



WESBEAM e-frame E10 LVL CHARACTERISTIC VALUES & DESIGN CRITERIA

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CHARACTERISTIC VALUES & DESIGN CRITERIA

NCC Building Material Compliance:

Wesbeam e-frame E10 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-frame E10 LVL

Product Range

| Thickness (Breadth) | Width (Depth) | | |
|---------------------|---------------|-------|-------|
| 35 mm | 90mm | 120mm | 170mm |
| 45 mm | 90mm | | |

NOTE: Availability 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 | -0.5, +2.0 mm |
| | Thickness | 35mm: -2.0, + 2.0 mm 45mm: -1.5, + 3.5 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 | non-treated | Nil |
| | e2s treated | CodeMark Certified glue-line treatment for termites and borers |
| | H2 treated | AS1604 Series of Standards |
| | 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, preferred arrised bottom edges but not compulsory |
|---------------|---|

| | |
|----------------|---|
| 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-frame E10 LVL are determined by in-grade testing in accordance with AS/NZS 4063. The Characteristic Values for Design listed for Wesbeam e-frame E10 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 | 0mm x 0mm |
|--------------------------------------|-----------|

**Wesbeam e-frame E10 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 | 22.6 |
| f'_t | Tension strength – parallel to grain | 10.2 |
| f'_{tp} | Tension strength – perpendicular to grain | 0.6 |
| f'_c | Compression strength – parallel to grain | 18.0 |
| f'_p | Bearing strength – perpendicular to grain | 10.0 |
| f'_l | Bearing strength – parallel to grain | 30.0 |
| f'_s | Shear strength | 2.6 |
| E | Short duration average modulus of elasticity | 10,000 |
| G | Short duration average modulus of rigidity | 500 |

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-frame E10 LVL
Properties**

| Strength Group, Joint Group Classifications and Design Densities | |
|--|--------------------------|
| Average Density (kg/m ³) | 600 |
| Joint Group for nailplate tooth design | Refer nailplate supplier |
| Joint group for connector design (nails, screws and bolts) | JD5 |
| Strength Group (Seasoned) | SD6 |

These product properties apply to Wesbeam e-frame E10 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-frame E10 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-frame E10 LVL is designed and installed in accordance with the relevant Australian Standards and good building practice, Wesbeam e-frame E10 LVL complies with the requirements of the National Construction Codes.

Wesbeam will warrant its e-frame E10 LVL product against glue-line and/or structural failure for the service life of the application. This warranty is subject to the following:

- The e-frame E10 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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