relevant Australian Standards and good building practice, Wesbeam e-beam LVL complies with the requirements of the National Construction Codes.

Wesbeam will warrant its e-beam LVL product against glue-line and/or structural failure for the service life of the application. This warranty is subject to the following conditions:

- The e-beam LVL is not stressed beyond its design capacity; and
- When preservative treated the exposure is not higher than the nominated design hazard level specified.

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