



e-purlin®  
engineered LVL roof underpurlin

e-strut®  
engineered LVL roof struts



**e-purlin**   
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**Faster, stronger, safer,  
cost effective roof.**

Wesbeam's laminated veneer lumber (LVL) e-strut and e-purlin make building stick roofs for tile or metal sheet cladding easier. Which means that construction time is shorter.

And because it has been engineered to enable greater strut spacing, e-purlin creates stronger roofs using less material.

It reduces the need for steel strutting beams and the costs associated with lifting and fixing them.

Purpose-engineered, e-strut and e-purlin have greater strength and uniformity than sawn timber, and are comparatively lighter, making them safer and easier to work with.





### **e-purlin engineered LVL roof underpurlin to support stick roofs for tile and metal sheet cladding.**

e-purlin offers the greatest flexibility in the design of stick roofs clad with tile or metal sheeting. They are available in a range of lengths from 3m to 10.8m with longer lengths available by special manufacture. e-purlins are design engineered to maximise the efficient use of material and time.

#### **Features**

- Engineered for straightness and consistent performance
- High load bearing capacity for greater maximum strut spacing
- Longer lengths available, minimising jointing and wastage
- High strength yet lighter and safer to handle
- Chamfered edges for safer and more comfortable handling
- Manufactured from 100% sustainably sourced timber
- Manufactured and properties evaluated in accordance with AS/NZS4357 series - Structural laminated veneer lumber totally compatible for engineering design in accordance with AS1720.1:2010 - Timber structures, Part 1: Design methods
- JD4 joint group – for nails, bolts and screws

#### **e-purlin specification**

e-purlin is manufactured from structural laminated veneer lumber in accordance with AS/NZS4357 series - Structural laminated veneer lumber for N1, N2, N3 and N4 wind classifications.

e-purlin span tables are engineer designed and certified to comply with AS1720.1:2010 - Timber structures, Part 1: Design methods, AS1720.3:2016 - Timber structures, Part 3: Design criteria for timber-framed residential buildings, AS1170 series - Structural design actions, and AS4055:2012 - Wind loads for housing.



### **e-strut engineered LVL roof struts to support stick roofs for tile and metal sheet cladding.**

e-struts offer minimum material and time wastage when used with e-purlins in the fabrication of stick roofs. Engineered e-struts are highly consistent in their performance and dimensional stability. They have superior compressive strength which resists the dynamic loads associated with high wind coastal conditions. And e-struts are available in lengths of 3.6m and 4.5m which enables design flexibility for the most complex roof shapes.

e-struts are comparatively lighter than timber products, making them safer to handle.

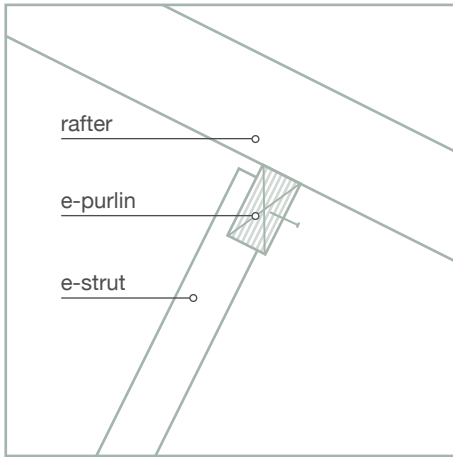
#### **Features**

- Engineered for straightness and consistent performance
- Greater length = greater design flexibility
- High strength yet lighter and safer to handle
- Chamfered edges for safer and more comfortable handling
- Manufactured from 100% sustainably sourced timber
- Manufactured and properties evaluated in accordance with AS/NZS4357 series - Structural laminated veneer lumber totally compatible for engineering design in accordance with AS1720.1:2010 - Timber structures, Part 1: Design methods
- Suitable for both sheet metal and tile leaf cladding at maximum strut length of 4.5m
- JD4 joint group – for nails, bolts and screws

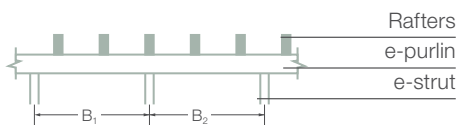
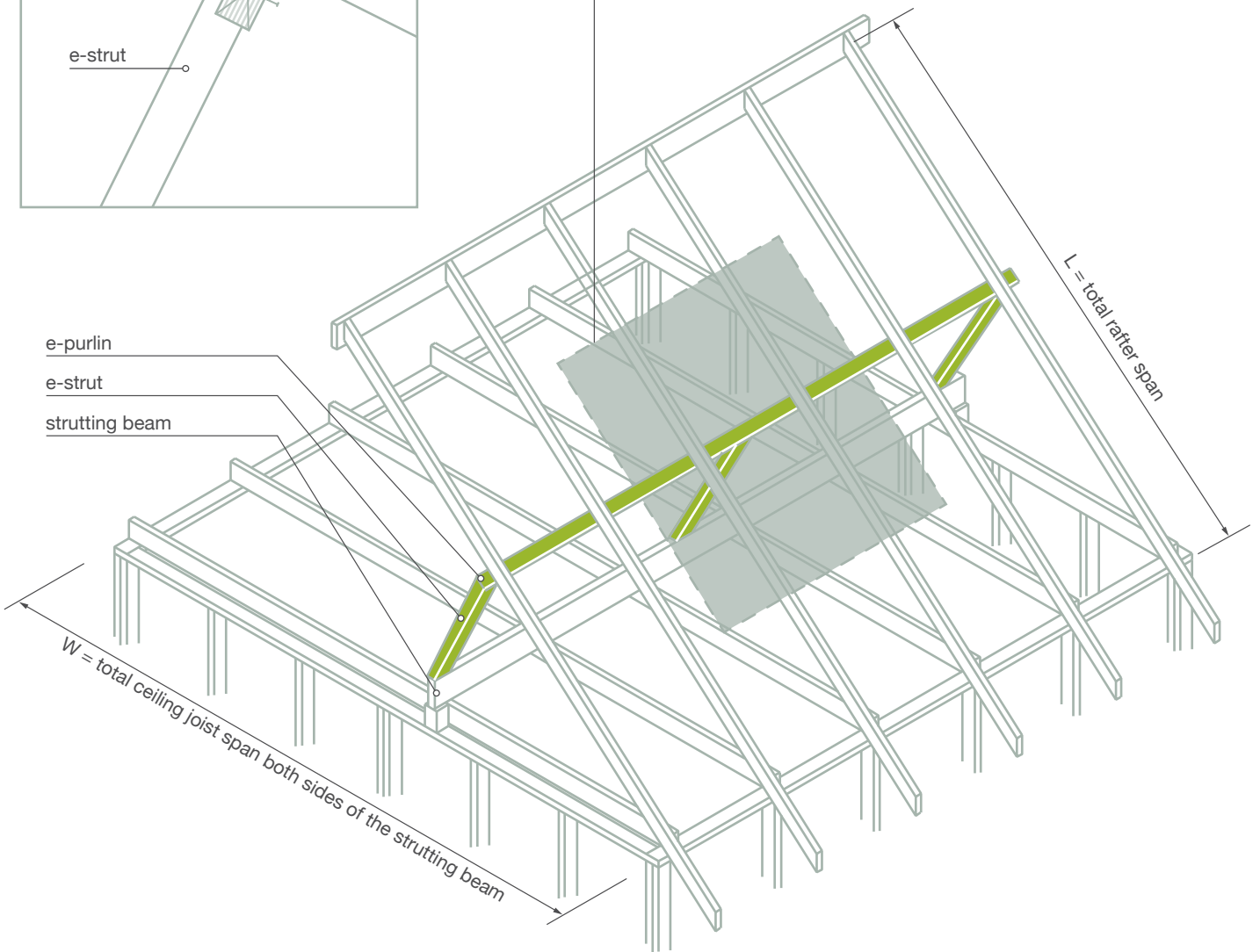
#### **e-strut specification**

e-struts are manufactured from structural laminated veneer lumber in accordance with AS/NZS4357 series - Structural laminated veneer lumber for N1, N2, N3 and N4 wind classifications.

e-strut is engineer designed and certified to comply with AS1720.1:2010 - Timber structures, Part 1: Design methods, AS1720.3:2016 - Timber structures, Part 3: Design criteria for timber-framed residential buildings, AS1170 series - Structural design actions, and AS4055:2012 - Wind loads for housing.



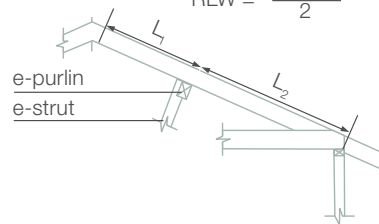
Supported roof area by e-strut = RLW x ULW



For determination of underpurlin load width 'ULW' for strut loads.  $ULW = \frac{B_1 + B_2}{2}$

For determination of roof load width 'RLW' for underpurlins.

$$RLW = \frac{L_1 + L_2}{2}$$



## E-PURLIN SPAN TABLES

## WIND CLASSIFICATION N1, N2, N3, N4

e-purlin Section D X B (mm)	Roof Load Width – RLW (m)									
	1.8	2.4	3.0	3.6	4.2	1.8	2.4	3.0	3.6	4.2
	Single Span					Continuous Span				
<b>Tile Roof – Maximum strut spacing (m)</b>						<b>For Wind Classification N1/N2/N3</b>				
83 x 51	1.4	1.2	1.2	1.1	1.1	1.8	1.6	1.5	1.4	1.3
96 x 51	1.6	1.4	1.3	1.3	1.2	2.1	1.9	1.8	1.6	1.6
<b>Sheet Roof – Maximum strut spacing (m)</b>						<b>For Wind Classification N1/N2/N3</b>				
83 x 51	1.9	1.7	1.5	1.3	1.1	2.6	2.4	2.0	1.7	1.6
96 x 51	2.4	2.1	1.9	1.7	1.5	2.9	2.6	2.5	2.4	1.9

e-purlin Section D X B (mm)	Roof Load Width – RLW (m)									
	1.8	2.4	3.0	3.6	4.2	1.8	2.4	3.0	3.6	4.2
	Single Span					Continuous Span				
<b>Tile Roof – Maximum strut spacing (m)</b>						<b>For Wind Classification N4</b>				
83 x 51	1.4	1.2	1.2	1.1	1.1	1.8	1.6	1.5	1.4	1.3
96 x 51	1.6	1.4	1.3	1.3	1.2	2.1	1.9	1.7	1.5	1.4
<b>Sheet Roof – Maximum strut spacing (m)</b>						<b>For Wind Classification N4</b>				
83 x 51	1.7	1.2	1.0	0.8	0.7	2.2	1.7	1.3	1.1	1.0
96 x 51	2.3	1.7	1.3	1.1	1.0	2.5	2.2	1.7	1.6	1.3

1 All fixings and restraints to be installed in accordance with AS1684.2:2010.

## E-STRUT SPAN TABLES

Sheet Roof	Tile Roof	Strut Length
Maximum strut spacing 2.1m	Maximum strut spacing 1.8m	4.5 maximum for both sheet and tile roof
Maximum supported roof area 7.0m <sup>2</sup>	Maximum supported roof area 5.4m <sup>2</sup>	

1 All fixings and restraints to be installed in accordance with AS1684.2:2010.

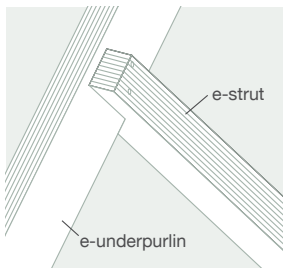
## E-STRUTS PERPENDICULAR TO RAFTERS

Cut the birdsmouth in the e-strut across the LVL veneers

Nail fixings must be skewed through the e-strut into the e-purlin across the direction of the veneers.

Fix e-struts to e-purlins with minimum 2 x 3.15mmø framing nails.

Tie-downs omitted for clarity.



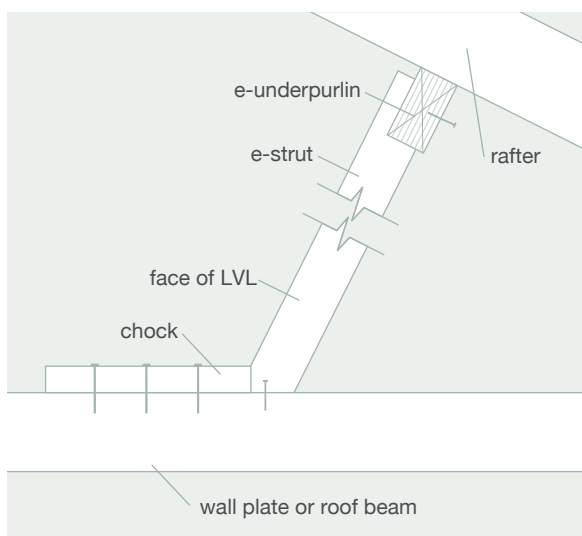
**WESBEAM RECOMMENDS  
THAT THE BIRDSMOUTH  
IS CUT ACROSS THE  
DIRECTION OF THE LVL  
VENEERS WHEREVER  
POSSIBLE**



Fix the bottom of the e-strut to the support with 2 x 3.15mm $\varnothing$  framing nails driven through the face of the e-strut.

Any e-struts that are not vertical must be restrained by blocks or chocks.

Fix the timber chock to the supporting member with 3 x 3.15mm $\varnothing$  framing nails.



## VERTICAL E-STRUTS

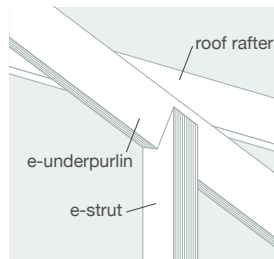
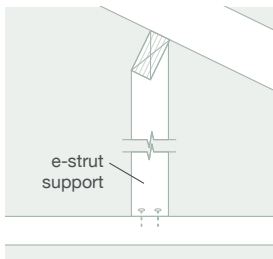
Cut the birdsmouth in the e-strut across the LVL veneers.

Fix e-struts to e-purlins with min. 2 x 3.15mmØ framing nails.

The nail fixings must be skewed through the e-strut into the e-purlin across the direction of the veneers

Vertical e-struts must be fixed to the e-strut support (wall plate, roof beam etc) with min. 4 x 3.15mmØ framing nails fixed through the face of the e-strut.

Tie-downs omitted for clarity.



**WESBEAM RECOMMENDS  
THAT THE BIRDSMOUTH  
IS CUT ACROSS THE  
DIRECTION OF THE LVL  
VENEERS WHEREVER  
POSSIBLE**





# SPECIFICATIONS

## Veneer

Thickness	Constant through the product thickness
Species	Sustainably sourced timber
Joints	Outer 2 plies are scarf jointed Inner plies – scarf and/or butt jointed

## Moisture Content

8% – 15% (at time of dispatch)

## Dimensional Tolerances

Available on request

## Straightness

Available on request

## Density

650kg/m<sup>3</sup> (approximately)

## Adhesive

Phenolic – AS2754.1:2016 - Adhesives for timber and timber products; Adhesives for manufacture of plywood and laminated veneer lumber (LVL)

## Bond

Type A – AS/NZS2098.2:2012 - Methods of tests for veneer and plywood; Bond quality of plywood (chisel test)

## Joint Group

JD4 – for nails, bolts and screws unless noted otherwise

## Finish

Unsanded faces, sawn edges and arrised edges

## Branding

Each piece of Wesbeam LVL is branded at least once with the product name for identification and evidence of compliance with manufacturing control standards

## Storage

Store on level bearers at maximum 1800mm centres well clear of the ground, and cover to keep dry but allow ventilation

## Source

Sustainably sourced timber certified to AS4707:2014 - Chain of custody for forest products PEFC

## Condition

Untreated – but can be specified to e2S\*, H2 and H3 Treatment levels

\*e2S is a CodeMark® certified glue-line termite treatment.



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