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SMARTLVL 13
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SMART LVL13

DESIGN GUIDE EDITION 1 2026

SMARTFRAME[®]
BY TILLING

SmartLVL® 13 Design Guide

Scope of this publication

This Design Guide and Load Tables assist in the selection of SmartLVL® 13 beams for most of the common structural arrangements met in domestic construction.

Methods of developing lateral restraint and providing adequate support, adequate anchorage against wind uplift, and overall structural stability are outside the scope of this publication, however some limited examples have been reproduced within this document.

Information on the above matters can be obtained from AS 1684 Residential timber-framed construction or from a structural engineer experienced in timber construction.

Tilling Timber Pty Ltd have structural engineers at the Smart-Frame Design Centre who can be contacted for advice on matters concerning the use of its engineered timber products in timber construction at techsupport@tilling.com.au or on the Techsupport HelpLine 1300 668 690.

Substitution of other products

All load tables in this document are designed using in-grade tested properties of SmartLVL as distributed by Tilling Timber Pty Ltd. Other manufacturer's LVL may have different properties and therefore cannot be designed using these span tables.

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Certification

As a professional engineer, qualified and experienced in timber engineering, I certify that the use of the SmartLVL members as shown in these tables, and installed in accordance with the provisions of this Design Guide, complies to the National Construction Code (NCC). These span tables have been prepared in accordance with standard engineering principles, the relevant test reports and Australian standards, ie:

- AS 1720.3 Design criteria for timber-framed residential buildings
- AS 1720.1 Timber structures - design methods
- AS 4055 Wind loads for houses
- AS/NZS 4357 Structural laminated veneer lumber
- AS/NZS 4063 Characterisation of structural timber



Ray Schneider, BEng(Civil), MIEAust, PE0003119,
Principal Structural Engineer-SmartFrame

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1. SmartLVL® 13

Description

SmartLVL 13 is a structural Laminated Veneer Lumber (LVL) manufactured by toll manufacturers for Tilling Timber to meet the quality controlled process requirements of AS/NZS 4357 - Structural Laminated Veneer Lumber.

Sustainability



SmartLVL is manufactured from wood fibre from sustainably managed forests and is produced under a chain of custody system certified to comply with the PEFC™ International Standard – Chain of Custody of Forest Based Products – Requirements (PEFC ST 2002:2103) Certificate No SCS-PEFC-COC-004061.

Quality

Compliance with process based quality control requirements is third party audited by CMI Certification Pty Ltd, a JAS-ANZ accredited Product Certification Body and the audits, together with end product testing is used as the basis for CMI ProdCert certificates PC10101 and PC10096.



Preservative Treatment options



Stock SmartLVL is H2s (glue line) treated for use South of the Tropic of Capricorn. It can be post-production pressure treated to H2 or H3 to AS/NZS 1604. (see page 11)

Short term water repellency



SmartLVL comes with a clear **new generation** short term water repellency H₂O Shield™ to replace the old fashioned wax sealers used by most other LVL manufacturers. H₂O Shield™ is a water-based sealer specifically formulated for SmartFrame EWP.

H₂O™ shield offers numerous key benefits:

- i) High-penetrating surface treatment
- ii) Formulated to repel rain during storage and construction
- iii) Includes a biocide/fungicide
- iv) Paintable - acrylic and oil based coatings
- v) Glueable – using standard construction adhesives between the LVL and wood or plaster products
- vi) When transporting or walking on the LVL, it does not become slippery like the wax surface coating
- vii) Environmentally friendly

Users will notice that the new sealer absorbs into the wood instead of leaving a film on top of the surfaces, which is the key to its added benefits.

1.1 SmartLVL Design/effective span

Normal structural analysis uses the centreline representation of the member. The term “span” can be defined in a number of ways and these are defined as follows:

Clear Span. This is the distance between the faces of any support. It is generally the one easiest to measure and read from the drawings

Nominal span/centre-line span. This is the distance between the centre of the supports. This span is used to determine bending moments and deflections for continuous spanning members

Design span/Effective span. This is the span used for single span members to determine the bending moment, the slenderness of bending members and the deflections. In NZS 3603 this is the dimension referred to as “L”, and is defined below.

Design span/Effective span is the distance between -

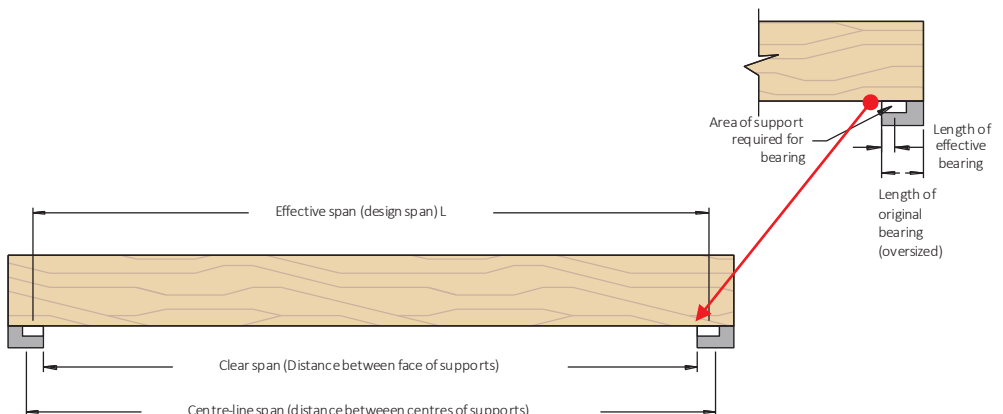
- The centre of the bearing at each end of a beam where the bearing lengths have **NOT** been conservatively sized
- The centre of notional bearing that have been sized appropriately, where the size of the bearing **IS** conservative.

Diagram (a) shows beam where bearings have been designed appropriately. The effective span is taken as the distance between the centre of each bearing area



Diagram (b) shows beam where bearings at each end have been oversized. (This is frequently the case for beams that bear onto brickwork or concrete walls where the thickness of the wall is in excess of the area required to give the beam bearing capacity). To find the correct effective span:

1. Calculate the minimum bearing required to carry the loads satisfactorily
2. Add minimum bearing length to “clear span” distance.



1.2 Continuous spans

For beams continuous over two (2) unequal spans, the design span and the "Resultant Span Description" depend upon the percentage difference between the two spans as shown below:

Note, for continuous spans, the Design Span is taken as the distance between the centre of the supports, as shown in "Design Span" on page 1 of the Design Guide.

Span Difference %	Effective span	Resultant span Description
10% max	Main span	Continuous
10 - 30%	1.1 x Main span	Continuous
above 30%	Main span	Single

$$\text{span difference} = \frac{(\text{main span} - \text{second span})}{(\text{main span} + \text{second span})} \times 100$$

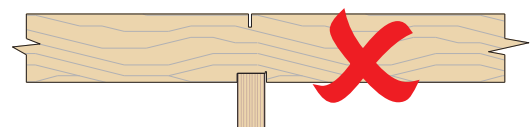


1.3 Rip sawing SmartLVL 13

One of the unique properties of Smart LVL is that it may be ripped through the depth to the smaller section sizes as those given in these span tables without affecting the basic strength properties. It is important that the new members are not cut undersized if the maximum spans in these tables are to be used.



The sawing through the thickness to produce sections of a lesser thickness may decrease the integrity of the SmartLVL and is therefore NOT recommended under any circumstances.



Joist and bearer span tables do NOT allow for the practice of notching the top of the member over a support

1.4 Multiple SmartLVL 13 section beams

Vertical laminations may be achieved by adopting the procedures described in clause 2.3 of AS1684, however these procedures should be considered as the minimum requirements to achieve the desired effect.

Experience with SmartLVL 13 beams indicates that this degree of fixing may not satisfactorily prevent cupping of individual components as a result of the ingress of moisture between laminates during construction.

The suggested methods of vertical lamination below provide a

greater level of fixity between individual components, and with the use of an elastomeric adhesive, also prevents moisture penetration between the laminates.

Maximum floor load width tables for multiple member laminations of SmartLVL 13:

1. Nail lamination
2. Type 17 screw lamination
3. Bolt lamination

are shown below

1. Nailing

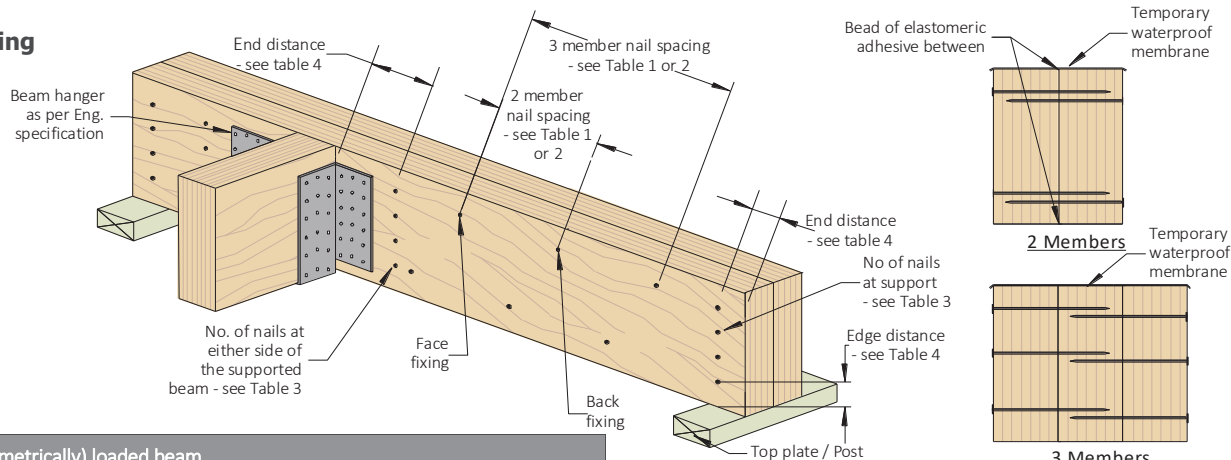


Table 1

Top (symmetrically) loaded beam			
Section width	Nail type	No of nail rows (both sides)	Nail spacing (mm)
2/35	3.15 x 65	2 or 3*	300
3/35 & 2/45	3.30 x 90	2 or 3*	300
2/42	3.06 x 75	2 or 3*	200
3/42, 3/45 & 2/58 3/58, 2/65 & 3/65	Nail lamination is not suitable, requires screws or bolts		

* Beam depth ≥ 300 mm 3 rows of nails

Note: Addition Tables 2,3 and 4 are on next page

1. Nailing (cont'd)

Table 2

Side (non-symmetrically) loaded beam					
Section width	Nail type	No of nail rows at 300mm ctrs (both sides)	Max. floor joist span supported by outer member (mm)*	No of nail rows at 300mm ctrs (both sides)	Max. floor joist span supported by outer member (mm)*
2/35	3.15 x 65	2	2150	3	3250
3/35	3.30 x 90	2	5100	3	7600
2/45	3.30 x 90	2	2550	3	3800
2/42	3.06 x 75	2	2300	3	3400
3/42 & 3/45	3.30 x 90	2	2550	3	3800
2/58 & 3/58	3.30 x 100	2	2500	3	3800
2/65 & 3/65	3.30 x 100	2	1350	3	2050

* Floor loads G = 62 kg/m², Q = 1.5 kPa

Table 3

Beam depth (mm)	Min. number of nails required	
	At support	At either side of supported beam
90–150	3	3
160–300	5	6
> 300	6	8

Table 4

Nail dia. (mm)	Min. edge distance (mm)	Min. end distance (mm)	Min. distance between nails (across the grain) (mm)
3.06 & 3.15	20	70	40
3.30	20	75	45

2. Type 17 screws

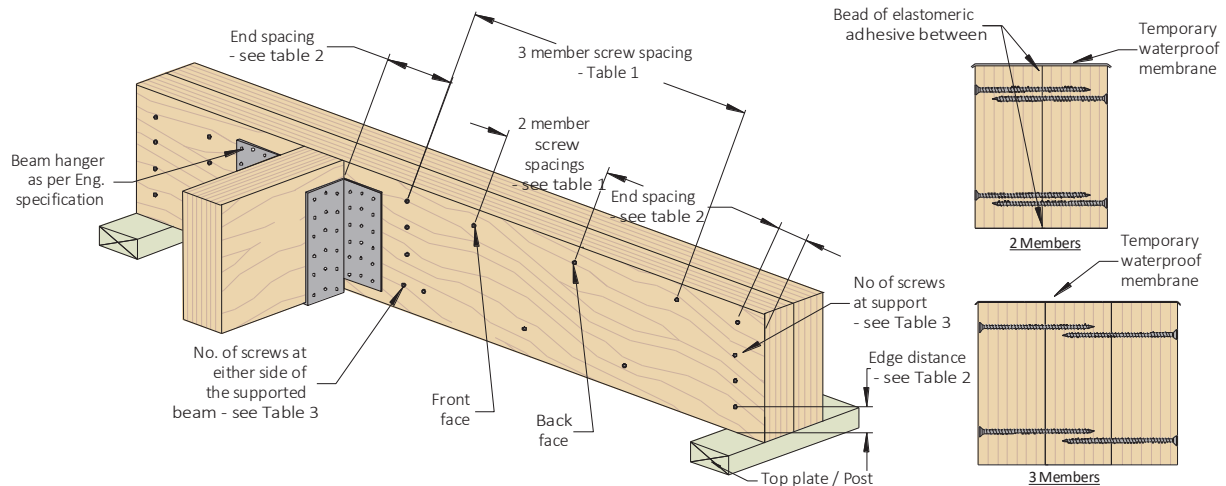


Table 1

Side (non-symmetrically) and top loaded beam				
Section width	Type 17 screw size	No of screw rows (both sides)	Screw spacing (mm)	Max. floor joist span supported by outer member (mm)**
2/35 & 3/35	10g x 65	2 or 3*	200	4500
2/42 & 3/42	12g x 75	2 or 3*	200	5900
2/45 & 3/45	12g x 90	2 or 3*	200	6400
2/58 & 3/58	14g x 100	2 or 3*	200	7100
2/65 & 3/65	14g x 125	2 or 3*	300	6000

* for beam depths ≥ 300 mm, use 3 rows of screws

** Floor loads G = 1.25 kPa, Q = 2.0 kPa

Table 2

Type 17 screw size	Min. edge distance (mm)	Min. end distance (mm)	Min. distance between screws (across the grain) (mm)
10g	30	50	20
12g	35	60	25
14g	40	70	30

Table 3

Beam depth (mm)	Min. number of screws required	
	At support	At either side of supported beam
90–240	3	3
> 240	4	4

Multiple member lamination (Cont'd)

3. Bolts

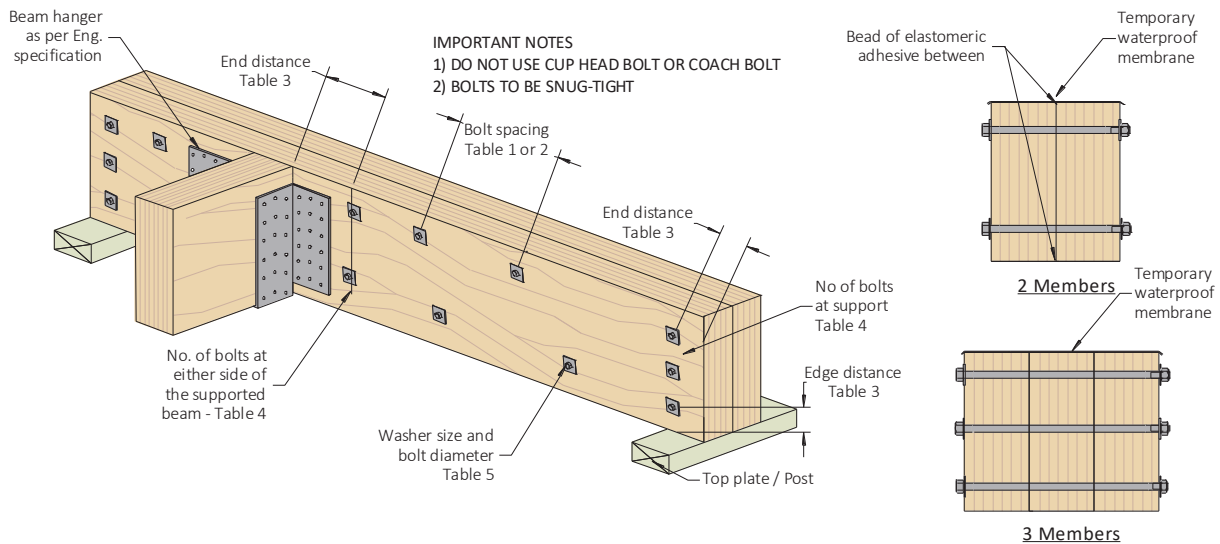


Table 1

Top (symmetrically) loaded beam - M12 Hex head bolt	
Beam depth ≤ 300 mm	Beam depth > 300 mm
2 rows of bolts at 300 mm ctrs	3 rows of bolts at 300 mm ctrs

Table 2

Side (Non symmetrically) loaded beam - M12 Hex head bolt		
Maximum floor joist span supported by the beam mm*		
2 rows at 600 mm ctrs	2 rows at 300 mm ctrs	3 rows at 600 mm ctrs
7200 mm	12,000 mm	10,800 mm

* based upon floor loads of G: 1.25 kPa Q: 2.0 kPa

Table 3

Bolt size	Min. edge distance	Min. end distance	Min. distance between bolts (across grain)
M12 Hex head	60 mm	60 mm	60 mm

Table 4

Beam depth (mm)	Min. number of bolts required	
	At support	At either side of supported beam
90–150	1	1
160–240	2	2
> 240	3	3

Table 5

Bolt diameter (mm)	Washer dimensions		
	Thickness (mm)	Min. diameter of round washers (mm)	Min. side length of square washers (mm)
M12	3	55	50

1.5 On-site cutting, notching and drilling of SmartLVL beams, bearers, rafters and joists

The cutting, notching and drilling details within Fig 4.1 of AS 1684 pre-date both the introduction of LVL and the common use of roof trusses, and therefore presents deemed-to-satisfy solutions based upon the solid section timber types/sizes and systems commonly used to frame a typical Class 1 and 10a building at that time.

Contemporary open plan building styles with larger spans and deeper/thinner beams made possible by the introduction of LVL combined with the near universal practice of building with roof trusses that typically load only to external walls have now rendered some of these deemed-to-satisfy solutions non-conservative, especially in cyclonic wind loadings.

It is for this reason that it is recommended that on-site cutting, notching and drilling of SmartLVL 13 be limited to the provisions shown below.

Further information about the effects of cutting and notching of timber elements can be found in Appendix E of AS 1720.1.

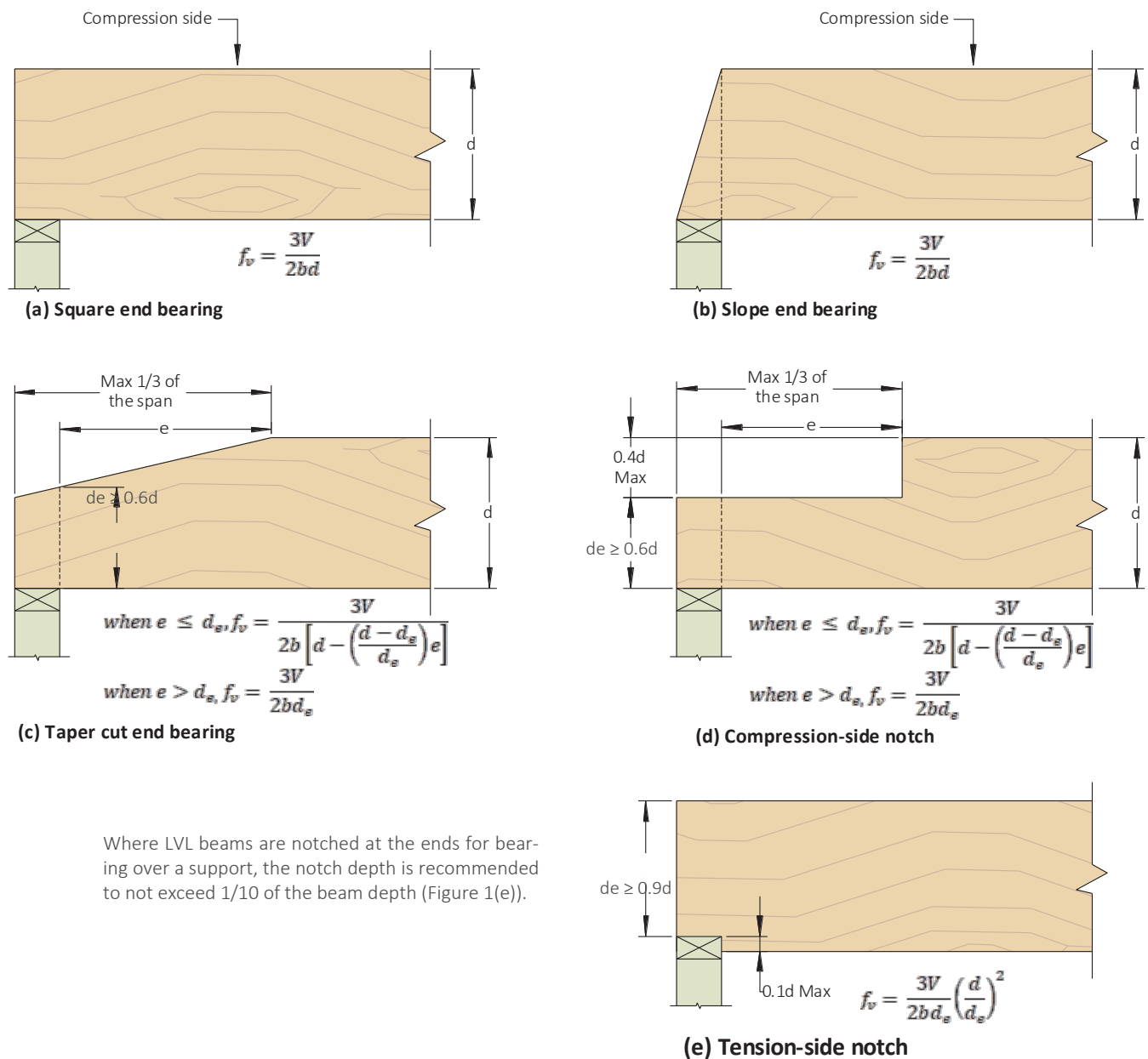
1. Notching

Notching of LVL beams should be avoided whenever possible, especially on the tension side of a member. Tension-side notching of LVL beams is not recommended except at end bearings and then only under specific conditions. The notching of LVL beams on the tension side results in decreased strength caused by stress concentrations that develop around the notch and a reduction of the net cross section resisting the bending and shear forces. Such notches induce perpendicular-to-grain tensile stresses which, in conjunction with horizontal shear forces, can cause splitting along the grain, typically starting at the inside corner of the notch. Stress concentrations, due to notches, can be reduced by using a gradually tapered notch configuration in lieu of a square-cornered notch.

All onsite notches should be accurately cut. Avoid over cutting at the corners of the notch. Drilling a 16 mm ϕ pilot hole in a member at the interior corner of a notch as a stop point for the saw blade provides both a rounded corner and minimizes over cutting at the corner and reduces stress concentrations in these areas.

1.5 On-site cutting, notching and drilling of SmartLVL beams, bearers, rafters and joists (Cont'd)

Figure 1



Where LVL beams are notched at the ends for bearing over a support, the notch depth is recommended to not exceed 1/10 of the beam depth (Figure 1(e)).

f_v = shear stress (MPa)
 d = depth of LVL beam (mm)

V = shear force at notch location (kN)
 d_e = effective depth as shown (mm)

b = width of LVL beam (mm)
 e = length of notch as shown (mm)

For notches on the compression side, a less severe condition exists and equations for the analysis of the effects of these notches are also given in Figure 1. The equations given are empirical in nature and were developed for the conditions shown.

As the notching provisions given in this Note are limited to uniformly loaded simple span beams, the notches shown in Figure 1 occur in areas of high shear and lower moment. For this reason, the design equations given are shear equations.

When necessary to cut a small notch in the top of an LVL beam (in the compression side) to provide passage for small-diameter pipe or conduit, the cut should be made in an area of the beam stressed to less than 50% of the allowable bending stress. The net section in this area should be checked for shear and bending

stresses to ensure adequate performance.

It should be recognized that the top of an LVL beam might not always be stressed in compression and the bottom of an LVL beam might not always be stressed in tension. For example, if the LVL beam is designed for wind uplift, the top of the LVL will be stressed in tension and the bottom of the LVL will be stressed in compression.

In this case, the recommendations given above should be applied accordingly. Furthermore, when evaluating the effect of notching, the shear force within a distance from supports equal to the beam depth should not be neglected, as typically permitted by the design of rectangular wood members in accordance with the AS 1720.1.

Horizontal holes

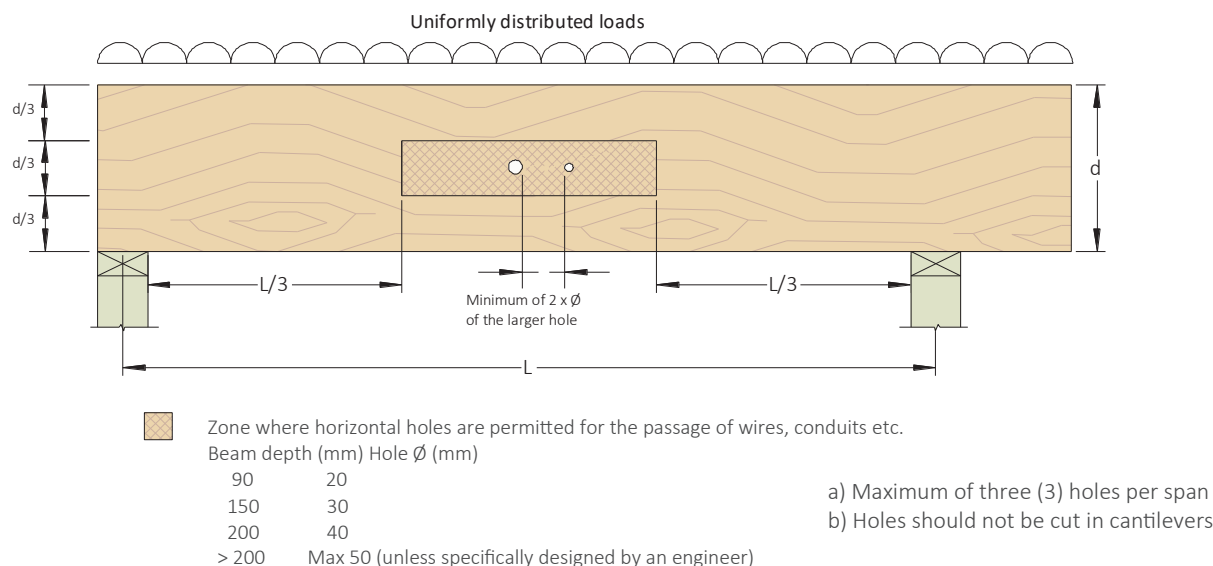
Like notches, holes in an LVL beam reduce the net section of the beam at the hole location and introduce stress concentrations. This causes a reduction in the beam capacity. For this reason, horizontal holes in LVL are limited in size and location to maintain the structural integrity of the beam. Figure 2 shows the zones of a uniformly loaded beam in simple or multiple spans, where the onsite drilling of holes may be considered. The requirements

given consider the effect of the horizontal hole on the shear and moment capacities of an LVL beam, and may be applied to multiple-piece built-up LVL beams.

Where larger horizontal holes than those specified in this document cannot be avoided in design, in some circumstances larger penetrations may be specifically designed by a structural engineer experienced in timber engineering.

Figure 2

Permissible horizontal round hole locations for LVL beams under uniform loads



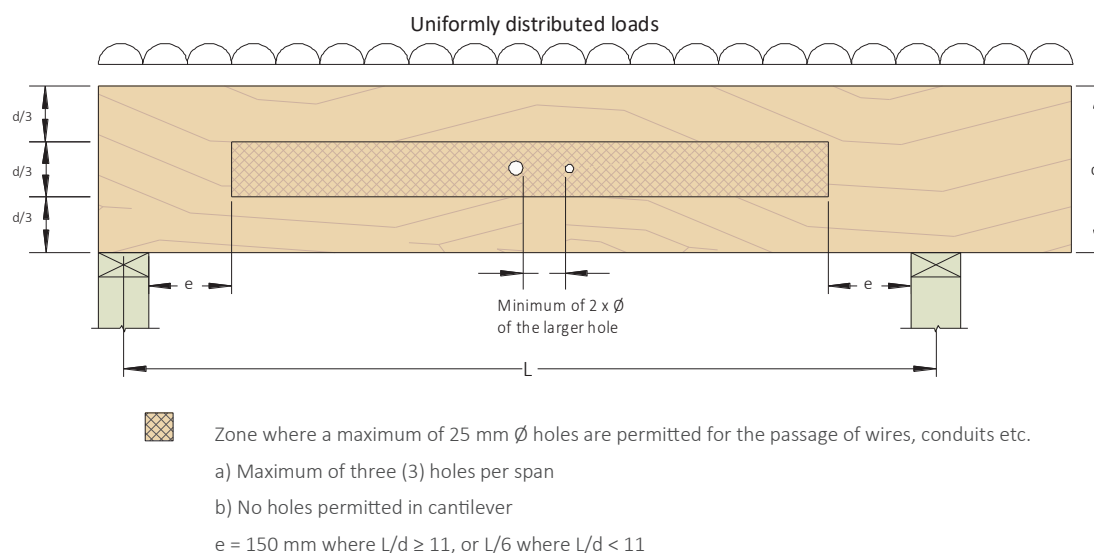
A 25 mm ϕ or smaller hole may be cut at the middle $\frac{1}{3}$ of the beam depth anywhere along the span, except for the area that is within 150 mm of clear distance between the face of the support and the nearest edge of the hole (see Figure 3 on next page), provided the following conditions are all met:

1. The beam is at least 190 mm in depth
2. The beam is subject to uniform loads only

3. The span-to-depth ratio (l/d) is at least 11
4. The maximum number of holes for each span is limited to three
5. The horizontal spacing must be a minimum of two diameters clear distance between adjacent holes based on the diameter of the larger hole
6. The hole must not be cut in cantilevers.

Figure 3

Zones where a 25 mm or smaller diameter horizontal holes are permitted in a uniformly loaded LVL beam of depth ≥ 190 mm



1.5 On-site cutting, notching and drilling of SmartLVL beams, bearers, rafters and joists (Cont'd)

Horizontal holes (Cont'd)

Beam depth (mm)	Span when L/d = 11 (mm)
200	2200
240	2640
300	3300
360	3960
400	4400
450	4950
525	5775
600	6600

The L/d of 11, is the span to depth ratio that segments the expected failure modes between shear and bending. When $L/d < 11$, the span is short, and it is expected that shear strength rather than bending will govern.

Onsite-drilled horizontal holes should be used for access only

and should not be used as attachment points for brackets or other load bearing hardware unless specifically designed as such by an engineer. Examples of access holes include those used for the passage of wires, electrical conduit, small-diameter sprinkler pipes, fibre-optic cables and other small, lightweight materials.

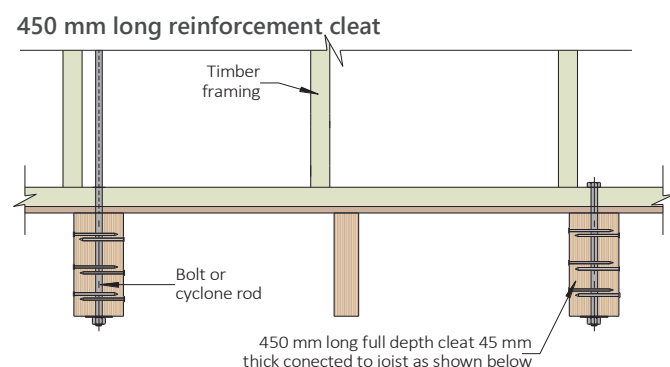
For LVL beams that have been over-sized, the guidelines given above may be relaxed based on an engineering analysis. When holes are required to be drilled outside the allowable zones, an engineering analysis should be conducted and approved by a structural engineer experienced in timber engineering.

Regardless of the hole location, holes drilled horizontally through a member should be positioned and sized with the understanding that the beam will deflect (creep) more over a period of time under in-service loading conditions. This deflection could overstress supported equipment or piping unless properly considered.

Vertical holes

Whenever possible, avoid drilling vertical holes through LVL beams unless the beam width is at least 58 mm. For SmartLVL elements ≤ 58 mm thick, a 450 mm long cleat should be added as shown below, to avoid drilling vertical hole through thinner member.

Use a drill guide to minimize "wandering" of the bit to ensure a true alignment of the hole through the depth of the beam. The vertical hole should be centred in the beam width.



Nails/screws/bolts	Design Capacity
6 off 3.75 ϕ nails each side with min 40 mm penetration into adjacent joist/cleat	20 kN Wind uplift
6 off No 12 Type 17 screws with min 40 mm penetration into joist	
5 off No 14 Type 17 screws with min 45 mm into joist	
3 off M10 bolts	

As a rule of thumb, vertical holes drilled through the depth of an LVL beam cause a reduction in the capacity at that location directly proportional to the ratio of $1\frac{1}{2}$ times the diameter of the hole to the width of the beam. For example, a 12 mm hole drilled in a 58 mm wide LVL beam would reduce the beam capacity at that section by approximately $(12 \times 1.5)/58 = 31\%$

Holes for support of suspended equipment

Heavy equipment or piping suspended from LVL beams should be attached such that the load is applied to the top of the beam to avoid inducing tension perpendicular-to-grain stresses.

Any horizontal holes required for support of significant weight, such as suspended heating and cooling units or main water lines, should be located above the neutral axis of the beam and in a zone stressed to less than 50% of the allowable bending stress. The beam capacity should be checked for all such loads to ensure proper performance.

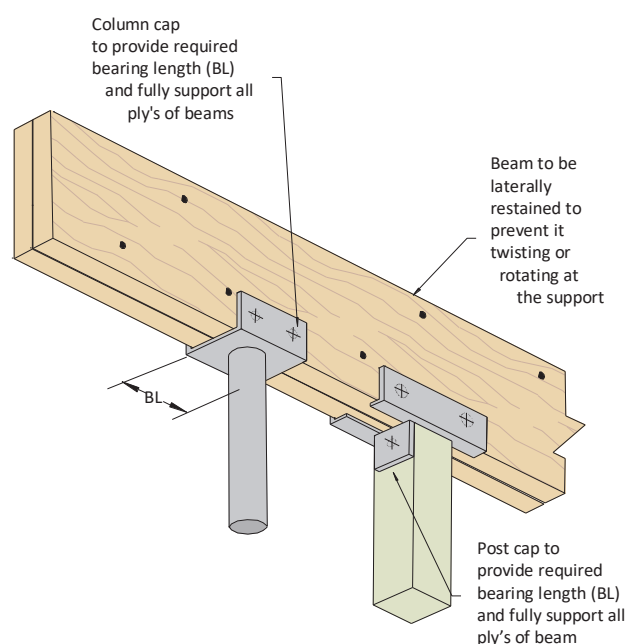
Protection of onsite-cut notches and holes

Frequently, LVL beams are provided by the manufacturer with the ends sealed by a protective coating. This sealer is applied to the end grain of the LVL to retard the migration of moisture in and out of the beam ends during transit and job site storage. Onsite cutting a notch at the end of a beam can change the moisture absorption characteristics of LVL at the notch location. This can result in localized splitting at the corners of the notch. To minimize this possibility, all notches should be sealed with a water-repellent sealer immediately after cutting. Sealing other onsite cuts as well as onsite-drilled holes is also recommended. These sealers can be applied with a brush, swab, roller or spray gun.

Further Information

Further information about the provision of larger holes, or advice about dealing with holes that have been cut into the LVL that are outside these guideline can be obtained by contacting the techsupport helpline on 1300 668 690 or at techsupport@tilling.com.au.

1.6 Steel and timber post fixing to SmartLVL



1.7 Fire resistance

The Fire Resistance Level (FRL) is the performance criteria for fire resistance, i.e. the grading periods (in minutes) for the following criteria as specified in the BCA:

- Structural adequacy: (the duration for which the elements can carry its designated load)
- Integrity: (the duration for which the element can maintain its integrity to prevent the spread of fire to/from the compartment)

and

- Insulation: (the duration for which the element is insulating the adjacent space from excessive temperature rise)

and is expressed in that order e.g. 30/30/30. The method for determining the structural component of the Fire Resistance Period for timber (including LVL and Glulam) is described in AS / NZS 1720.4 - 2019 Timber Structures Part 4: Fire resistance of timber elements.

$$c = 0.4 + \left(\frac{280}{\delta} \right)^2$$

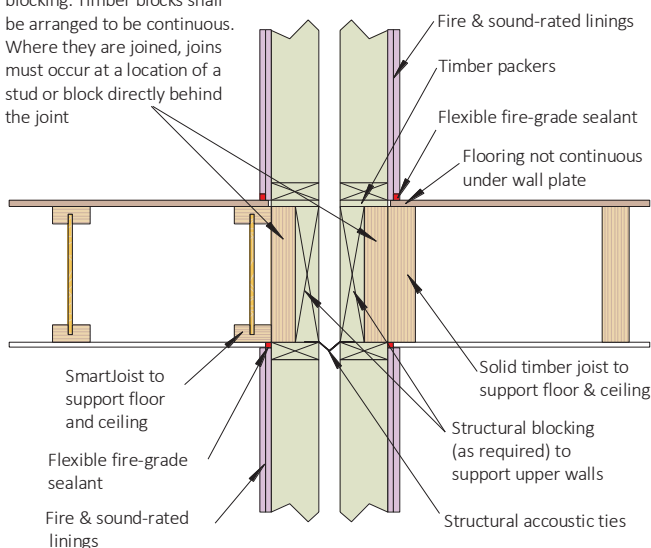
Equation 2.5.2

where:

Floor joists parallel to the wall

CB2

Additional 45/58 mm SmartLVL blocking. Timber blocks shall be arranged to be continuous. Where they are joined, joins must occur at a location of a stud or block directly behind the joint



c = notional charring rate, in mm per minute

d = timber density of SmartLVL 13 - ~ 600 kg/m³

The effective depth of charring (d_c) after a period of time (t) shall be calculated in accordance with Clause 2.6.1 for surfaces exposed to fire and in accordance with Clause 2.6.2 for surfaces behind fire-resistant protective insulation.

The examples detailed below contain generic fire detailing principles related to a non-rated floor abutting a rated wall where separation walls require a FRL not less than 60/60/60, commonly found in class 1a applications.

They have been included only to demonstrate that the type of joists within the non-rated floor do not effect the FRL of the rated wall junction, provided the wall is correctly detailed.

It is mandatory that those designing fire separation walls seek out and specify the latest relevant details either from a Fire Engineer, WoodSolutions® Technical Design Guides available at www.woodsolutions.com.au and Regulatory Authorities.

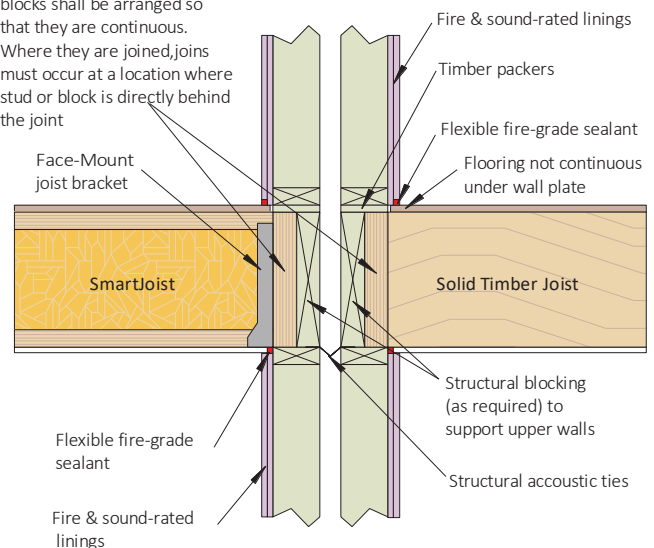
If using a tested and certified proprietary system, that system must be followed without variation.

Further information about using SmartFrame product in fire rated applications can be obtained by contacting the Techsupport Helpline on 1300 668 690.

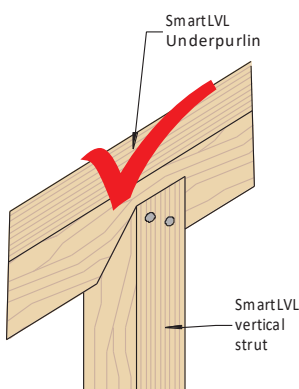
Floor joists perpendicular to the wall

CB1

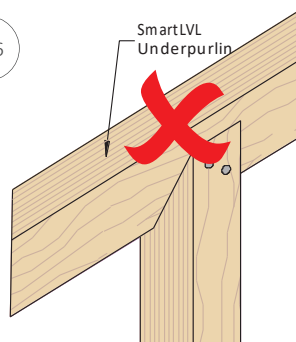
Additional 45/58 mm SmartLVL blocking. Timber blocks shall be arranged so that they are continuous. Where they are joined, joins must occur at a location where stud or block is directly behind the joint



1.8 Roof construction detailing

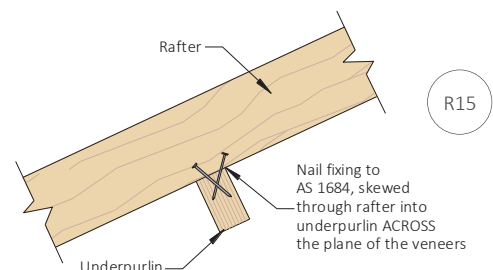


R16



Vertical SmartLVL roof struts

DO NOT cut the birdsmouth in the direction of the SmartLVL veneers

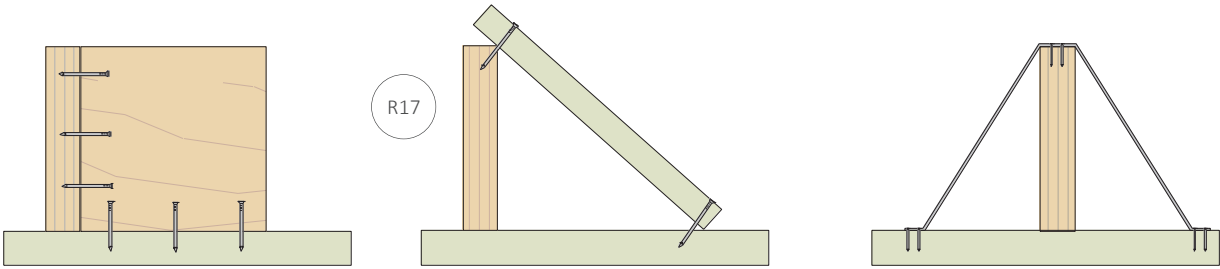


R15

Rafter underpurlin fixing

Rafts are NOT to be skew nailed to the underpurlin with the nails parallel to the direction of the veneers

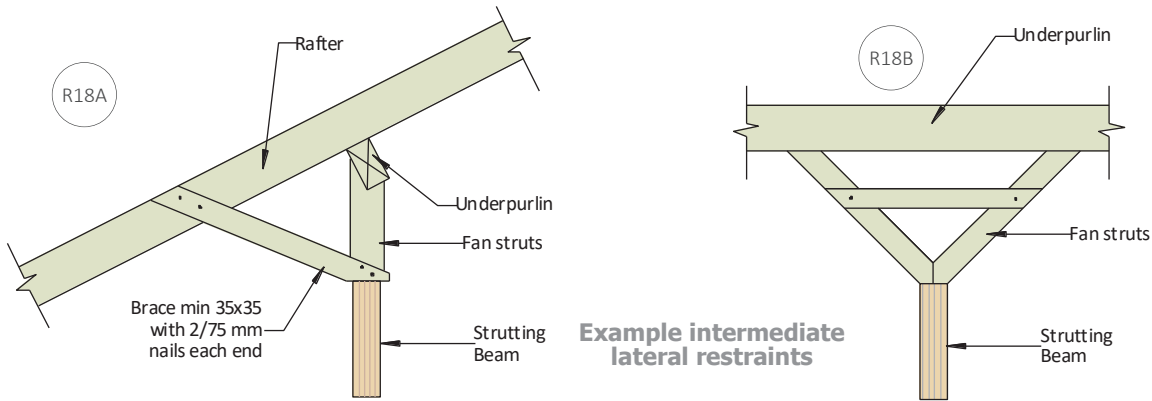
1.9 Lateral restraint of Hanging, Counter, Strutting, Strutting/hanging beams, Strutting/counter beams



(a) Block skew nailed to beam and to support with 3/75 mm skew nails to each member.
(b) Min 35 x 32 mm tie nailed to top of beam and to support with 2/75 mm nails at each end.
(c) Galvanised strap nailed to support and top of beam with 2/30 x 2.8 φ mm nails each end and to beam.

Notes:

- 1. Method used depends upon whether ceiling joists are perpendicular or parallel to the beam
- 2. Methods given in (b) and (c) are particularly suitable for restraining strutting beams and strutting/hanging beams at the intermediate points where the beams are supported, as they also permit these beams to be supported up clear of the ceiling joists by packing under at their supports.



1.10 Chemical resistance

SmartLVL (wood in general) has a definite advantage over steel members when exposed to corrosive environments. Timber and wood products are able to withstand mild acid conditions and are more resistant to degradation.

The behaviour of SmartLVL in chemical environments depends upon a number of factors, including PH and temperature. Wood essentially responds by either swelling (Category S), similar to moisture response, or by chemical degradation (Category D). Damage due to swelling is essentially reversible, but chemical degradation results in breakdown of the wood structure and is non-reversible. Category S agents include alcohol and other polar agents. These agents swell dry wood causing a strength (and stiffness) loss proportional to the swelling.

Category D agents include acids, alkalis and salts and result in a loss of strength and stiffness directly related to the loss of member cross-section. The table below provides a rough guide to performance of SmartLVL in chemical environments.

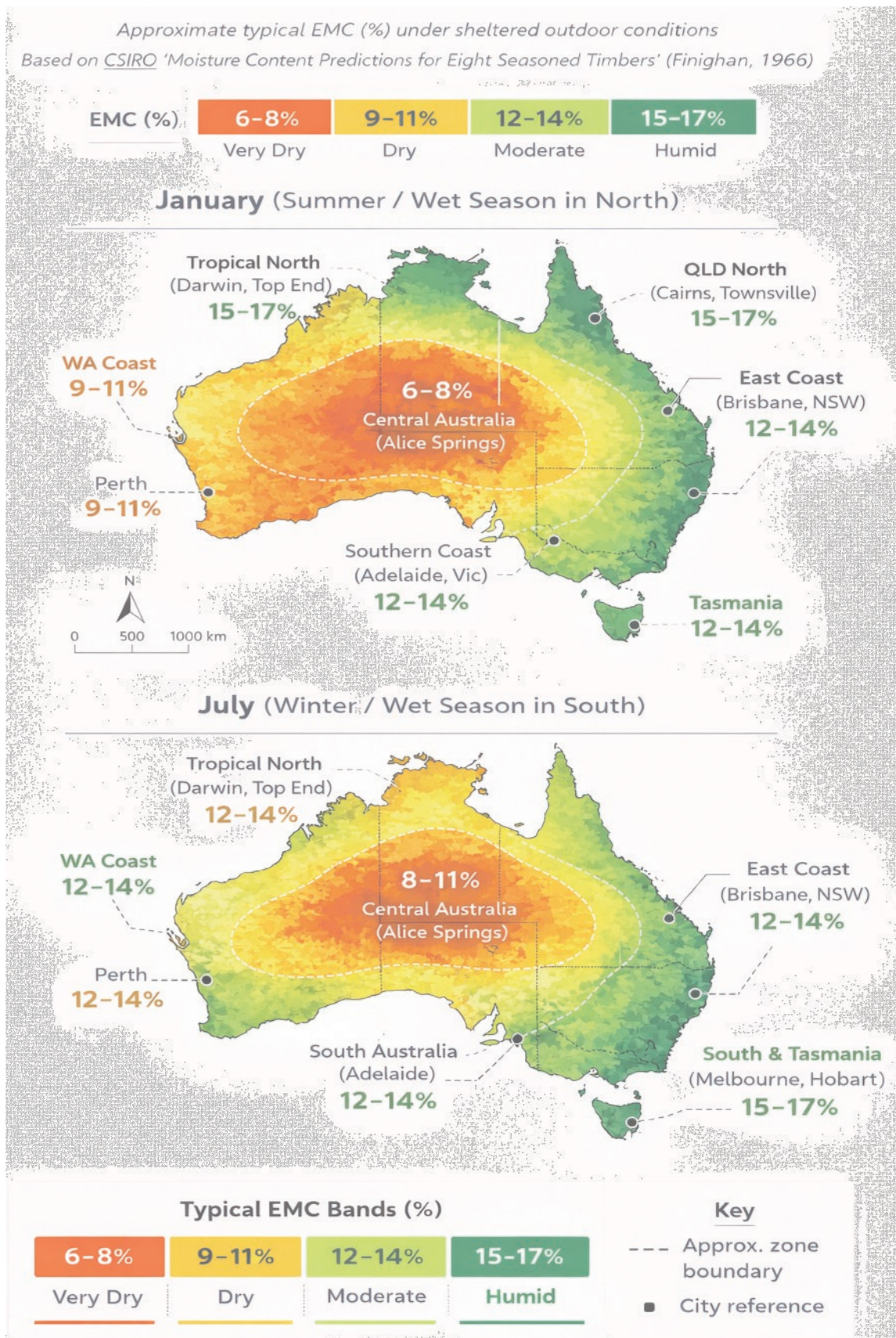
The effect of chemicals on wood will generally be worsened by increased exposure time, temperature, extremes of pH and chemical concentration. Wood generally offers considerably less resistance to alkalis than acids. Softwoods (includes SmartLVL) generally have better resistance to acids than hardwoods.

Where there is the possibility of chemical attack on SmartLVL members, designers should seek expert advice.

Agent category	Chemical agent	Mode of attack	Damage - reversible or permanent	Severity - (loss of strength and/or stiffness)
Neutral	Non-polar liquids such as petroleum hydrocarbons	None	Negligible	Negligible
S (swelling)	Alcohol and other polar solvents	Swelling	Reversible	Proportional to volumetric swelling
D (degrading)	Inorganic acids	Hydrolysis of cellulose	Permanent	Slight to moderate
D	Organic acids such as: Formic, acetic, propionic and lactic acid	Hydrolysis of cellulose	Permanent	Slight (pH 3-6)
D	Alkalis such as: sodium, calcium and magnesium hydroxide	De-lignification of wood and dissolving of hemicellulose	Permanent	Moderate (pH > 9.5) Severe (pH > 11)
D	Salts (considered as weak acids)	Hydrolysis of cellulose	Permanent	Slight

Table reference Williamson T.G. 2002 APA Engineered Wood Handbook

Timber equilibrium moisture content (EMC) zones in Australia



Climate description (engineering interpretation)

Term	Meaning for timber	Term	Meaning for timber
Arid	Very low EMC, minimal shrink/swell	Humid coastal	High EMC, low seasonal variation
Semi-arid maritime	Moderated, but still relatively dry	Tropical	High EMC, wet-season driven
Mediterranean	Large seasonal swing	Temperate	Moderate-high EMC, winter dominant

Predicted EMC range of timber for sheltered outdoor conditions by City

City	State	Jan EMC (%)	Jul EMC (%)	EMC band (%)	Climate description
Darwin	NT	16–18	14–16	14–18	Tropical monsoonal (wet/dry season)
Alice Springs	NT	6–8	8–10	6–10	Arid desert interior
Perth	WA	9–11	12–14	9–14	Mediterranean coastal
Carnarvon	WA	9–11	11–13	9–13	Semi-arid maritime coast
Broome	WA	13–15	12–14	12–15	Tropical coastal (monsoonal influence)
Albany	WA	11–13	14–16	11–16	Cool temperate coastal
Geraldton	WA	9–11	12–14	9–14	Semi-arid maritime transition
Kalgoorlie	WA	7–9	10–12	7–12	Arid inland
Adelaide	SA	9–11	13–15	9–15	Mediterranean temperate
Port Lincoln	SA	10–12	14–16	10–16	Southern coastal temperate
Whyalla	SA	8–10	12–14	8–14	Semi-arid coastal
Broken Hill	NSW	6–8	11–13	6–13	Arid inland
Mildura	VIC	8–10	12–14	8–14	Semi-arid inland
Melbourne	VIC	10–12	15–17	10–17	Temperate coastal
Geelong	VIC	10–12	15–17	10–17	Temperate coastal
Ballarat	VIC	10–12	15–17	10–17	Cool inland temperate
Hobart	TAS	11–13	15–17	11–17	Cool temperate maritime
Launceston	TAS	11–13	15–17	11–17	Cool temperate inland
Canberra	ACT	9–11	14–16	9–16	Temperate inland
Sydney	NSW	12–14	14–16	12–16	Humid coastal
Wollongong	NSW	13–15	15–17	13–17	Humid coastal
Newcastle	NSW	12–14	14–16	12–16	Humid coastal
Dubbo	NSW	8–10	13–15	8–15	Inland temperate
Bathurst	NSW	9–11	14–16	9–16	Inland temperate
Brisbane	QLD	14–16	13–15	13–16	Subtropical humid
Gold Coast	QLD	14–16	13–15	13–16	Subtropical coastal
Townsville	QLD	14–16	13–15	13–16	Tropical coastal (seasonal dry)
Cairns	QLD	15–17	14–16	14–17	Tropical humid
Mackay	QLD	15–17	14–16	14–17	Tropical coastal
Rockhampton	QLD	14–16	13–15	13–16	Subtropical transitional
Toowoomba	QLD	11–13	13–15	11–15	Elevated inland subtropical

1.11 Durability and exposure to moisture

1.11.1 Basis of EMC zone maps

Timber is a hygroscopic material that exchanges moisture with surrounding air until an equilibrium condition is reached. This equilibrium moisture content (EMC) depends primarily on the relative humidity (RH) and temperature of the surrounding environment.

The city-based EMC table has been developed using the CSIRO dataset “Moisture Content Predictions for Eight Seasoned Timbers under Sheltered Outdoor Conditions in Australia and New Guinea” (Finighan, 1966), which provides predicted monthly timber moisture contents for a wide range of Australian localities.

In that study, timber specimens of multiple species and thicknesses were exposed under sheltered outdoor conditions, and their moisture contents were correlated with long-term meteorological data, primarily dry-bulb temperature and relative humidity using regression equations.

The resulting tables present monthly mean moisture contents representative of typical in-service conditions for protected structural timber.

For each city, January and July EMC ranges were derived to capture seasonal variation, recognising that Australia exhibits two distinct moisture regimes: a monsoonal pattern in the north where summer (wet season) EMC exceeds winter values, and a temperate pattern in the south where winter EMC is higher due to increased relative humidity. The ranges presented are not single-point estimates but envelopes that account for inter-species variation, short-term climatic fluctuation, and the statistical spread inherent in the CSIRO regression models.

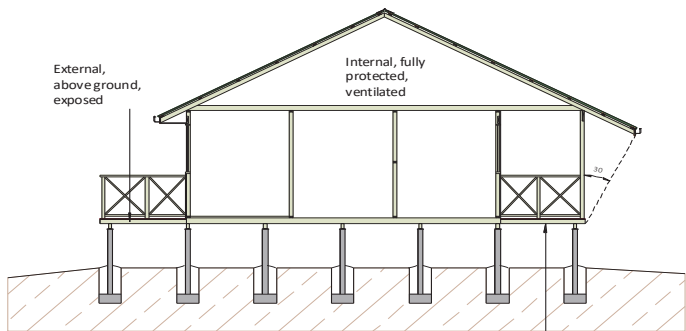
This approach aligns with the original study, which demonstrated that predicted moisture contents typically fall within a narrow band (generally within ±1–2%) of observed values under comparable conditions.

Finally, an annual EMC band has been assigned to each location, representing the practical range between seasonal minima and maxima. These bands are intended for design application, such as assessing timber shrinkage, serviceability, and durability risk. The associated climate descriptions further group cities into coherent moisture regimes, enabling designers to extrapolate beyond individual locations and apply EMC assumptions at a regional scale.

1.11.2 LVL Durability and exposure to moisture

SmartLVL is manufactured from softwood veneers which have a durability rating of class 4, which is the same rating as some Ash type Eucalypts.

Definitions of exposure zones within a structure



External timbers are regarded as protected in AS 1684 if they are covered by a roof projection (or similar) at 30° to the vertical and they are well detailed and maintained (painted and kept well ventilated).

Untreated SmartLVL should not be used where the equilibrium moisture content is likely to remain above 20% for an extended

period.

Untreated and H2s SmartLVL is suitable in the *internal, fully protected, ventilated* and the *external above ground, protected* zones of the structure as shown below. Untreated or H2s SmartLVL is not suitable for *external above ground, exposed* or humid indoor conditions, such as swimming pool enclosures.

SmartLVL, like all wood products, is hygroscopic, which means it has an affinity for water, and being a LVL, should be considered as a composite of many pieces of wood, each with different potential swelling. Moisture exposure will ultimately lead to dimensional change.

SmartLVL is supplied WITH a new generation short term construction water repellent (H₂O Shield™) and once framed into a structure may be exposed to the weather for a limited time (usually not greater than 3 months) without negative affect, BUT, it may exhibit some effects of this exposure such as swelling and checking (especially at cut ends), depending upon the weather conditions.

While offering significant water short term repellency comparable to wax coatings, the H₂O Shield™ does NOT totally WATER PROOF the LVL. While the products will withstand normal exposure, excessive exposure during distribution, storage or construction may lead to dimensional changes that affect serviceability. These changes include cupping, bowing or expansion to dimensions to beyond the specified tolerance of the product in the “as-manufactured” condition.

Individual members of a vertically laminated multi member may exhibit some cupping if water becomes trapped between the laminates. This cupping produces more of a visual and possible fixity problem rather than being structurally significant. If not properly dried out, this moisture between laminated members may lead to decay. To prevent this effect, use construction details as shown on page 2.

As an organic material, mould and mildew may grow on untreated wood products if moisture is present. Prolonged periods of high moisture may also support the growth of wood decay fungi. The H₂O Shield™ does provide some resistance to mould and fungi attack, but it is NOT equivalent to H3 treatment.

In critical applications where dimensional change due to moisture exposure is to be absolutely minimised ((e.g. truss applications in wet humid conditions) it is recommended that the remedial H₂O shield available from Tilling Timber in spray cans (or bulk for airless spray guns) be used to recoat any cut ends or notches etc.

The table below shows the moisture content of LVL as a function of humidity.

Moisture content of wood products % ⁽¹⁾	
Relative Humidity %	LVL MC
10	1.2
20	2.8
30	4.6
40	5.8
50	7.0
60	8.4
70	11.1
80	15.3
90	19.4

1. Approx. moisture content at 21°C

1.11.3 Dimensional Change

SmartLVL will shrink and swell in proportion to the moisture content between 0 and 28% fibre saturation point.

1.11 Durability and exposure to moisture

The most significant moisture movement will occur across the grain (tangential and radial directions within a log). Longitudinal (movement in the grain direction) may be a factor depending upon the type of structure. Detailing of SmartLVL to be used where moisture contents will cycle should allow for dimensional instability.

The AVERAGE amount of dimensional change in a piece of LVL changes in moisture content can be APPROXIMATED by the following formula:

$$\Delta D = D_i S (MC_i - MC_f) / FSP$$

Where:

ΔD = change in dimension

D_i = Initial dimension

S = Shrinkage coefficient = approximately 6%

MC_i = Initial moisture content

MC_f = final moisture content

FSP = fibre saturation point approximately 28%

HOWEVER, these dimensional effects are quite variable. Thickness swell in LVL is erratic along the length because of the densification of the lap joints during manufacture tends to “relieve” when saturated and the total swell in sections containing two (2) laps can be as much as 3 mm.

Worked example

Estimating timber movement from EMC change

If a 300 × 63 LVL13 roof beam that is at equilibrium in Perth is instead used in Broome in January, how much increase in depth and width could be expected?

Step 1 — EMC difference

Use the midpoint of the two EMC bands:

- Perth January EMC ≈ 10 %
- Broome January EMC ≈ 12.0 %

So:

$$\Delta MC = 12 - 10 = 2.0\%$$

That means the LVL would be expected to gain moisture and therefore swell slightly in Broome relative to Perth.

Step 2 — Movement formula

Use:

$$\Delta d = d \times 0.0027 \times \Delta MC$$

where d is the relevant cross-sectional dimension in mm.

Step 3 — Change in depth

For the 300 mm depth:

$$\Delta d = 300 \times 0.0027 \times 2.0 = 1.62 \text{ mm}$$

Expected increase in depth ≈ 1.6 mm

Step 4 — Change in width

For the 63 mm width:

$$\Delta b = 63 \times 0.0027 \times 2.0 = 0.34 \text{ mm}$$

Expected increase in width ≈ 0.3 mm

For a 300 × 63 LVL13 roof beam moving from Perth January conditions to Broome January conditions, a reasonable worked-example estimate is:

- Depth increase: about 1.6 mm

- Width increase: about 0.3 mm

Because the EMC values are bands, there is a reasonable range around that midpoint result:

- If the EMC difference were only 1%, the beam would increase by about 0.8 mm in depth and 0.2 mm in width
- If the EMC difference were 3%, the beam would increase by about 2.4 mm in depth and 0.5 mm in width

1.11.4 Change in characteristic strengths

Changes in moisture content in wood results in changes in mechanical properties, with higher properties at lower moisture contents. Estimates of the effect of moisture differentials on the properties of clear wood may be obtained by the following equation:

$$P = P_{12} \left(\frac{P_g}{P_{12}} \right)^{\left(\frac{12 - M}{M_p - 12} \right)}$$

Where:

P = Characteristic property at moisture content

P_{12} = same Characteristic property at 12% moisture content

P_g = same Characteristic property for Green wood

M_p = Intersection moisture content = 24%

APPROXIMATE affect upon key characteristic design properties of LVL by changes in MC are outlined in the table below:

Characteristic Property		% Reduction in Characteristic strength at % MC					
		14	16	18	20	22	24
MOE (Stiffness)	E	3.3	6.5	9.7	12.7	15.6	18.4
MOR (Bending)	F _b	8.4	16.1	23.1	29.6	35.5	40.9
Compression perpendicular to grain	f _p	9.9	18.9	27.0	34.2	40.8	46.7
Compression parallel to grain	f _c	11.0	20.7	29.4	37.2	44.1	50.2
Shear	f _s	6.6	12.8	18.6	24.0	29.0	33.7

The design Characteristic properties of SmartLVL can therefore be considerably reduced by severe increase in MC of the LVL.

If the SmartLVL is being built into structures (such as Prefabricated trusses) that are:

1. Likely to experience large increase in MC due to weather exposure or stored on the ground
2. Likely to be loaded to at/or close to design loads while in the high MC state

then the reduced Characteristic Strengths as detailed above NEED to be used in the design or members may require temporary propping.

Once covered, the SmartLVL will ultimately dry and re-equilibrate to the ambient humidity conditions, but some expansion or swelling will remain after re-drying. The thickness swelling in laps will never fully shrink back and a large piece of LVL can have a final thickness variation along the length of 3-4 mm.

Estimating timber deflection change from EMC change

For a 300 × 63 timber member designed in Perth to have a long-term deflection of 10 mm under $G=0.4$ and $Q=1.5$, with $j_2=2$,

1.11 Durability and exposure to moisture

corresponding member in Broome may be expected to deflect about 11.0 mm under the same loading.

Worked example:

Summary- In this worked estimate, the increase arises from two sources: a small increase in immediate elastic deflection due to reduced stiffness at higher service moisture content, and a larger increase in the mechano-sorptive / creep component associated with the wetter Broome service environment.

The net increase is about 0.95 mm, or about 10%.

Step 1 — Back-calculate the Perth load-deflection constant

Item	Perth	Broome	Comment
Member size	300 × 63	300 × 63	Same section
Permanent action, G	0.4	0.4	Same load
Imposed action, Q	1.5	1.5	Same load
Adopted creep factor j_2	2.0	2.35	Broome increased for higher EMC
Representative service EMC	11.5%	13.5%	From the Perth/Broome climate bands previously derived
Relative stiffness factor	1.00	0.96	Assumed 4% lower E in Broome
Assumed long-term Deflection (mm)	10.00	—	

Given:

$$10 = k[Q + (1 + j_2)G]$$

$$10 = k[1.5 + (1 + 2) \times 0.4]$$

$$10 = k(2.7)$$

$$k = 3.7037 \text{ mm per load unit}$$

Step 2 — Split the Perth deflection into elastic and mechano-sorptive parts

Perth component	Calculation	Deflection
Immediate dead-load deflection	0.4×3.7037	1.48 mm
Immediate live-load deflection	1.5×3.7037	5.56 mm
Total immediate elastic deflection	$1.48 + 5.56$	7.04 mm
Mechano-sorptive / creep increment	$j_2 \times \Delta G_{inst} = 2 \times 1.48$	2.96 mm
Total long-term deflection	$7.04 + 2.96$	10.00 mm

Step 3 — Adjust the elastic part for Broome

Assume Broome service EMC is about 2 percentage points higher, giving a 4% reduction in stiffness:

$$E_{Broome} = 0.96 \times E_{Perth}$$

So deflection increases by:

$$1/0.96 = 1.0417$$

Broome elastic component	Calculation	Deflection
Immediate dead-load deflection	1.48×1.0417	1.54 mm
Immediate live-load deflection	5.56×1.0417	5.79 mm
Total immediate elastic deflection	7.04×1.0417	7.33 mm

Step 4 — Adjust the mechano-sorptive part for Broome

Using the EMC ratio:

$$13.5/11.5 = 1.174$$

$$j_{2,Broome} = 2.0 \times 1.174 \approx 2.35$$

Then:

$$\Delta_{ms,Broome} = 2.35 \times 1.54 = 3.62 \text{ mm}$$

Step 5 — Total Broome long-term deflection

Broome total	Calculation	Deflection
Immediate elastic	—	7.33 mm
Mechano-sorptive / creep increment	—	3.62 mm
Total long-term deflection	$7.33 + 3.62$	10.95 mm

Note: These example are illustrative only.

The assumed relationship between EMC, dimensional change, stiffness reduction and creep / mechano-sorptive behaviour is simplified for worked-example purposes and should not be taken as a product-specific design rule.

Actual values may vary with species, product type, load duration, moisture cycling amplitude, and service exposure.

1.11.5 Design for durability

- The use of building overhangs and other structures which protect the beams from excessive moisture movement and sun exposure.
- All beams should be provided with adequate ventilation so that moisture content within beams will not exceed 15% and moisture gradients across the beam will not occur.
- The use of arrised or round edges on beams to reduce the likelihood of coating failures on sharp edges.
- The use of drip edges or other devices which provide a path for free moisture flow away from the timber beam.
- Joint detailing should, wherever possible, comply with the following:
 - Keep horizontal contact areas to a minimum, in favour of self draining vertical surfaces.
 - Ventilate joint surfaces by using spacers, wherever possible
 - Always use compatible fasteners which have adequate corrosion protection and do not cause splitting during installation e.g. hot dipped galvanic coatings or stainless steel
 - Ensure any moisture entering a joint is not trapped but can adequately drain away from the joint.

Allow for thermal expansion/contraction in the joint design.

1.11.6 Post-Production treatment

SmartLVL is supplied glue-line H2S* treated or can be supplied either LOSP treated or Tru-Core® treated to either H2 or H3 hazard class levels, as per AS/NZS 1604.4. (Tru-Core® is a registered trade mark of Kop-Coat Australia PTY Limited)

To maintain effective treatment it is a requirement that any cuts, notches or penetrations made in post production treated LVL be painted with a suitable "brush/spray on" preservative.

The hazard class number selected is based upon the specific exposure condition for the proposed end use of the SmartLVL, as shown in the table on the next page.

1.11 Durability and exposure to moisture (Cont'd)

Hazard class selection guide				
Hazard class	Exposure	Specific service conditions	Biological hazard	Typical uses
H1 [†]	Inside, above ground	Completely protected from the weather and well ventilated, and protected from termites	Lyctid borers	Interior beams, staircases, stringers
H2S*	Inside, above ground	Protected from wetting Nil leaching	Borers and termites	Interior beams, staircases, trusses, joists
H2	Inside, above ground	Protected from wetting Nil leaching	Borers and termites	Interior beams, staircases, trusses, joists
H3	External, above ground	Subject to periodic moderate wetting and leaching	Moderate decay, borers and termites	Exterior beams ⁽¹⁾

[†] The timber species in SmartLVL are not susceptible to Lyctid Borer attack

* H2S treatment is only suitable South of the Tropic of Capricorn

A more comprehensive Hazard Class Table is available in AS/NZS 1604.4, but it is NOT recommended that SmartLVL be used in end uses with exposures requiring treatment in excess of H3.

Experience is showing that post production treated LVL in the **external above ground, exposed** (H3 Hazard Class) may experience some leaching of the active ingredients of the treatment. To minimise the possibility of timber degradation in these situations, it is recommended that H3 treated Smart LVL NOT be used where the surface is horizontally exposed AND unprotected from water entrapment OR where post-treatment protection cannot be maintained.

Post treatment protection may include:

- I. Protectadeck or Vapour Seal high density water proof joist/ bearer cover or malthoid capping
- and
- I. An impervious membrane such as regularly maintained painting or staining
- II. Construction detailing to prevent water entrapment.

H3 treated SmartLVL is NOT recommended for fascia's, pergolas or other similar external above ground, exposed applications due to mechanical degradation of the wood fibre causing checking and cracking which is both aesthetically unacceptable and allows ingress of water to inner veneers.

1.11.7 Fasteners for H3 LVL

For any H3 Smart LVL to be used in exposed exterior applications, it is recommended that either hot dipped galvanised or stainless steel fasteners are used.

Specifically, If the Tru-Core® Copper Quat H3 treatment process is used, high grades (304, 305 and 316) of stainless steel materials perform the best.

1.11.8 Painting of treated SmartLVL

General

To provide the longest service life of the SmartLVL it is recommended the LVL is painted with an exterior paint with a Light Reflectance Value (LRV) greater than 30%. Heat reduction exterior paints should be used where the desired colour is dark or has a LRV of less than 30% The heat reflective paint's colours should be lim-

ited to a Total Solar Reflectance (TSR) value greater than 29%.

Any paint or stain must be recommended by the manufacturer as being suitable for the proposed application and must be applied in a manner in strict compliance to the manufacturer's recommendations.

LOSP Treated

Wait until excess solvents have evaporated and timber is dry. The pressure of the solvent (white spirits) from the LOSP treatment may affect the drying and hardening of paints if there has been insufficient evaporation time after the treatment. It is strongly recommended that the treated timber is left to recondition for at least 7 days in the end use situation before painting.

One coat of premium quality primer as a minimum should be applied to all surfaces prior to erection of beam and to any cuts or holes drilled. If the first coat of primer, sealant paint or stain fails to dry or adhere within the time expected, do not proceed to any further coats until the first coat has achieved satisfactory dryness and adhesion. If the first coat fails to dry it may be necessary to strip back to bare timber and allow it to weather for another week or two.

a. Paint

Exterior solid colour acrylic finish. One coat of oil based primer followed by one or two coats of the exterior acrylic finish as required.

or

Exterior solid colour oil based enamel. One coat of oil based primer followed by one coat of oil based under-coat (if required) then two coats of the oil based enamel.

b. Stains

Exterior semi-transparent or solid colour penetrating oil based stain or similar. Two or three coats of the stain as required or recommended by the manufacturer.

Water based stains and un-pigmented sealants, oil or water repellents are NOT recommended.

Tru-Core® Treated

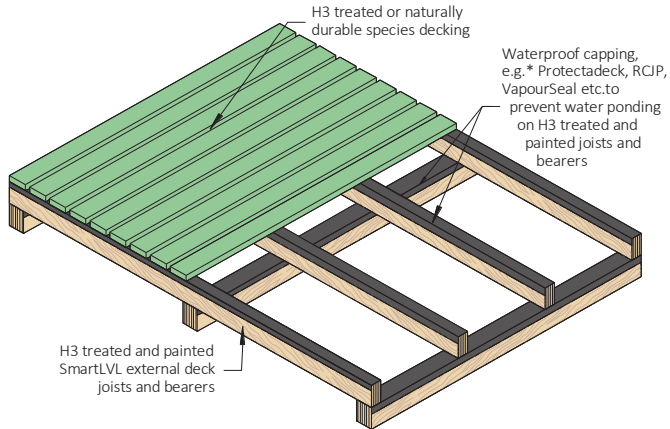
1. The wood must be dry and clean prior to applying any finish coating. If initial cleaning of the treated wood is needed, it is recommended that the project be cleaned with a deck cleaning product and allow to fully dry.
2. At this time, a clear water repellent may be added to the project. If applied, allow 8 weeks prior to the application of a semi-transparent stain or paint
3. If no water repellent is added, an oil based stain can be applied to the clean, dry wood in 30-60 days from treatment date. A water based stain can be applied to the clean, dry wood in 45-70 days from treatment date.
4. Depending on the treatment method used, if the wood is left uncoated and without UV protection:
 - I. The typical brown colour of the Copper Quat treated wood will naturally weather to a grey colour over long-term exposure to the sun
 - II. The Azole treated wood has no colouration so it will naturally weather to a grey colour over long-term exposure to the sun.

Users must always conduct their own tests on coatings in inconspicuous areas of the project to determine acceptability of colour, adhesion and appearance.

1.11 Durability and exposure to moisture (Cont'd)

1.11.9 H3 Deck bearers and joists

H3 Treated Deck joists and bearers are a common application for treated SmartLVL. The diagram demonstrates the minimum construction detailing for H3 treated joists and bearers. Failure to follow these guidelines may render treatment warranties void.



It is recommended that deck nails be slightly skewed as per the detail adjacent



Note: Impervious membrane images above are examples of commercial products available only. It is the responsibility of the builder to source and install a waterproof membrane that will prevent water ponding on top of any H3 SmartLVL deck joists or bearers.

1.12 Deck ledger attachments

As with window and door installations in walls, paying careful attention to flashing details for decks attached to the house exterior is critical to avoid potential rot and mould of inner non treated wall frames and floor systems. Water from direct rain-fall, splash from decks and runoff from incorrectly sloped deck surfaces can leak into the exterior wall where the deck attaches to the house.

Several conditions contribute to the water problem:

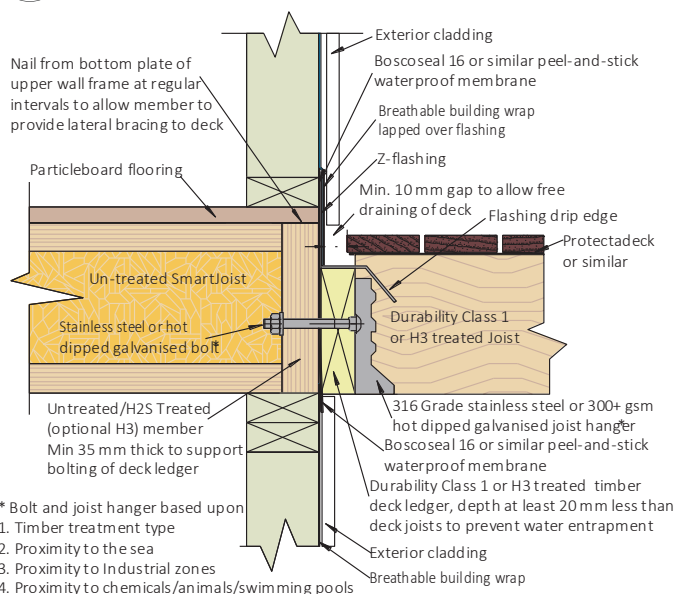
- The ledger board is simply attached to the house with numerous lag screws or other hardware that penetrate the wall's cladding and drainage plane, but no flashing

has been installed to protect these areas

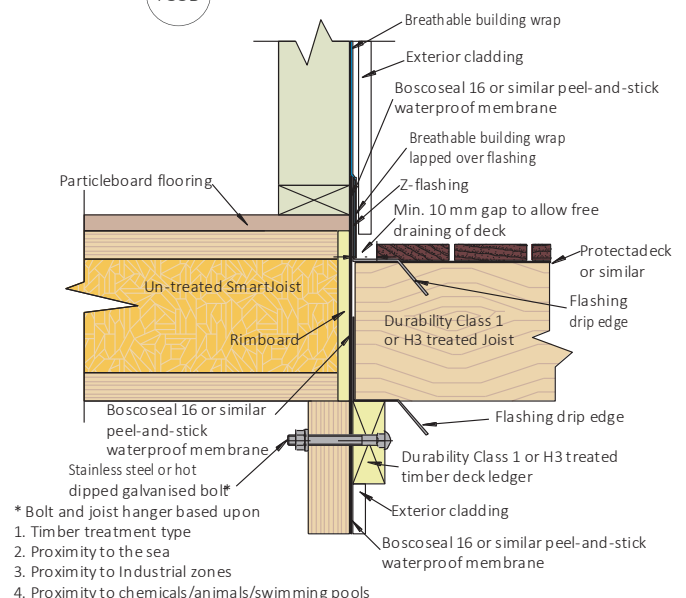
- Water is often trapped behind the ledger board
- Upward splashing of rain from the deck adds significant wetting to the cladding, and inadequate flashing results in wetting and rot in the wall's framing and other internal elements.
- Integrating the attachment of the ledger board with the drainage plane behind the wall's cladding and adding proper flashing will maintain the integrity of the drainage plane and channel water away from the wall's surface.

Example flashing of deck ledger connection to un-treated house frame

F35A



F35B



1.13 Designing with SmartLVL 13

The design information contained within this Design Guide is for the properties of SmartLVL 13 only. Other manufacturers' LVL may have different properties and therefore cannot be designed using this information.

1. Product Specification

Veneer:	Thickness:	1.9-3.0 mm
	Species:	Mixed species, Masson pine, Eucalyptus, Spruce
	Strength Group	SD6
	Joints:	Scarf joint
Dimensional tolerances:	Length:	± 10 mm
	Depth:	≤ 400 mm +2,-3 mm ≥ 400 mm +5, -0 mm
	Thickness:	- 0, +4 mm at 12% moisture content
Adhesive:	Complies with AS/NZS 4364:2010	
Treatment options:	Manufactured as H2S, H2 and H3 available on request	

2. Limit State design characteristic properties

Timber Strength Properties: ⁽¹⁾		
Bending	f'_b	45 MPa
Tension Parallel to grain	f'_t	22 MPa
Tension Perpendicular to grain	f'_{tp}	0.5 MPa
Compression Parallel to grain	f'_c	36 MPa
Compression Perpendicular to grain - Edge	f'_p	11 MPa
Shear	f'_s	5.0 MPa
Average Elastic Modulus	E	13,200 MPa
Average Modulus of Rigidity	G	660 MPa
Average Density		670 kg/m ³
Moisture Content		12-15%

(1) Dry conditions

3. Strength reduction factor

The strength reduction factor for calculating the design capacities of structural members shall be taken from the table below, referenced from AS 1720.1 –2010.

Application of SmartLVL 13 as a structural member		
Category 1	Category 2	Category 3
Structural members for houses for which failure would be unlikely to affect an area greater than 25 m ² ; OR secondary members in structures other than houses	Primary structural members in structures other than houses; OR elements in houses for which failure would be likely to affect an area* greater than 25 m ²	Primary structural members in structures intended to fulfil essential services or post disaster function
Strength reduction factor ϕ^*		
0.95	0.85	0.75

* AS 1720.1:2010 Table 2.1

4. Duration of load

The duration of load factor k_1 for strength and j_2 for creep deformation are defined within clause 2.4 of AS 1720.1.

5. Partial seasoning factor

SmartLVL 13 is a seasoned timber product, generally k_4 equals 1. Where the LVL is subjected to conditions in which the average moisture content for a 12 month period is expected to exceed 15%, the characteristic capacity shall be decreased. The value of k_4 shall be the greater of:

- $k_4 = 1 - 0.3 \frac{EMC - 15}{10}$;
- $k_4 = 0.7$

Where EMC is the highest value of the annual moisture content (percent) that the timber will attain in service.

6. Length and position of bearing

The k_7 bearing factor is defined in clause 2.4.4 of AS 1720.1

7. Load sharing

Because of the reduced variability of strength values of LVL compared to solid timber, the load sharing factor $k_9 = 1.0$ as defined in clause 7.4.3 of AS 1720.1.

8. Stability

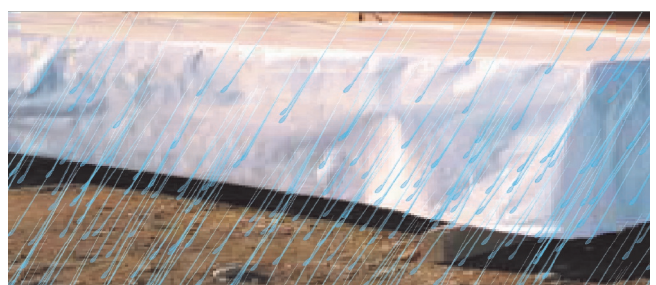
The stability factor k_{12} is defined within section 7 of AS 1720.1 beams. The methods for calculating k_{12} for solid wood in section 3 of AS 1720.1 shall generally apply except that the material constant (ρ_b or ρ_c) for beams and column shall be as given in Tables 7.2(A) and 7.2(B)

9. Temperature

For covered timber structures under ambient conditions, no modification for strength need be made for the effect of temperature (i.e., k_6 equals 1.0) except that where seasoned timber is used in structures erected in coastal regions of Queensland north of latitude 25°S, and all other regions of Australia north of latitude 16°S, the strength shall be modified by a factor k_6 of 0.9.

1.14 Storage and handling of SmartLVL

- Store SmartLVL flat on a hard, dry surface
- If surface isn't paved, the ground should be covered with a polythene film
- Keep covered with waterproof material that allows bundles to "breathe"
- Use bearers (bolsters) between the ground and the first bundle (4 metre max spacing)
- Use 100 x 50 timber flat between bundles at same spacing as bolsters
- Take great care to rewrap remaining material after opening bundles
- LVL "grows" in thickness and depth when allowed to get wet....KEEP DRY!
- LVL with high MC has short term reduction in Characteristic Strengths KEEP DRY!
- Under NO circumstances is stored SmartLVL to be in contact with the ground.



1.15 SmartLVL 13 hanger details

Given the high load carrying capacity of SmartLVL, it is essential that the connection of SmartLVL to other structural members is considered carefully, with the industry practice of simple skew or end nailing of SmartLVL not recommended for anything but the lightest loads.

The list below contains the common light to medium duty

SmartLVL framing brackets stocked by Tilling Timber.

Member connections requiring capacities greater than those listed below can be designed by your own Engineer or SmartFrame Engineers, but any non-standard connection system designed by your own engineer or SmartFrame Engineers may take some time to be fabricated.

				Wind Uplift (k ₁ = 1.14)			
Tilling framing bracket code	Fixing to SUPPORTING beam	Design Capacity ØN _j (kN) 1.2G+1.5Q _f (DL + FLL) JD4	Fixing to SUPPORTED beam	Design Capacity ØN _j (kN) 1.2G+1.5Q _f (DL + RLL) for Joint group			
				JD5	JD4	JD3	Max.
SLF3590, SLF4590	8 Nails	4.6	4 nails	3.2	3.7	5.3	6.0
	4 Screws	6.1	2 screws	3.5	5.0	5.0	5.0
SLF35120, SLF45120	12 Nails	6.4	6 nails	4.7	5.7	7.9	9.0
	6 Screws	9.1	4 screws	7.1	10.0	10.0	10.0
SLF35140, SLF45140	16 Nails	8.4	8 nails	6.2	7.5	10.6	12.0
	6 Screws	9.1	4 screws	7.1	10.0	10.0	10.0
SLF35180, SLF45180	20 Nails	10.3	10 nails	7.4	8.9	12.4	15.0*
	8 Screws	12.1	6 Screws	10.6	15.0*	15.0*	15.0*
SLF45220	26 Nails	13.1	13 nails	9.5	11.3	15.0*	15.0*
	10 Screws	14.2	8 Screws	14.2	15.0*	15.0*	15.0*
SLF60130	12 Nails	6.4	3 nails	2.4	2.8	3.9	4.5
	4 screws	6.1	7 nails	5.4	6.6	9.3	10.5
				4 screws	7.1	10.0	10.0
SLF65170	18 Nails	9.3	6 nails	4.7	5.7	7.9	9.0
	6 screws	9.1	11 nails	8.1	9.8	13.6	15.0*
				6 screws	10.6	15.0*	15.0*
SLF90200	26 Nails	12.9	3 nails	2.4	2.8	3.9	4.5
	10 Screws	14.2	13 nails	9.6	11.6	15.0*	15.0*
				8 screws	14.2	15.0*	15.0*
SPH180 (pair)	6 No 14 x 30 screws [‡]	119	6 No 14 x 30 screws [‡]	13.3	18.8	20.4	20.4
	12 No 14 x 30 screws [‡]	29.3	12 No 14 x 30 screws [‡]	24.5	34.6	37.8	37.8
SPH220 (pair)	10 No 14 x 30 screws [‡]	13.4	10 No 14 x 30 screws [‡]	15.7	22.1	25.5	25.5
	20 No 14 x 30 screws [‡]	25.6	20 No 14 x 30 screws [‡]	30.0	42.3	46.0	46.0
SPH300 (pair)	14 No 14 x 30 screws [‡]	18.5	14 No 14 x 30 screws [‡]	19.3	30.6	49.2	49.2
	28 No 14 x 30 screws [‡]	37.0	28 No 14 x 30 screws [‡]	38.7	61.2	65.0	65.0
SPH360 (pair)	16 No 14 x 30 screws [‡]	21.6	16 No 14 x 30 screws [‡]	22.6	35.8	57.5	57.5
	32 No 14 x 30 screws [‡]	43.3	32 No 14 x 30 screws [‡]	45.3	65.0	65.0	65.0

[‡] in each face of joist hanger

Notes:

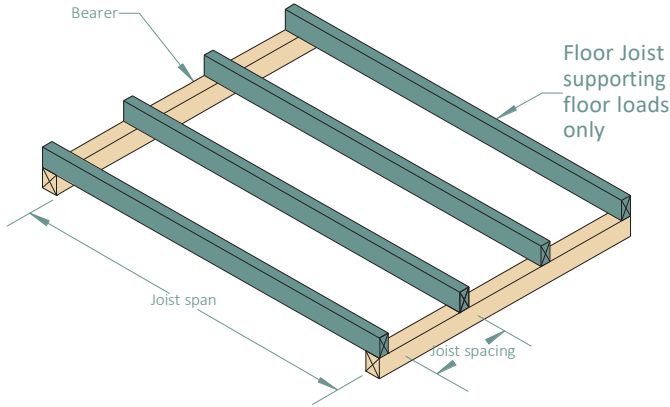
- For this table, SmartLVL has been given a uniform JD4 Joint Strength Group. For more detailed calculations of joint strength group in particular planes contact the Techsupport Helpline on 1300 668 690
- The above tabulated capacities are for a minimum beam thickness of 35 mm
- Wind uplift capacities apply to designs in accordance with AS/NZS 1170:2002
- SLF Framing Bracket capacity has been limited to 15.0 kN shown *
- These capacities apply directly for joints in houses and on secondary beams in other structures. For joints on primary beams in structures other than houses, reduce the capacity by 0.85/0.95 = 0.89
- Multiple laminated supporting beams - fasteners with longer lengths are required when Joist Hangers are fixed into a multiple laminated supporting beam. For double laminates, use 65 long nails or screws. Alternatively, for double or triple laminated supporting beams, additional fixings may be provided at hanger locations to laminate plies. Seek advice from the Engineer.

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Floor joists supporting floor loads only

Floor mass - 40 kg/m²



EXAMPLE:

domestic floor loads
single span
joist spacing = 450 mm
joist span = 3500 mm

Enter single span table at 450 mm in joist spacing column, read down to a span equal to or greater than 3500 mm

ADOPT:

SmartLVL 13 - 170x45

Loadings: permanent - self weight + 40 kg/m² + 0.5 kPa of the live load, live load - 1.5 kPa or floor point load of 1.8 kN

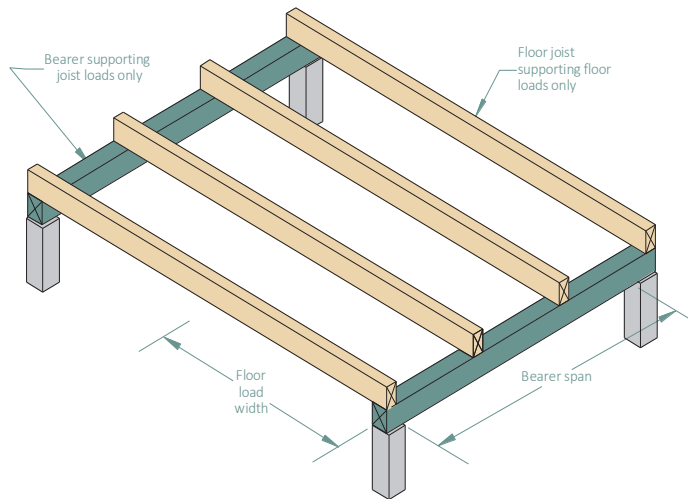
Joist spacing (mm)	300	450	600	300	450	600
Member size DxB (mm)	Maximum recommended span (mm)					
	Single span			Continuous span		
90x45	2000	1700	1600	2500	2000	1900
130x45	3500	2600	2400	4200	3200	2800
150x45	4000	3100	2800	4600	3800	3300
170x45	4400	3600	3300	5100	4400	3800
200x45	5000	4300	3900	5800	5200	4600
240x45	5700	5100	4700	6600	6000	5600
300x45	6700	6100	5700	7800	7100	6600
360x45	7600	7000	6500	9000	8100	7500
400x45	8200	7600	7000	10200	8700	8100
90x63	2400	2000	1800	3100	2300	2100
130x63	3900	3000	2700	4500	3600	3200
150x63	4300	3600	3200	5000	4300	3800
170x63	4800	4100	3700	5500	5000	4300
200x63	5400	4900	4400	6300	5700	5200
240x63	6200	5600	5200	7200	6500	6000
300x63	7200	6600	6100	8500	7700	7200
360x63	8100	7600	7100	9200	8800	8200
400x63	8700	8100	7600	11100	9500	8900
450x63	9400	8800	8300	12000	9900	9700
300x75	7400	6900	6400	8900	8000	7500
400x75	8900	8400	8000	11600	9900	9200

NOTES:

- Spans are suitable for solid timber, particle board and ply flooring. floor sheeting glued and nailed to joists will improve floor rigidity. Where heavy overlay material is to be applied, such as a mortar bed tiled or slate floor, the permanent load allowance should be increased to 1.2 kPa. A reduction of joist spacing may be used to accommodate this extra permanent load. A satisfactory result can be achieved by adopting the maximum spans for 600 mm and 450 mm spacing but installing the joists at 450 and 300 mm spacing respectively
- For beams which are continuous over two unequal spans, the design span and the 'resultant span description' depend upon the percentage span differences between the two spans as shown on page 2
- D = member depth, B = member breadth, NS = not suitable.
- End bearing lengths = 45 mm at end supports and 63 mm at internal supports for continuous members
- Not all sizes of SmartLVL in this table are stocked in each state. Please check with your supplier before ordering.

Single span floor bearers supporting floor loads only

Floor mass - 40 kg/m²



EXAMPLE:

single span bearer = 4000 mm
floor load width = 6000 mm

Enter single span table at 6000 mm in floor load width column, read down to a span equal to or greater than 4000 mm

ADOPT:

SmartLVL 13 - 2/360 x 45

Loadings: permanent - self weight + 40 kg/m² + 0.5 kPa of the live load, live load - 1.5 kPa or floor point load of 1.8 kN

Floor load width (mm)	1200	1800	2400	3000	3600	4200	4800	5400	6000	6600
Member size DxB (mm)	Maximum recommended bearer span (mm)									
	Single span									
2/90x45	2000	1700	1500	1400	1300	1300	1200	1100	1100	1100
2/130x45	2800	2500	2200	2100	1900	1800	1700	1700	1600	1500
2/150x45	3300	2900	2600	2400	2200	2100	2000	1900	1900	1800
2/170x45	3700	3200	2900	2700	2500	2400	2300	2200	2100	2000
2/200x45	4100	3700	3500	3200	3000	2800	2700	2600	2500	2400
2/240x45	4700	4300	4000	3800	3600	3400	3200	3100	3000	2900
2/300x45	5500	5000	4700	4400	4200	4100	3900	3800	3700	3600
2/360x45	6300	5800	5400	5100	4900	4700	4500	4400	4200	4100
2/400x45	6800	6200	5800	5500	5200	5000	4900	4700	4600	4500
90x63	1700	1500	1400	1300	1200	1100	1100	1000	1000	NS
130x63	2500	2200	2000	1800	1700	1600	1500	1500	1400	1400
150x63	2900	2500	2300	2100	2000	1900	1800	1700	1600	1600
170x63	3300	2900	2600	2400	2300	2100	2000	1900	1900	1800
200x63	3800	3400	3100	2800	2700	2500	2400	2300	2200	2100
240x63	4300	3900	3700	3400	3200	3000	2900	2800	2700	2600
300x63	5100	4600	4300	4100	3900	3700	3600	3500	3300	3200
360x63	5800	5300	4900	4700	4500	4300	4100	4000	3900	3800
400x63	6300	5700	5300	5100	4800	4600	4500	4300	4200	4100
450x63	6800	6200	5800	5500	5300	5100	4900	4700	4600 ₅	4500 ₁₀
300x75	5300	4800	4500	4300	4100	3900	3800	3600	3500	3400
400x75	6500	6000	5600	5300	5000	4800	4700	4500	4400	4300

Continuous span floor bearers supporting floor loads only

Floor mass - 40 kg/m²

Loadings: permanent - self weight + 40 kg/m² + 0.5 kPa of the live load, live load - 1.5 kPa or floor point load of 1.8 kN

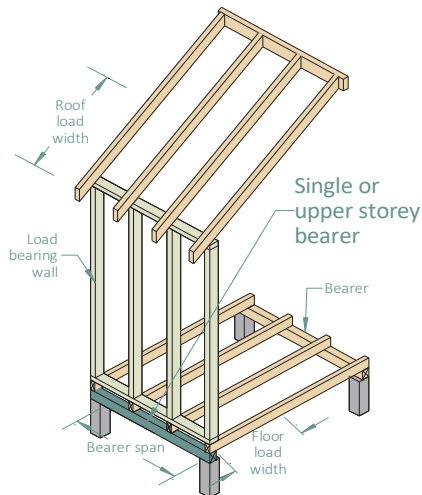
Floor load width (mm)	1200	1800	2400	3000	3600	4200	4800	5400	6000	6600
Member size DxB (mm)	Maximum recommended bearer span (mm)									
	Continuous span									
2/90x45	2500	2200	2000	1800	1700	1600	1500	1500	1400	1300
2/130x45	3600	3100	2800	2600	2500	2300	2200	2100	2000	2000
2/150x45	4000	3600	3300	3000	2800	2700	2600	2500	2400	2300
2/170x45	4400	3900	3700	3400	3200	3100	2900	2800	2700	2600
2/200x45	4900	4500	4100	3900	3700	3600	3400	3300	3200	3000
2/240x45	5600	5100	4800	4500	4300	4100	4000	3800	3700	3600 ₁₀
2/300x45	6600	6000	5600	5300	5100	4900	4700	4500 ₁₀	4400 ₂₀	4300 ₃₀
2/360x45	7500	6900	6400	6100	5800	5600 ₅	5400 ₁₅	5200 ₂₅	5100 ₄₀	4900 ₆₀
2/400x45	8100	7400	6900	6600	6300	6000 ₁₅	5800 ₂₅	5600 ₃₅	5500 ₆₀	5300 ₇₅
90x63	2200	1900	1700	1600	1500	1400	1300	1300	1200	1100
130x63	3200	2800	2500	2300	2200	2100	2000	1800	1700	1600
150x63	3600	3200	2900	2700	2500	2400	2300	2100	2000	1900
170x63	4000	3600	3300	3100	2900	2700	2600	2400	2300	2200
200x63	4500	4100	3800	3600	3400	3200	3000	2800	2700 ₅	2600 ₁₀
240x63	5200	4700	4400	4100	3900	3800	3600 ₁₀	3400 ₁₅	3200 ₂₅	3100 ₃₀
300x63	6100	5500	5100	4900	4600 ₅	4500 ₂₀	4300 ₃₀	4200 ₅₀	4000 ₆₅	3800 ₇₅
360x63	7000	6300	5900	5600 ₅	5300 ₂₀	5100 ₃₅	4900 ₆₅	4800 ₈₀	4600 ₉₀	4500 ₁₀₅
400x63	7500	6800	6400	6000 ₁₅	5800 ₃₀	5500 ₅₅	5300 ₇₅	5200 ₉₀	5000 ₁₀₅	4900 ₁₂₀
450x63	8200	7500	7000 ₅	6600 ₂₅	6300 ₅₀	6000 ₇₅	5800 ₉₀	5600 ₁₁₀	5500 ₁₂₅	5300 ₁₄₀
300x75	6300	5800	5400	5100	4800	4600 ₅	4500 ₁₅	4300 ₂₅	4200 ₃₅	4100 ₅₅
400x75	7800	7100	6600	6300	6000 ₁₅	5800 ₃₀	5600 ₅₀	5400 ₇₀	5200 ₈₅	5100 ₉₅

NOTES:

1. D = member depth, B = member breadth, NS = not suitable.
2. The above table was based on a maximum DL of 40 kg/m² + 0.5 kPa of LL, floor live load of 1.5 kPa, floor point load of 1.8 kN
3. End bearing lengths = 70 mm at end supports and 90 mm at internal supports for continuous members. Subscript values indicate the minimum additional bearing length where required to be greater than 70 mm at end supports and 90 mm at internal supports
4. Restraint value for slenderness calculations is 600 mm (floor joist centres at 600 mm max)
5. Not all sizes of SmartLVL in this table are stocked in each state. Please check with your supplier before ordering

Floor bearers supporting single storey load bearing wall - sheet and tiled roof

Floor mass - 40 kg/m²



EXAMPLE:

sheet roof - 40 kg/m²
 roof load width = 1950 mm
 bearer span = 3000 mm (single span)
 floor load width = 2200 mm

Enter single span table at 2400 mm in floor load width column, 4500 roof load width column, read down to a span equal to or greater than 3000 mm in the 40 kg/m² row.

ADOPT:

SmartLVL 13—2/240x45

Single span

Floor load width (mm)		1200			2400			4800		
Roof load width (mm)		1500	4500	7500	1500	4500	7500	1500	4500	7500
Member size DxB (mm)	Roof mass (kg/m ²)	Maximum recommended single span floor bearer supporting single storey load bearing wall span (mm)								
2/90x45	40	1500	1300	1200	1300	1200	1100	1100	1000	1000
	90	1300	1100	1000	1200	1000	NS	1000	NS	NS
2/130x45	40	2100	1900	1700	1900	1700	1600	1600	1500	1400
	90	2000	1600	1400	1800	1500	1400	1500	1400	1300
2/150x45	40	2500	2200	2000	2200	2000	1900	1800	1700	1600
	90	2300	1900	1700	2100	1800	1600	1800	1600	1500
2/170x45	40	2800	2500	2300	2500	2300	2100	2100	2000	1900
	90	2600	2100	1900	2300	2000	1800	2000	1800	1700
2/200x45	40	3300	2900	2700	2900	2700	2500	2500	2300	2200
	90	3000	2500	2200	2700	2400	2100	2400	2100	2000
2/240x45	40	3800	3500	3200	3500	3200	3000	3000	2800	2700
	90	3600	3000	2700	3300	2800	2600	2800	2600	2400
2/300x45	40	4500	4100	3900	4100	3900	3700	3700	3500	3300
	90	4300	3700	3300	4000	3600	3200	3600	3200	3000
2/360x45	40	5200	4700	4400	4700	4500	4200	4200	4000	3900
	90	4900	4300	3900	4600	4100	3800	4100	3800	3600
2/400x45	40	5600	5100	4800	5100	4800	4600	4500	4400	4200
	90	5300	4600	4200	4900	4400	4100	4400	4100	3900
90x63	40	1300	1100	1000	1100	1000	1000	NS	NS	NS
	90	1200	1000	NS	1100	NS	NS	NS	NS	NS
130x63	40	1900	1700	1500	1700	1500	1400	1400	1300	1300
	90	1700	1400	1300	1600	1300	1200	1400	1200	1100
150x63	40	2200	1900	1800	1900	1800	1600	1600	1500	1500
	90	2000	1700	1500	1800	1600	1400	1600	1400	1300
170x63	40	2500	2200	2000	2200	2000	1900	1800	1700	1700
	90	2300	1900	1700	2100	1800	1600	1800	1600	1500
200x63	40	2900	2600	2400	2600	2400	2200	2200	2100	2000
	90	2700	2200	2000	2400	2100	1900	2100	1900	1700
240x63	40	3500	3100	2800	3100	2800	2700	2600	2500	2400
	90	3200	2700	2400	2900	2500	2300	2500	2300	2100
300x63	40	4200	3800	3600	3800	3600	3300	3300	3100	3000
	90	3900	3300	3000	3600	3200	2800	3200	2900	2600
360x63	40	4800	4400	4100	4400	4100	3900	3800	3700	3600
	90	4500	3900	3600	4200	3700	3400	3700	3400	3200
400x63	40	5100	4700	4400	4700	4400	4200	4200	4000	3900
	90	4900	4200	3900	4500	4000	3700	4100	3700	3500 ₅
450x63	40	5600	5100	4800	5100	4800	4600	4500	4400	4200
	90	5300	4600	4200	4900	4400	4100	4400	4100 ₅	3900 ₁₀
300x75	40	4300	4000	3700	4000	3700	3500	3500	3300	3100
	90	4100	3500	3100	3800	3300	3000	3400	3000	2800
400x75	40	5400	4900	4600	4900	4600	4400	4300	4200	4000
	90	5100	4400	4000	4700	4200	3900	4200	3900	3700

Floor bearers supporting single storey load bearing wall - sheet and tiled roof

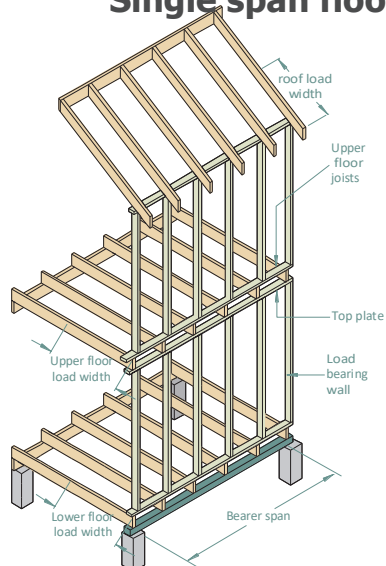
Continuous span

Floor load width (mm)		1200			2400			4800		
Roof load width (mm)		1500	4500	7500	1500	4500	7500	1500	4500	7500
Member size DxB (mm)	Roof mass (kg/m ²)	Maximum recommended Continuous span floor bearer supporting single storey load bearing wall span (mm)								
2/90x45	40	1900	1700	1600	1700	1600	1500	1400	1300	1300
	90	1800	1500	1300	1600	1400	1300	1400	1200	1100
2/130x45	40	2800	2500	2300	2500	2300	2100	2000	1900	1900
	90	2600	2200	1900	2300	2000	1800	2000	1800	1700
2/150x45	40	3200	2900	2700	2800	2600	2500	2400	2300	2200
	90	3000	2500	2200	2700	2300	2100	2300	2100	1900
2/170x45	40	3600	3300	3000	3200	3000	2800	2700	2600	2500
	90	3400	2800	2500	3100	2700	2400	2600	2400	2200
2/200x45	40	4100	3800	3600	3700	3500	3300	3200	3000	2900
	90	3900	3400	3000	3600	3100	2800	3100	2800	2600
2/240x45	40	4700	4300	4100	4300	4000	3800	3700	3600	3500
	90	4500	3900	3600	4100	3700	3400 ₅	3700	3400 ₅	3100 ₂₀
2/300x45	40	5600	5100	4800	5000	4800	4500	4400 ₁₀	4300 ₁₅	4100 ₂₀
	90	5300	4600	4200 ₁₅	4900	4400	4100 ₂₅	4300 ₁₅	4000 ₂₅	3800 ₆₀
2/360x45	40	6400	5900	5500	5800	5500	5200 ₅	5100 ₂₅	4900 ₃₀	4700 ₄₀
	90	6000	5300	4900 ₃₀	5600	5000 ₁₅	4700 ₄₅	5000 ₃₀	4600 ₅₀	4400 ₈₅
2/400x45	40	6900	6400	6000	6300	5900	5600 ₁₀	5500 ₃₅	5300 ₄₅	5100 ₆₀
	90	6500	5700 ₁₀	5300 ₄₅	6000	5500 ₂₅	5100 ₇₀	5400 ₄₀	5000 ₇₀	4800 ₁₀₀
90x63	40	1700	1500	1400	1500	1400	1300	1200	1200	1100
	90	1600	1300	1200	1400	1200	1100	1200	1100	1000
130x63	40	2500	2200	2000	2200	2000	1900	1800	1700	1700
	90	2300	1900	1700	2100	1800	1600	1800	1600	1400
150x63	40	2900	2600	2400	2500	2300	2200	2100	2000	1900
	90	2700	2200	2000	2400	2100	1900	2000	1900	1700
170x63	40	3300	2900	2700	2900	2600	2500	2400	2300	2200
	90	3000	2500	2200	2700	2400	2100	2300	2100	1900 ₅
200x63	40	3800	3400	3200	3400	3100	2900	2800	2700	2600 ₅
	90	3600	3000	2700	3200	2800	2500 ₁₀	2700	2500 ₁₀	2200 ₂₅
240x63	40	4300	4000	3700	3900	3700	3500	3400 ₁₅	3200 ₂₀	3100 ₂₅
	90	4100	3600	3200 ₂₀	3800	3300 ₁₀	3000 ₃₅	3300 ₂₀	3000 ₃₀	2700 ₅₅
300x63	40	5100	4700	4400	4600	4400	4200 ₁₅	4100 ₄₅	3900 ₆₀	3800 ₆₅
	90	4800	4200 ₁₅	3900 ₅₅	4500	4000 ₃₀	3700 ₇₅	4000 ₅₅	3700 ₇₅	3400 ₁₀₀
360x63	40	5800	5400	5100 ₁₅	5300	5000 ₁₅	4800 ₃₅	4700 ₇₅	4500 ₈₀	4300 ₉₀
	90	5500	4900 ₃₀	4500 ₈₀	5100 ₁₀	4600 ₅₅	4300 ₁₀₀	4500 ₈₀	4200 ₁₀₀	4000 ₁₃₅
400x63	40	6300	5800	5500 ₂₅	5700 ₁₀	5400 ₂₅	5200 ₅₀	5000 ₉₀	4900 ₁₀₀	4700 ₁₀₅
	90	6000	5300 ₄₅	4800 ₉₅	5500 ₂₀	5000 ₇₀	4600 ₁₁₅	4900 ₉₀	4600 ₁₁₅	4400 ₁₅₅
450x63	40	6900	6400 ₁₀	6000 ₃₅	6300 ₂₀	5900 ₃₅	5600 ₇₀	5500 ₁₀₅	5300 ₁₁₅	5100 ₁₂₅
	90	6500 ₅	5700 ₇₀	5300 ₁₁₅	6000 ₃₀	5500 ₉₀	5100 ₁₃₅	5400 ₁₁₀	5000 ₁₃₅	4800 ₁₇₅
300x75	40	5300	4900	4600	4800	4600	4300	4200 ₂₅	4100 ₃₀	4000 ₃₅
	90	5000	4400	4100 ₃₀	4700	4200 ₁₅	3900 ₄₅	4100 ₃₀	3900 ₄₅	3700 ₈₅
400x75	40	6600	6100	5700 ₁₀	6000	5700 ₁₀	5400 ₂₅	5300 ₆₅	5100 ₇₅	4900 ₈₅
	90	6200	5500 ₂₅	5000 ₇₅	5800 ₅	5200 ₄₅	4900 ₉₀	5100 ₇₅	4800 ₉₀	4500 ₁₂₅

NOTES:

- D = member depth, B = member breadth, NS = not suitable.
- The above table was based on total ground floor mass of 40 kg/m² + 0.5 kPa of LL, wall mass of 37 kg/m², floor live load of 1.5 kPa, floor point load of 1.8 kN
- The above table was based on a wall height of 2700 mm
- End bearing lengths = 70 mm at end supports and 90 mm at internal supports for continuous members. Subscript values indicate the minimum additional bearing length where required to be greater than 70 mm at end supports and 90 mm at internal supports.
- Restraint value for slenderness calculations is 600 mm
- Not all sizes of SmartLVL in this table are stocked in each state. Please check with your supplier before ordering

Single span floor bearer supporting double storey load bearing wall - sheet and tile roof



EXAMPLE:

sheet roof - 40 kg/m²
 roof load width = 1950 mm
 bearer span = 3100 mm (single span)
 lower floor load width = 3500 mm
 upper floor load width = 1500 mm

Enter single span table at 3600 mm in lower floor load width column, 1800 mm in upper floor width column, 4500 mm roof load width column, read down to a span equal to or greater than 3100 mm in the 40 kg/m² row.

ADOPT:

SmartLVL 13 - 2/300x45

Lower floor load width (mm)		1800						3600					
Upper floor load width (mm)		1800			3600			1800			3600		
Roof load width (mm)		1500	4500	7500	1500	4500	7500	1500	4500	7500	1500	4500	7500
Member size DxB (mm)	Roof mass (kg/m ²)	Maximum recommended floor bearer supporting double loadbearing wall span (mm)											
		Single span											
2/90x45	40	1100	1100	1000	1000	1000	NS	1000	1000	NS	NS	NS	NS
	90	1100	1000	NS	1000	NS	NS	1000	NS	NS	NS	NS	NS
2/130x45	40	1600	1500	1500	1500	1400	1400	1500	1400	1400	1400	1300	1300
	90	1600	1400	1300	1400	1300	1200	1500	1300	1200	1400	1300	1200
2/150x45	40	1900	1800	1700	1700	1600	1600	1700	1700	1600	1600	1600	1500
	90	1800	1600	1500	1700	1500	1400	1700	1500	1400	1600	1500	1400
2/170x45	40	2200	2000	1900	2000	1900	1800	2000	1900	1800	1800	1800	1700
	90	2100	1800	1700	1900	1700	1600	1900	1700	1600	1800	1700	1600
2/200x45	40	2500	2400	2300	2300	2200	2100	2300	2200	2100	2200	2100	2000
	90	2400	2200	2000	2300	2100	1900	2300	2100	1900	2100	2000	1800
2/240x45	40	3100	2900	2700	2800	2700	2600	2800	2700	2600	2600	2500	2400
	90	2900	2600	2400	2700	2500	2300	2700	2500	2300	2500	2400	2200
2/300x45	40	3800	3600	3400	3500	3300	3200	3500	3400	3200	3300	3100	3000
	90	3700	3300	3000	3400	3100	2900	3400	3100	2900	3200	3000	2800
2/360x45	40	4300	4100	4000	4000	3900	3800	4100	3900	3800	3800	3700	3600
	90	4200	3800	3600	3900	3700	3500	4000	3700	3500	3800	3600	3300
2/400x45	40	4700	4500	4300	4400	4200	4100	4400	4200	4100	4200	4000	3900
	90	4500	4200	3900	4300	4000	3800	4300	4000	3800	4100	3800	3700
90x63	40	1000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	90	1000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
130x63	40	1500	1400	1300	1300	1300	1200	1300	1300	1200	1200	1200	1100
	90	1400	1200	1100	1300	1200	1100	1300	1200	1100	1200	1100	1000
150x63	40	1700	1600	1500	1500	1500	1400	1500	1500	1400	1400	1400	1300
	90	1600	1400	1300	1500	1400	1300	1500	1400	1300	1400	1300	1200
170x63	40	1900	1800	1700	1700	1700	1600	1800	1700	1600	1600	1600	1500
	90	1800	1600	1500	1700	1500	1400	1700	1500	1400	1600	1500	1400
200x63	40	2300	2100	2000	2100	2000	1900	2100	2000	1900	1900	1900	1800
	90	2200	1900	1800	2000	1800	1700	2000	1800	1700	1900	1700	1600
240x63	40	2700	2600	2400	2500	2400	2300	2500	2400	2300	2300	2200	2100
	90	2600	2300	2100	2400	2200	2000	2400	2200	2000	2300	2100	2000
300x63	40	3400	3200	3000	3100	3000	2800	3100	3000	2900	2900	2800	2700
	90	3300	2900	2700	3000	2700	2600	3000	2800	2600	2800	2600	2500
360x63	40	4000	3800	3600	3700	3600	3400	3700	3600	3400	3500	3400	3200
	90	3800	3500	3200	3600	3300	3100	3600	3300	3100	3400	3200	3000 ₅
400x63	40	4300	4100	3900	4000	3900	3700	4000	3900	3800	3800	3700	3600
	90	4200	3800	3600	3900	3600	3400 ₅	3900	3700	3400 ₅	3700	3500 ₅	3300 ₁₅
450x63	40	4700	4500	4300	4400	4200	4100	4400	4200	4100	4200 ₅	4000 ₅	3900 ₁₀
	90	4500	4200	3900 ₅	4300	4000 ₅	3800 ₁₅	4300	4000 ₅	3800 ₁₅	4100 ₅	3800 ₁₀	3700 ₂₅
300x75	40	3600	3400	3200	3300	3100	3000	3300	3200	3000	3100	3000	2900
	90	3500	3100	2800	3200	2900	2700	3200	2900	2700	3000	2800	2600
400x75	40	4500	4300	4100	4200	4000	3900	4200	4000	3900	4000	3900	3800
	90	4300	4000	3700	4100	3800	3600	4100	3800	3600	3900	3700	3500 ₅

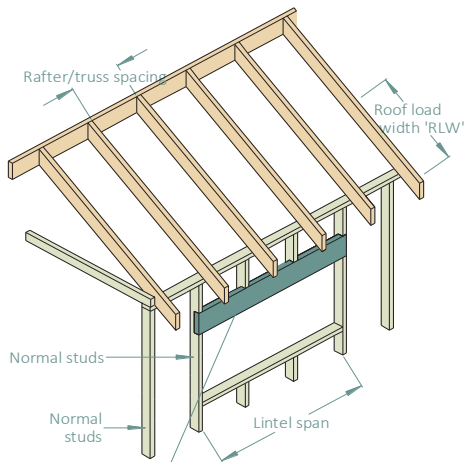
Continuous span floor bearer supporting double storey load bearing wall - sheet & tile roof

Lower floor load width (mm)		1800						3600					
Upper floor load width (mm)		1800			3600			1800			3600		
Roof load width (mm)		1500	4500	7500	1500	4500	7500	1500	4500	7500	1500	4500	7500
Member size DxB (mm)	Roof mass (kg/m ²)	Maximum recommended floor bearer supporting double loadbearing wall span (mm)											
		Continuous span											
2/90x45	40	1500	1400	1400	1400	1300	1300	1400	1300	1300	1300	1200	1200
	90	1500	1300	1200	1400	1200	1100	1300	1200	1100	1300	1200	1100
2/130x45	40	2200	2100	2000	2000	1900	1900	2000	1900	1800	1900	1800	1700
	90	2100	1900	1800	2000	1800	1700	1900	1800	1700	1800	1700	1600
2/150x45	40	2600	2400	2300	2400	2300	2200	2300	2200	2100	2200	2100	2000
	90	2500	2200	2000	2300	2100	1900	2300	2100	1900	2100	2000	1800
2/170x45	40	2900	2700	2600	2700	2600	2500	2600	2500	2400	2500	2400	2300
	90	2800	2500	2300	2600	2400	2200	2600	2300	2200	2400	2200	2100
2/200x45	40	3400	3200	3100	3200	3000	2900	3100	3000	2800	2900	2800	2700
	90	3300	3000	2700	3100	2800	2600	3000	2800	2600	2900	2600	2500 ₅
2/240x45	40	4000	3800	3700	3700	3600	3500	3700	3600	3400	3500 ₅	3400 ₅	3300 ₁₀
	90	3900	3600	3300 ₅	3700	3400 ₅	3100 ₂₀	3600	3300 ₅	3100 ₁₅	3400 ₅	3200 ₁₅	3000 ₃₀
2/300x45	40	4700	4500	4300	4400	4300 ₁₀	4100 ₂₀	4400 ₁₀	4200 ₁₅	4100 ₂₀	4200 ₂₅	4100 ₃₀	3900 ₃₅
	90	4600	4200 ₅	4000 ₃₀	4300 ₅	4000 ₂₅	3800 ₅₅	4300 ₁₀	4000 ₂₅	3800 ₄₅	4100 ₂₅	3900 ₄₀	3700 ₇₀
2/360x45	40	5400	5200 ₅	5000 ₁₅	5100 ₁₀	4900 ₂₅	4800 ₃₅	5000 ₂₅	4800 ₃₀	4700 ₃₅	4800 ₄₅	4600 ₆₀	4500 ₇₀
	90	5200	4800 ₂₅	4500 ₆₀	5000 ₂₀	4600 ₅₀	4400 ₈₀	4900 ₃₀	4600 ₄₅	4400 ₇₅	4700 ₅₀	4400 ₇₅	4200 ₉₅
2/400x45	40	5800	5600 ₁₀	5400 ₂₅	5500 ₂₀	5300 ₃₅	5100 ₅₅	5400 ₃₅	5200 ₄₅	5100 ₅₅	5200 ₆₅	5000 ₇₅	4900 ₈₀
	90	5700 ₅	5200 ₃₅	4900 ₇₅	5400 ₃₀	5000 ₇₀	4800 ₉₅	5300 ₄₀	5000 ₆₅	4700 ₉₀	5100 ₇₀	4800 ₈₅	4600 ₁₁₀
90x63	40	1300	1300	1200	1200	1200	1100	1200	1200	1100	1100	1100	1100
	90	1300	1200	1100	1200	1100	1000	1200	1100	1000	1100	1000	NS
130x63	40	2000	1900	1800	1800	1700	1700	1800	1700	1600	1700	1600	1500
	90	1900	1700	1500	1800	1600	1500	1700	1600	1500	1600	1500	1400
150x63	40	2300	2100	2000	2100	2000	1900	2100	2000	1900	1900	1800	1800
	90	2200	2000	1800	2000	1900	1700	2000	1800	1700	1900	1700	1600
170x63	40	2600	2400	2300	2400	2300	2200	2300	2200	2100	2200	2100	2000
	90	2500	2200	2000	2300	2100	1900 ₅	2300	2100	1900 ₅	2100	2000	1800 ₁₀
200x63	40	3000	2900	2700	2800	2700	2600 ₅	2800	2600 ₅	2500 ₅	2600 ₁₀	2500 ₁₀	2400 ₁₅
	90	2900	2600	2400 ₁₀	2700	2500 ₁₀	2300 ₂₅	2700	2400 ₁₀	2300 ₂₀	2500 ₁₀	2300 ₂₀	2100 ₃₀
240x63	40	3600	3500	3300 ₅	3400 ₅	3200 ₁₅	3100 ₂₅	3300 ₁₅	3200 ₂₀	3000 ₂₅	3100 ₃₀	3000 ₃₅	2900 ₄₀
	90	3500	3200 ₁₅	2900 ₃₅	3300 ₁₀	3000 ₃₀	2700 ₅₅	3200 ₂₀	2900 ₃₀	2700 ₆₀	3000 ₃₀	2800 ₄₅	2600 ₇₀
300x63	40	4300 ₅	4100 ₁₅	4000 ₃₀	4100 ₂₅	3900 ₄₀	3800 ₆₅	4000 ₄₀	3900 ₆₀	3700 ₇₀	3800 ₇₅	3700 ₈₀	3600 ₈₅
	90	4200 ₁₀	3800 ₄₅	3600 ₈₀	4000 ₃₅	3700 ₇₅	3400 ₉₅	3900 ₅₀	3700 ₇₅	3400 ₉₅	3700 ₈₀	3500 ₉₀	3200 ₁₀₅
360x63	40	4900 ₂₀	4700 ₃₅	4500 ₆₀	4700 ₅₅	4500 ₇₅	4300 ₉₀	4600 ₇₀	4400 ₈₅	4300 ₉₀	4400 ₉₅	4300 ₁₀₅	4100 ₁₁₅
	90	4800 ₂₅	4400 ₇₅	4100 ₁₀₅	4500 ₇₀	4200 ₁₀₀	4000 ₁₃₀	4500 ₈₀	4200 ₁₀₀	4000 ₁₂₅	4300 ₁₀₀	4100 ₁₂₀	3800 ₁₄₅
400x63	40	5300 ₃₀	5100 ₅₀	4900 ₇₅	5000 ₇₀	4900 ₈₅	4700 ₁₀₅	5000 ₉₀	4800 ₉₅	4700 ₁₀₅	4700 ₁₁₅	4600 ₁₂₀	4500 ₁₃₀
	90	5200 ₃₅	4800 ₈₅	4500 ₁₂₀	4900 ₈₀	4600 ₁₁₅	4400 ₁₅₀	4900 ₉₅	4500 ₁₁₅	4300 ₁₄₅	4700 ₁₂₀	4400 ₁₄₀	4200 ₁₇₀
450x63	40	5800 ₄₅	5600 ₇₀	5400 ₉₀	5500 ₈₅	5300 ₁₀₅	5100 ₁₂₀	5400 ₁₀₀	5200 ₁₁₅	5100 ₁₂₀	5200 ₁₃₀	5000 ₁₄₀	4900 ₁₅₀
	90	5700 ₆₅	5200 ₁₀₀	4900 ₁₄₀	5400 ₉₅	5000 ₁₃₅	4800 ₁₇₀	5300 ₁₁₀	5000 ₁₃₅	4700 ₁₆₅	5100 ₁₃₅	4800 ₁₆₀	4600 ₁₉₅
300x75	40	4500	4300	4100 ₁₅	4200 ₁₅	4100 ₂₀	4000 ₃₅	4200 ₂₅	4000 ₃₀	3900 ₃₅	4000 ₄₅	3900 ₅₅	3800 ₆₅
	90	4400	4000 ₂₀	3800 ₅₅	4100 ₂₀	3900 ₅₀	3700 ₈₀	4100 ₂₅	3800 ₄₅	3600 ₇₅	3900 ₅₀	3700 ₇₀	3500 ₉₀
400x75	40	5600 ₁₅	5300 ₂₅	5100 ₄₅	5300 ₄₀	5100 ₆₅	4900 ₈₀	5200 ₆₅	5000 ₇₅	4900 ₈₅	4900 ₉₀	4800 ₉₅	4700 ₁₀₀
	90	5400 ₂₀	5000 ₆₅	4700 ₉₅	5100 ₆₀	4800 ₉₀	4500 ₁₂₀	5100 ₇₀	4700 ₉₀	4500 ₁₁₅	4900 ₉₅	4600 ₁₁₀	4400 ₁₄₀

NOTES:

- D = member depth, B = member breadth, NS = not suitable.
- The above table was based on total upper floor mass of 40 kg/m², total ground floor mass of 30 kg/m², floor live load of 1.5 kPa, floor point load of 1.8 kN, wall mass of 37 kg/m², and permanent floor live load of 0.5 kPa.
- The above table was based on a wall height of 5400 mm
- End bearing lengths = 70 mm at end supports and 90 mm at internal supports for continuous members. Subscript values indicate the minimum additional bearing length where required to be greater than 70 mm at end supports and 90 mm at internal supports.
- Not all sizes of SmartLVL in this table are stocked in each state. Please check with your supplier before ordering

Single span lintels in single/upper storey walls AS 4055 classification N1 - N4



Single/Upper storey lintel

EXAMPLE:

wind speed = N4
 sheet roof - 40 kg/m²
 rafter/truss spacing = 600 mm
 lintel span = 3500 mm
 roof load width = 3900 mm
 Enter span table at 4500 roof load width column, rafter/truss spacing 600 mm, and read down to a span equal to or greater than 3500 mm in the 40 kg/m² row

ADOPT:

SmartLVL 13 - 300x45
 (requires an additional 5 mm of bearing)

Roof load width (mm)		1500		3000		4500		6000		7500	
Rafter/Truss spacing (mm)		600	1200	600	1200	600	1200	600	1200	600	1200
Member size DxB (mm)	Roof mass (kg/m ²)	Maximum recommended Lintel span (mm)									
		Single span									
90x45	40	2000	1800	1500	1400	1300	1100	1100	NS	1000	NS
	90	1400	1300	1100	NS	NS	NS	NS	NS	NS	NS
130x45	40	2700	2800	2200	2200	2000	1900	1800	1700	1600	1500
	90	2100	2100	1700	1600	1400	1300	1300	1100	1200	1000
150x45	40	3100	3100	2500	2600	2200	2200	2000	2000	1900	1900
	90	2400	2500	2000	1900	1700	1600	1500	1400	1400	1300
170x45	40	3400	3400	2900	2900	2500	2600	2300	2300	2100	2100
	90	2700	2800	2200	2200	2000	1900	1700	1700	1600	1500 ₁₀
200x45	40	3900	3800	3300	3300	3000	3000	2700	2700 ₅	2500	2600 ₁₀
	90	3200	3200	2600	2700	2300	2200	2100	2000	1900 ₁₀	1900 ₁₀
240x45	40	4400	4400	3800	3700	3400	3400	3200 ₅	3200 ₅	3000 ₅	3000 ₁₀
	90	3600	3600	3100	3100	2700	2800 ₅	2500	2500 ₁₅	2300 ₁₅	2300 ₁₀
300x45	40	5200	5200	4400	4400	4000 ₅	4000	3800 ₁₀	3700 ₅	3500 ₂₀	3500 ₁₅
	90	4300	4300	3600	3600	3300 ₅	3300	3100 ₅	3100 ₁₅	2900 ₁₅	2900 ₃₅
360x45	40	5900	5900	5100	5100	4600	4600 ₅	4300 ₁₅	4300 ₂₀	4100 ₂₀	4100 ₂₀
	90	4900	4900	4200	4200	3800 ₁₀	3800 ₅	3500 ₁₅	3500 ₁₅	3300 ₃₀	3300 ₂₅
400x45	40	6400	6400	5500	5500	5000	5000 ₁₀	4700 ₁₀	4600 ₁₅	4400 ₂₅	4400 ₃₀
	90	5300	5300	4500	4500	4100 ₁₀	4100 ₅	3800 ₂₅	3800 ₁₅	3600 ₄₀	3600 ₂₅
2/90x45	40	2400	2500	2000	1900	1700	1600	1500	1400	1400	1200
	90	1900	1800	1400	1300	1200	1100	1100	NS	NS	NS
2/130x45	40	3300	3300	2700	2800	2400	2500	2200	2200	2100	2000
	90	2600	2700	2100	2100	1900	1800	1700	1600	1500	1400
2/150x45	40	3700	3600	3100	3100	2800	2800	2500	2600	2300	2400
	90	3000	3000	2400	2500	2100	2100	2000	1900	1800	1800
2/170x45	40	4000	4000	3400	3400	3100	3100	2900	2900	2700	2700
	90	3300	3300	2700	2800	2400	2500	2200	2200	2100	2000
2/200x45	40	4500	4500	3900	3800	3500	3500	3300	3300	3100	3100
	90	3800	3700	3200	3200	2800	2900	2600	2700	2400	2400
2/240x45	40	5100	5100	4400	4400	4000	4000	3800	3700	3600	3500
	90	4300	4300	3600	3600	3300	3300	3100	3100	2900	2900
2/300x45	40	6000	6000	5200	5200	4700	4700	4400	4400	4200	4200
	90	5100	5100	4300	4300	3900	3900	3600	3600	3400	3400
2/360x45	40	6800	6800	5900	5900	5400	5400	5100	5100	4800	4800 ₅
	90	5800	5800	4900	4900	4500	4500	4200	4200	4000 ₅	3900
2/400x45	40	7300	7300	6400	6400	5900	5800	5500	5500	5200 ₅	5200 ₅
	90	6200	6200	5300	5300	4900	4800	4500	4500	4300 ₁₀	4300 ₁₀

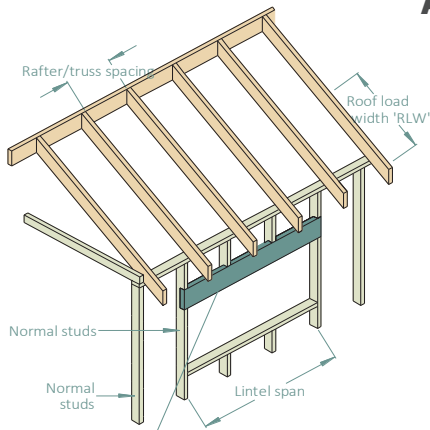
Single span lintels in single/upper storey walls AS 4055 classification N1 - N4 (Cont'd)

Roof load width (mm)		1500		3000		4500		6000		7500	
Rafter/Truss spacing (mm)		600	1200	600	1200	600	1200	600	1200	600	1200
Member size DxB (mm)	Roof mass (kg/m ²)	Maximum recommended Lintel span (mm)									
		Single span									
90x63	40	2100	2100	1700	1600	1500	1300	1300	1100	1200	1000
	90	1600	1500	1300	1100	1000	NS	NS	NS	NS	NS
130x63	40	3000	3000	2400	2500	2200	2100	2000	1900	1800	1800
	90	2300	2400	1900	1900	1600	1500	1500	1300	1400	1200
150x63	40	3400	3300	2800	2800	2500	2600	2200	2300	2100	2100
	90	2700	2800	2200	2200	1900	1900	1700	1700	1600	1500
170x63	40	3700	3700	3100	3100	2800	2800	2500	2600	2400	2400
	90	3100	3000	2400	2500	2200	2100	2000	1900	1800	1800
200x63	40	4200	4200	3500	3500	3200	3200	3000	3000	2800	2800
	90	3400	3400	2900	2900	2500	2600	2300	2300	2100	2100
240x63	40	4800	4700	4100	4100	3700	3700	3400	3400	3300	3200
	90	4000	3900	3300	3300	3000	3000	2800	2800 ₅	2500	2600 ₁₀
300x63	40	5600	5600	4800	4800	4400	4400	4100	4100 ₅	3900 ₅	3800 ₅
	90	4700	4700	4000	3900	3600	3600	3300	3300	3200 ₁₅	3100 ₁₀
360x63	40	6300	6300	5500	5500	5000	5000	4700	4600	4400 ₁₀	4400 ₁₀
	90	5300	5300	4500	4500	4100	4100	3800 ₁₀	3800 ₅	3600 ₂₀	3600 ₁₀
400x63	40	6800	6800	5900	5900	5400	5400	5100	5000 ₁₀	4800 ₅	4800 ₂₀
	90	5800	5700	4900	4900	4400	4400 ₅	4100 ₁₀	4200 ₅	3900 ₂₀	3900 ₁₀
450x63	40	7400	7400	6400	6400	5900	5900	5500 ₁₀	5500 ₁₅	5200 ₂₀	5200 ₂₀
	90	6300	6300	5400	5400	4900	4800 ₁₀	4500 ₁₀	4500 ₁₅	4300 ₂₅	4300 ₃₀
300x75	40	5800	5800	5000	5000	4500	4500	4200	4200	4000 ₅	4000
	90	4900	4800	4100	4100	3700	3700	3500	3500	3300 ₅	3300
400x75	40	7100	7000	6100	6100	5600	5600	5300	5300 ₅	5000	5000 ₁₀
	90	6000	6000	5100	5100	4600	4600	4300 ₅	4300 ₁₀	4100 ₁₀	4100 ₅

NOTES:

1. D = member depth, B = member breadth, NS = not suitable.
2. Minimum bearing length = 35 mm at end supports. Subscript values indicate the minimum additional bearing length where required to be greater than 35 mm.
3. Restraint value for slenderness calculations is 600 mm.
4. Not all sizes of SmartLVL in this table are stocked in each state. Please check with your supplier before ordering

Single span lintels in single/upper storey walls AS 4055 classification C1 - C3



Single/Upper storey lintel

EXAMPLE:

wind speed = C3
sheet roof - 40 kg/m²
rafter/truss spacing = 600 mm
lintel span = 3400 mm
roof load width = 3900 mm
Enter span table at 4500 roof load width column, rafter/truss spacing 600 mm, and read down to a span equal to or greater than 3400 mm in the 40 kg/m² row

ADOPT:

SmartLVL 13 - 300x45
(additional 30 mm bearing required)

Roof load width (mm)		1500		3000		4500		6000		7500	
Rafter/Truss spacing (mm)		600	1200	600	1200	600	1200	600	1200	600	1200
Member size DxB (mm)	Roof mass (kg/m ²)	Maximum recommended Lintel span (mm)									
		Single span									
90x45	40	1600	1500	1100	NS	NS	NS	NS	NS	NS	NS
	90	1400	1300	1100	NS	NS	NS	NS	NS	NS	NS
130x45	40	2300	2400	1900	1800	1500	1200	1100 ₅	NS	NS	NS
	90	2100	2100	1700	1600	1400	1200	1200 ₁₀	NS	NS	NS
150x45	40	2700	2800	2200	2200	1800 ₅	1600	1600 ₅	1000	1100 ₁₅	NS
	90	2400	2500	2000	1900	1700	1600 ₅	1500 ₁₀	1200 ₁₀	1200 ₂₀	NS
170x45	40	3100	3100	2400	2500	2100 ₁₀	2000 ₅	1800 ₁₅	1500 ₁₅	1300 ₁₀	NS
	90	2700	2800	2200	2200	2000 ₁₀	1900 ₁₀	1700 ₁₅	1500 ₂₅	1400 ₁₅	NS
200x45	40	3700	3600	2900	2900	2400 ₅	2400 ₁₅	2100 ₂₅	2100 ₂₀	1900 ₃₀	1500 ₃₀
	90	3200	3200	2600	2700 ₅	2300 ₁₅	2200 ₁₅	2100 ₂₅	2000 ₂₅	1900 ₄₀	1600 ₄₀
240x45	40	4300	4300	3500	3500 ₅	3000 ₁₀	2900 ₂₀	2500 ₁₅	2600 ₃₅	2300 ₃₅	2300 ₃₀
	90	3600	3600	3100 ₁₀	3100 ₅	2700 ₁₅	2800 ₃₀	2500 ₂₅	2500 ₄₅	2300 ₄₅	2300 ₄₀
300x45	40	5100	5100	4300 ₁₀	4300 ₁₅	3800 ₃₀	3700 ₂₅	3300 ₄₀	3200 ₃₅	2900 ₃₅	2800 ₆₀
	90	4300	4300	3600 ₁₅	3600 ₁₀	3300 ₃₀	3300 ₂₅	3100 ₃₅	3100 ₅₀	2900 ₄₅	2900 ₇₅
360x45	40	5900	5800	4900 ₁₀	4900 ₂₅	4400 ₃₅	4400 ₃₅	4000 ₅₀	3900 ₄₀	3600 ₇₀	3400 ₅₀
	90	4900	4900	4200 ₂₀	4200 ₂₅	3800 ₄₀	3800 ₃₀	3500 ₅₀	3500 ₄₅	3300 ₇₅	3300 ₇₀
400x45	40	6300	6300	5300 ₂₀	5300 ₂₅	4800 ₃₀	4800 ₅₀	4400 ₆₀	4400 ₆₅	3900 ₇₀	3800 ₅₅
	90	5300	5300	4500 ₂₀	4500 ₂₀	4100 ₄₀	4100 ₃₅	3800 ₆₅	3800 ₅₀	3600 ₉₀	3600 ₆₅
2/90x45	40	2100	2100	1600	1500	1400	1200	1200	NS	1000	NS
	90	1900	1800	1400	1300	1200	1100	1100	NS	NS	NS
2/130x45	40	3000	3000	2300	2400	2100	2000	1900	1900	1700	1600
	90	2600	2700	2100	2100	1900	1800	1700	1600	1500	1400
2/150x45	40	3500	3400	2700	2800	2400	2400	2200	2200	2000	2000
	90	3000	3000	2400	2500	2100	2100	2000	1900	1800 ₅	1800
2/170x45	40	4000	3900	3100	3100	2700	2700	2400	2500	2300	2300
	90	3300	3300	2700	2800	2400	2500	2200	2200	2100 ₅	2000 ₅
2/200x45	40	4500	4500	3700	3600	3200	3200	2900	2900	2700	2700 ₁₀
	90	3800	3700	3200	3200	2800	2900	2600	2700 ₅	2400 ₅	2400 ₁₅
2/240x45	40	5100	5100	4300	4300	3900	3800	3500	3500 ₅	3200 ₁₀	3200 ₁₀
	90	4300	4300	3600	3600	3300	3300	3100 ₁₀	3100 ₅	2900 ₁₀	2900 ₂₀
2/300x45	40	6000	6000	5100	5100	4600	4600	4300 ₁₀	4300 ₁₅	4000 ₂₅	4000 ₃₀
	90	5100	5100	4300	4300	3900 ₅	3900	3600 ₁₅	3600 ₁₀	3400 ₁₅	3400 ₂₀
2/360x45	40	6800	6800	5900	5800	5300 ₅	5300 ₁₀	4900 ₁₀	4900 ₂₅	4600 ₂₀	4600 ₂₅
	90	5800	5800	4900	4900	4500 ₅	4500 ₁₀	4200 ₂₀	4200 ₂₅	4000 ₃₀	3900 ₂₀
2/400x45	40	7300	7300	6300	6300	5700 ₁₀	5700 ₁₀	5300 ₂₀	5300 ₂₅	5000 ₂₀	5000 ₃₅
	90	6200	6200	5300	5300	4900 ₅	4800 ₁₅	4500 ₂₀	4500 ₂₀	4300 ₃₅	4300 ₄₀

Single span lintels in single/upper storey walls AS 4055 classification C1 - C3 (Cont'd)

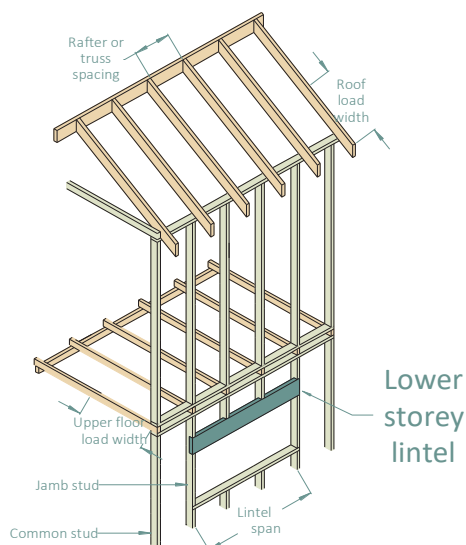
Roof load width (mm)		1500		3000		4500		6000		7500	
Rafter/Truss spacing (mm)		600	1200	600	1200	600	1200	600	1200	600	1200
Member size DxB (mm)	Roof mass (kg/m ²)	Maximum recommended Lintel span (mm)									
		Single span									
90x63	40	1900	1800	1400	1200	1000	NS	NS	NS	NS	NS
	90	1600	1500	1300	1100	1000	NS	NS	NS	NS	NS
130x63	40	2600	2700	2100	2100	1900	1600	1600	1200	1300	NS
	90	2300	2400	1900	1900	1600	1500	1500	1300	1300 ₅	NS
150x63	40	3100	3100	2400	2500	2100	2100	1900 ₅	1600	1600 ₅	1300
	90	2700	2800	2200	2200	1900	1900	1700	1700 ₅	1600 ₅	1300 ₅
170x63	40	3500	3400	2700	2800	2400	2400 ₅	2100 ₅	2100 ₅	1900 ₁₀	1700 ₅
	90	3100	3000	2400	2500	2200	2100	2000 ₁₀	1900 ₁₀	1800 ₂₀	1700 ₁₅
200x63	40	4100	4100	3200	3200	2800	2800 ₅	2500 ₅	2500 ₁₅	2200 ₁₅	2200 ₁₅
	90	3400	3400	2900	2900	2500	2600 ₁₀	2300 ₁₀	2300 ₁₀	2100 ₂₅	2100 ₂₀
240x63	40	4700	4700	3900	3900	3400 ₅	3400 ₅	3100 ₂₀	3000 ₁₅	2700 ₁₅	2700 ₂₅
	90	4000	3900	3300	3300	3000 ₁₅	3000 ₁₀	2800 ₁₅	2800 ₃₀	2500 ₂₀	2600 ₃₅
300x63	40	5500	5500	4600	4600	4200 ₁₅	4200 ₂₀	3900 ₂₅	3800 ₂₀	3500 ₃₀	3400 ₃₀
	90	4700	4700	4000	3900	3600 ₂₀	3600 ₁₀	3300 ₂₅	3300 ₂₅	3200 ₄₅	3100 ₄₀
360x63	40	6300	6300	5300 ₁₀	5300 ₁₀	4800 ₁₅	4800 ₂₅	4500 ₃₀	4500 ₃₅	4200 ₅₀	4100 ₅₅
	90	5300	5300	4500 ₅	4500 ₅	4100 ₂₀	4100 ₁₅	3800 ₃₅	3800 ₃₀	3600 ₅₅	3600 ₄₀
400x63	40	6800	6800	5800 ₁₀	5800 ₁₀	5200 ₂₅	5200 ₂₅	4900 ₃₀	4800 ₄₅	4600 ₄₅	4600 ₅₀
	90	5800	5700	4900 ₅	4900 ₁₅	4400 ₂₅	4400 ₂₅	4100 ₃₅	4200 ₃₀	3900 ₅₅	3900 ₄₀
450x63	40	7400	7400	6300 ₁₅	6300 ₁₀	5700 ₃₀	5700 ₃₀	5300 ₄₅	5300 ₄₅	5000 ₄₅	5000 ₆₅
	90	6300	6300	5400 ₁₅	5400 ₁₅	4900 ₂₀	4800 ₃₅	4500 ₄₅	4500 ₅₀	4300 ₆₅	4300 ₇₅
300x75	40	5800	5800	4900	4900	4400 ₅	4400 ₁₀	4100 ₂₀	4100 ₂₅	3800 ₃₀	3700 ₂₅
	90	4900	4800	4100	4100	3700 ₁₀	3700 ₅	3500 ₁₅	3500 ₁₅	3300 ₃₀	3300 ₂₅
400x75	40	7100	7000	6000 ₅	6000	5500 ₂₀	5500 ₂₀	5100 ₂₀	5100 ₃₅	4800 ₃₀	4800 ₅₀
	90	6000	6000	5100 ₅	5100 ₅	4600 ₁₀	4600 ₁₅	4300 ₃₀	4300 ₃₅	4100 ₄₀	4100 ₃₅

NOTES:

1. D = member depth, B = member breadth, NS = not suitable.
2. Minimum bearing length = 35 mm at end supports. Subscript values indicate the minimum additional bearing length where required to be greater than 35 mm.
3. Restraint value for slenderness calculations is 600 mm.
4. Not all sizes of SmartLVL in this table are stocked in each state. Please check with your supplier before ordering

Single span lintels in lower storey walls AS 4055 classification N1 - N4 & C1

Sheet roof (40 kg/m²)



EXAMPLE:

wind speed = N4
sheet roof - 40 kg/m²
rafter/truss spacing = 600 mm
lintel span = 3500 mm
roof load width = 3900 mm
floor load width = 1200 mm
Enter the Sheet Roof span table at 4500 roof load width column, floor load width 1200 mm, and read down to a span equal to or greater than 3500 mm

ADOPT:

SmartLVL 13- 360x45
(additional 10 mm bearing required)

Roof load width (mm)	1500			3000			4500			6000		
floor load width (mm)	1200	2400	3600	1200	2400	3600	1200	2400	3600	1200	2400	3600
Member size DxB (mm)	Maximum recommended Lintel span (mm) - Sheet roof											
	Single span											
130x45	1700	1500	1400	1600	1400	1300	1500	1400	1300	1400	1300	1200
150x45	1900	1700	1600	1800	1700	1500	1700	1600	1500	1700	1500	1400
170x45	2200	2000	1800	2100	1900	1700	2000	1800	1700	1900	1800	1600
200x45	2600	2300	2100	2400	2200	2100	2300	2100	2000	2200	2100	1900 ₅
240x45	3100	2800	2600 ₅	2900	2700	2500 ₅	2800	2600	2400 ₁₀	2700	2500 ₅	2300 ₁₀
300x45	3600	3400 ₅	3200 ₁₅	3500	3300 ₅	3100 ₁₅	3400 ₅	3200 ₁₀	3000 ₂₀	3300 ₅	3100 ₁₅	2900 ₂₀
360x45	4200	3900 ₁₀	3600 ₂₅	4000	3700 ₁₀	3500 ₂₅	3900 ₁₀	3600 ₁₅	3500 ₂₅	3700 ₁₅	3500 ₂₀	3400 ₃₀
400x45	4500	4200 ₁₅	3900 ₂₅	4300 ₅	4000 ₁₅	3800 ₃₀	4200 ₁₀	3900 ₂₀	3700 ₃₀	4000 ₁₅	3800 ₂₅	3700 ₃₅
2/130x45	2100	1900	1700	2000	1800	1700	1900	1700	1600	1800	1700	1600
2/150x45	2400	2200	2000	2300	2100	1900	2200	2000	1900	2100	2000	1800
2/170x45	2800	2500	2300	2600	2400	2200	2500	2300	2100	2400	2200	2100
2/200x45	3200	2900	2700	3000	2800	2600	2900	2700	2500	2800	2600	2500
2/240x45	3600	3400	3200	3500	3300	3100	3400	3200	3000	3300	3100	3000
2/300x45	4300	4000	3700	4100	3900	3700	4000	3800	3600	3900	3700	3500
2/360x45	4900	4600	4300	4700	4400	4200	4600	4300	4100 ₅	4400	4200	4000 ₅
2/400x45	5300	4900	4600 ₅	5100	4800	4500 ₅	4900	4700	4400 ₅	4800	4500	4300 ₅
130x63	1900	1700	1500	1800	1600	1500	1700	1500	1400	1600	1500	1400
150x63	2200	1900	1800	2000	1900	1700	1900	1800	1700	1900	1700	1600
170x63	2500	2200	2000	2300	2100	2000	2200	2000	1900	2100	2000	1800
200x63	2900	2600	2400	2700	2500	2300	2600	2400	2200	2500	2300	2200
240x63	3300	3100	2900	3200	3000	2800	3100	2900	2700	3000	2800	2600
300x63	3900	3600	3400 ₅	3800	3500	3300 ₅	3600	3400	3300 ₅	3500	3400 ₅	3200 ₁₀
360x63	4500	4200	3900 ₁₀	4300	4100 ₅	3800 ₁₀	4200	3900 ₅	3800 ₁₅	4100 ₅	3800 ₁₀	3700 ₁₅
400x63	4900	4500 ₅	4300 ₁₅	4700	4400 ₅	4200 ₁₅	4500	4300 ₁₀	4100 ₁₅	4400 ₅	4200 ₁₀	4000 ₂₀
450x63	5300	4900 ₅	4700 ₂₀	5100	4800 ₁₀	4500 ₂₀	4900 ₅	4700 ₁₅	4400 ₂₀	4800 ₁₀	4600 ₁₅	4300 ₂₅
300x75	4100	3800	3600	3900	3700	3500	3800	3600	3400	3700	3500	3300 ₅
400x75	5100	4700	4400 ₁₀	4900	4600	4300 ₁₀	4700	4500 ₅	4200 ₁₀	4600	4300 ₅	4200 ₁₀

Single span lintels in lower storey walls AS 4055 classification N1 - N4 & C1

Tile roof (90 kg/m²)

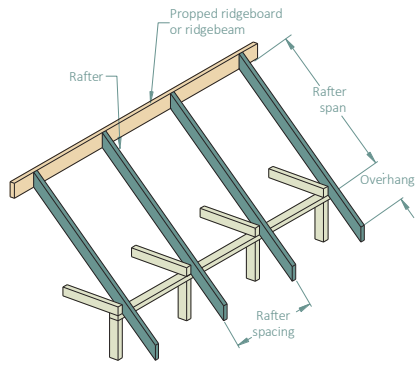
Roof load width (mm)	1500			3000			4500			6000		
floor load width (mm)	1200	2400	3600	1200	2400	3600	1200	2400	3600	1200	2400	3600
Member size DxB (mm)	Maximum recommended Lintel span (mm) - Tile roof											
	Single span											
130x45	1600	1400	1300	1400	1300	1200	1300	1200	1200	1200	1200	1100
150x45	1800	1600	1500	1600	1500	1400	1500	1400	1400	1400	1300	1300
170x45	2000	1900	1700	1800	1700	1600	1700	1600	1500	1600	1500	1500 ₅
200x45	2400	2200	2000	2200	2000	1900 ₅	2000	1900 ₅	1800 ₅	1900 ₅	1800 ₅	1700 ₁₀
240x45	2900	2700	2500 ₁₀	2600	2500 ₅	2300 ₁₀	2400 ₅	2300 ₁₀	2200 ₁₅	2300 ₁₀	2200 ₁₅	2100 ₂₀
300x45	3400	3200 ₅	3100 ₁₅	3200 ₁₀	3000 ₁₅	2900 ₂₀	3000 ₁₅	2900 ₂₀	2800 ₂₅	2900 ₂₀	2700 ₃₀	2600 ₃₀
360x45	4000 ₅	3700 ₁₅	3500 ₂₅	3700 ₁₅	3500 ₂₀	3300 ₃₀	3500 ₂₀	3300 ₃₀	3200 ₃₅	3300 ₃₀	3200 ₃₅	3100 ₄₅
400x45	4300 ₁₀	4000 ₁₅	3800 ₃₀	4000 ₂₀	3800 ₂₅	3600 ₃₅	3800 ₂₅	3600 ₃₅	3500 ₄₅	3600 ₃₅	3500 ₄₅	3400 ₅₀
2/130x45	2000	1800	1700	1800	1700	1600	1600	1600	1500	1500	1500	1400
2/150x45	2300	2100	1900	2100	1900	1800	1900	1800	1700	1800	1700	1600
2/170x45	2600	2400	2200	2300	2200	2100	2200	2000	1900	2000	1900	1900
2/200x45	3000	2800	2600	2800	2600	2400	2600	2400	2300	2400	2300	2200
2/240x45	3500	3200	3100	3200	3100	2900	3000	2900	2800	2900	2800	2600
2/300x45	4100	3800	3600	3800	3600	3500	3600	3500	3300 ₅	3400	3300 ₅	3200 ₅
2/360x45	4700	4400	4200	4400	4200	4000 ₅	4100	4000 ₅	3800 ₁₀	3900 ₅	3800 ₁₀	3700 ₁₅
2/400x45	5100	4800	4500 ₅	4700	4500 ₅	4300 ₁₀	4500 ₅	4300 ₁₀	4100 ₁₅	4300 ₁₀	4100 ₁₅	4000 ₁₅
130x63	1700	1600	1500	1600	1500	1400	1500	1400	1300	1400	1300	1200
150x63	2000	1800	1700	1800	1700	1600	1700	1600	1500	1600	1500	1400
170x63	2300	2100	1900	2100	1900	1800	1900	1800	1700	1800	1700	1600
200x63	2700	2500	2300	2400	2300	2200	2300	2100	2000	2100	2000	1900
240x63	3200	3000	2800	2900	2700	2600	2700	2600	2500 ₅	2600	2400 ₅	2300 ₁₀
300x63	3700	3500	3300 ₅	3500	3300 ₅	3200 ₁₀	3300 ₅	3200 ₁₀	3000 ₁₅	3100 ₁₀	3000 ₁₅	2900 ₂₀
360x63	4300	4000 ₅	3800 ₁₀	4000 ₅	3800 ₁₀	3600 ₁₅	3800 ₁₀	3600 ₁₅	3500 ₂₀	3600 ₁₅	3500 ₂₀	3400 ₂₅
400x63	4600	4400 ₅	4100 ₁₅	4300 ₅	4100 ₁₅	3900 ₂₀	4100 ₁₅	3900 ₂₀	3800 ₂₅	3900 ₂₀	3800 ₂₅	3700 ₃₀
450x63	5100 ₅	4800 ₁₀	4500 ₂₀	4700 ₁₀	4500 ₂₀	4300 ₂₅	4500 ₂₀	4300 ₂₅	4100 ₃₀	4300 ₂₅	4100 ₃₀	4000 ₄₀
300x75	3900	3700	3500	3600	3500	3300 ₅	3400	3300 ₅	3200 ₁₀	3300 ₅	3200 ₁₀	3100 ₁₅
400x75	4800	4500	4300 ₁₀	4500	4300 ₁₀	4100 ₁₅	4300 ₁₀	4100 ₁₅	4000 ₂₀	4100 ₁₅	3900 ₂₀	3800 ₂₅

NOTES:

1. D = member depth, B = member breadth, NS = not suitable.
2. Minimum bearing length = 35 mm at end supports. Subscript values indicate the minimum additional bearing length where required to be greater than 35 mm.
3. Restraint value for slenderness calculations is 600 mm.
4. Not all sizes of SmartLVL in this table are stocked in each state. Please check with your supplier before ordering

Single/continuous span roof rafter - with ceiling attached

AS 4055 classification N1 - N4



EXAMPLE:

wind speed = N4
 sheet roof - 40 kg/m²
 rafter/truss spacing = 600 mm
 rafter span = 5800 mm (single span)
 Enter span table at single span, rafter spacing of 600 mm, and read down to a span equal to or greater than 5800 mm in the 40 kg/m² row

ADOPT:

SmartLVL 13 - 240x45

Rafter spacing (mm)		450		600		900		1200		450		600		900		1200	
Member size D x B (mm)	Roof mass (kg/m ²)	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H
		Maximum recommended single span (mm)								Maximum recommended continuous span (mm)							
90x45	30	2400	250	2400	250	2300	250	2300	250	3000	250	3000	250	3000	250	3000	250
	40	2400	250	2400	250	2300	250	2100	250	2900	250	3000	250	3000	250	2800	250
	75	2300	250	2100	250	1800	250	1700	250	3000	250	2900	250	2500	250	2300	250
	90	2200	250	2000	250	1700	250	1600	250	3000	250	2700	250	2400	250	2200	250
130x45	30	4000	400	4000	400	3500	350	3200	350	5100	400	5100	400	4800	350	4400	350
	40	4000	400	3700	400	3200	350	3000	350	5100	400	5000	400	4400	350	4000	350
	75	3300	400	3000	350	2700	350	2400	300	4500	400	4100	350	3600	350	3300	300
	90	3100	350	2900	350	2500	350	2300	300	4300	350	3900	350	3400	350	3100	300
150x45	30	4900	500	4500	500	4100	450	3700	450	5900	500	5900	500	5500	450	5100	450
	40	4500	500	4200	500	3700	450	3400	450	5900	500	5700	500	5100	450	4700	450
	75	3800	500	3500	450	3100	450	2800	400	5200	500	4700	450	4200	450	3800	400
	90	3600	450	3300	450	2900	400	2600	400	4900	450	4500	450	4000	400	3600	400
170x45	30	5500	650	5100	650	4600	600	4200	550	6700	650	6700	650	6200	600	5700	550
	40	5100	650	4700	600	4200	600	3900	550	6700	650	6300	600	5700	600	5300	550
	75	4300	600	3900	600	3500	550	3200	500	5800	600	5400	600	4700	550	4300	500
	90	4100	600	3700	550	3300	500	3000	500	5500	600	5100	550	4500	500	4100	500
200x45	30	6200	850	5900	850	5300	800	4900	750	7800	850	7500	850	6900	800	6500	750
	40	5900	850	5500	800	4900	750	4500	700	7500	850	7100	800	6500	750	6100	700
	75	5000	800	4600	750	4100	700	3700	650	6600	800	6200	750	5600	700	5100	650
	90	4800	800	4400	750	3900	650	3500	600	6300	800	5900	750	5300	650	4800	600
240x45	30	7000	1150	6700	1100	6200	1000	5900	1000	8900	1150	8400	1100	7800	1000	7400	1000
	40	6700	1100	6400	1050	5900	1000	5400	950	8500	1100	8000	1050	7400	1000	7000	950
	75	6000	1000	5500	1000	4900	900	4500	850	7500	1000	7100	1000	6500	900	6000	850
	90	5700	1000	5200	950	4600	850	4200	800	7200	1000	6800	950	6200	850	5700	800
300x45	30	8100	1600	7800	1500	7300	1400	6900	1300	10300	1600	9800	1500	9100	1400	8600	1300
	40	7800	1550	7400	1450	6900	1350	6500	1250	9800	1550	9300	1450	8600	1350	8200	1250
	75	7000	1400	6600	1350	6000	1200	5600	1100	8800	1400	8300	1350	7600	1200	7100	1100
	90	6700	1400	6300	1300	5700	1150	5300	1000	8500	1400	8000	1300	7300	1150	6800	1000
360x45	30	9200	2050	8800	1950	8200	1800	7800	1650	11500	2050	11100	1950	10300	1800	9800	1650
	40	8800	2000	8400	1900	7800	1700	7400	1550	11100	2000	10500	1900	9800	1700	9300	1550
	75	7900	1800	7500	1700	6900	1500	6400	1350	10000	1800	9400	1700	8700	1500	8100 ₅	1350
	90	7600	1750	7200	1650	6600	1450	6200	1300	9600	1750	9100	1650	8300	1450	7800 ₅	1300
400x45	30	9800	2400	9400	2250	8800	2050	8400	1900	12000	2400	11900	2250	11100	2050	10500	1900
	40	9400	2300	9000	2200	8400	1950	7900	1800	11900	2300	11300	2200	10500	1950	10000 ₅	1800
	75	8500	2100	8000	1950	7400	1700	7000	1550	10700	2100	10100	1950	9300	1700	8800 ₁₀	1550
	90	8200	2000	7800	1850	7100	1600	6700	1450	10300	2000	9700	1850	9000	1600	8400 ₁₀	1450
90x63	30	2800	300	2800	300	2700	300	2500	300	3500	300	3500	300	3500	300	3400	300
	40	2800	300	2800	300	2500	300	2300	300	3500	300	3500	300	3400	300	3100	300
	75	2600	300	2300	300	2100	300	1900	250	3500	300	3200	300	2800	300	2600	250
	90	2400	300	2200	300	1900	250	1800	250	3300	300	3000	300	2600	250	2400	250
	30	4600	650	4300	600	3900	600	3600	550	5700	650	5700	600	5300	600	4900	550
	40	4300	600	4000	600	3600	550	3300	550	5700	600	5500	600	4900	550	4500	550
	75	3700	600	3400	550	3000	500	2700	500	5000	600	4600	550	4000	500	3700	500
	90	3500	600	3200	550	2800	500	2600	450	4700	600	4300	550	3800	500	3500	450

Single/continuous span roof rafter - with ceiling attached AS 4055 classification N1 - N4 (Cont'd)

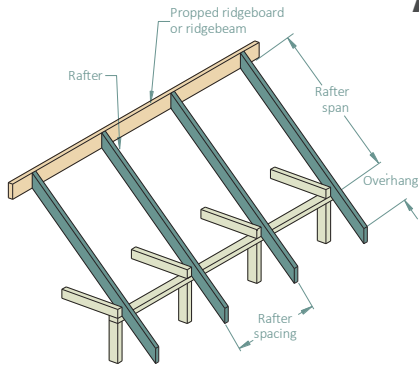
Rafter spacing (mm)		450		600		900		1200		450		600		900		1200	
Member size D x B (mm)	Roof mass (kg/m ²)	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H
		Maximum recommended single span (mm)								Maximum recommended continuous span (mm)							
150x63	30	5300	800	4900	750	4500	750	4100	700	6600	800	6500	750	6000	750	5600	700
	40	4900	800	4600	750	4100	700	3800	650	6500	800	6200	750	5600	700	5200	650
	75	4200	750	3900	700	3400	650	3100	600	5700	750	5200	700	4700	650	4300	600
	90	4000	700	3700	700	3200	650	2900	600	5400	700	5000	700	4400	650	4000	600
170x63	30	5900	1000	5500	950	5000	900	4600	850	7400	1000	7100	950	6600	900	6200	850
	40	5500	950	5200	950	4600	850	4300	800	7100	950	6700	950	6200	850	5800	800
	75	4700	900	4400	850	3900	800	3500	750	6300	900	5900	850	5300	800	4800	750
	90	4500	900	4100	850	3600	750	3300	700	6100	900	5600	850	5000	750	4500	700
200x63	30	6600	1250	6300	1200	5800	1100	5400	1050	8300	1250	7900	1200	7400	1100	7000	1050
	40	6300	1200	6000	1150	5400	1050	5000	1000	7900	1200	7500	1150	7000	1050	6600	1000
	75	5500	1100	5100	1050	4500	1000	4100	900	7100	1100	6600	1050	6100	1000	5600	900
	90	5200	1100	4800	1000	4300	950	3900	850	6800	1100	6400	1000	5800	950	5300	850
240x63	30	7400	1600	7100	1550	6600	1450	6300	1350	9300	1600	8900	1550	8300	1450	7900	1350
	40	7100	1600	6800	1500	6300	1400	5900	1300	9000	1600	8500	1500	7900	1400	7500	1300
	75	6400	1450	6000	1350	5400	1200	5000	1100	8000	1450	7600	1350	7000	1200	6500	1100
	90	6100	1400	5700	1300	5100	1150	4700	1050	7700	1400	7300	1300	6700	1150	6300	1050
300x63	30	8500	2200	8200	2100	7700	1900	7300	1800	10800	2200	10300	2100	9700	1900	9200	1800
	40	8200	2150	7900	2000	7300	1850	6900	1700	10300	2150	9900	2000	9200	1850	8700	1700
	75	7400	1950	7000	1800	6500	1600	6100	1450	9400	1950	8800	1800	8200	1600	7700	1450
	90	7200	1900	6800	1750	6200	1550	5800	1400	9000	1900	8500	1750	7900	1550	7400	1400
360x63	30	9500	2750	9200	2650	8700	2400	8300	2200	12000	2750	11600	2650	10900	2400	10400	2200
	40	9200	2700	8900	2550	8300	2300	7900	2100	11600	2700	11100	2550	10400	2300	9900	2100
	75	8400	2400	8000	2250	7400	2000	6900	1800	10600	2400	10000	2250	9300	2000	8700	1800
	90	8100	2350	7700	2150	7100	1900	6700	1700	10200	2350	9700	2150	8900	1900	8400	1700
400x63	30	10200	3050	9900	2950	9300	2700	8900	2500	12000	3150	12000	3000	11800	2700	11200	2500
	40	9900	2950	9500	2850	8900	2600	8500	2350	12000	3050	11900	2850	11200	2600	10600	2350
	75	9000	2700	8600	2550	8000	2250	7500	2000	11300	2750	10800	2550	10000	2250	9400	2000
	90	8700	2600	8300	2450	7700	2100	7200	1900	11000	2650	10400	2450	9600	2100	9000	1900
450x63	30	10900	3250	10600	3100	10000	3000	9600	2850	12000	3600	12000	3400	12000	3100	12000	2850
	40	10600	3100	10200	3050	9600	2800	9200	2700	12000	3450	12000	3250	12000	2950	11500	2700
	75	9800	2900	9300	2700	8600	2550	8100	2300	12000	3150	11700	2900	10800	2550	10200	2300
	90	9500	2850	9000	2700	8300	2400	7800	2150	11900	3000	11300	2750	10500	2400	9800	2150
300x75	30	8700	2550	8400	2450	7900	2200	7600	2050	11000	2550	10600	2450	10000	2200	9500	2050
	40	8400	2500	8100	2350	7600	2100	7200	1950	10600	2500	10200	2350	9500	2100	9000	1950
	75	7700	2250	7300	2100	6700	1850	6300	1700	9600	2250	9100	2100	8500	1850	8000	1700
	90	7400	2150	7000	2000	6500	1750	6100	1600	9300	2150	8800	2000	8200	1750	7600	1600
400x75	30	10400	3100	10100	3000	9500	2850	9200	2750	12000	3550	12000	3350	12000	3050	11500	2850
	40	10100	3000	9700	2900	9200	2750	8700	2600	12000	3450	12000	3250	11500	2900	11000	2700
	75	9300	2700	8800	2600	8200	2450	7800	2300	11600	3100	11100	2850	10300	2550	9700	2300
	90	9000	2700	8500	2550	7900	2350	7500	2150	11300	3000	10800	2750	10000	2400	9400	2150

NOTES:

1. D = member depth, B = member breadth, NS = not suitable.
2. The above table was based on a batten spacing of 900 mm
3. Maximum birdsmouth depth = 30 % of rafter depth
4. End bearing lengths = 35 mm at end supports and 42 mm at internal supports for continuous members. Subscript values Indicate the minimum additional bearing length where required to be greater than 35 mm at end supports and 42 mm at Internal supports
5. Construction loads shall not be applied to overhangs until a 190x19 (minimum) timber fascia or other fascia of equivalent stiffness is rigidly and permanently attached to the end of rafter overhangs
6. Rafter spacing up to 1200 mm
7. Not all sizes of SmartLVL in this table are stocked in each state. Please check with your supplier before ordering.

Single/continuous span roof rafter - with ceiling attached

AS 4055 classification C1 - C3



Maximum Birdsmouth = 30% of rafter depth

EXAMPLE:

wind speed = C3

tile roof - 75 kg/m²

rafter/truss spacing = 600 mm

rafter span = 5800 mm (single span)

Enter span table at single span, rafter spacing of 600 mm, and read down to a span equal to or greater than 5800 mm in the 75 kg/m² row

ADOPT:

SmartLVL 13 – 300x45

Rafter spacing (mm)		450		600		900		1200		450		600		900		1200	
Member size D x B	Roof mass (kg/m ²)	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H
Maximum recommended single span (mm)										Maximum recommended continuous span (mm)							
90x45	30	2400	250	2400	250	2100	250	1900	250	3000	250	3000	250	2500	250	2100	250
	40	2400	250	2400	250	2100	250	1900	250	3000	250	3000	250	2500	250	2100	250
	75	2300	250	2100	250	1800	250	1700	250	3000	250	2900	250	2500	250	2200	250
	90	2200	250	2000	250	1700	250	1600	250	3000	250	2700	250	2400	250	2100	250
130x45	30	3900	400	3600	400	3100	350	2800	350	5100	400	4700	400	3700	350	3100	350
	40	3900	400	3600	400	3100	350	2800	350	5100	400	4700	400	3700	350	3100	350
	75	3300	400	3000	350	2700	350	2400	300	4500	400	4100	350	3600	350	3300	300
	90	3100	350	2900	350	2500	350	2300	300	4300	350	3900	350	3400	350	3100	300
150x45	30	4500	500	4100	500	3600	450	3300	450	5700	500	5300	500	4300	450	3600	450
	40	4500	500	4100	500	3600	450	3300	450	5700	500	5300	500	4400	450	3700	450
	75	3800	500	3500	450	3100	450	2800	400	5200	500	4700	450	4200	450	3800	400
	90	3600	450	3300	450	2900	400	2600	400	4900	450	4500	450	4000	400	3600	400
170x45	30	5000	650	4600	650	4100	600	3700	550	6300	650	5800	650	4900	600	4200	550
	40	5000	650	4600	600	4100	600	3700	550	6300	650	5800	600	5000	600	4200	550
	75	4300	600	3900	600	3500	550	3200	500	5800	600	5400	600	4700	550	4300	500
	90	4100	600	3700	550	3300	500	3000	500	5500	600	5100	550	4500	500	4100	500
200x45	30	5600	850	5200	850	4700	800	4400	750	7100	850	6600	850	5800	800	4900	750
	40	5600	850	5200	800	4700	750	4400	700	7100	850	6600	800	5900	750	5000	700
	75	5000	800	4600	750	4100	700	3700	650	6600	800	6200	750	5600	700	5100 ₁₀	650
	90	4800	800	4400	750	3900	650	3500	600	6300	800	5900	750	5300	650	4800 ₅	600
240x45	30	6500	1150	6000	1100	5400	1000	5100	1000	8100	1150	7600	1100	6800	1000	6000 ₁₀	1000
	40	6500	1100	6000	1050	5400	1000	5100	950	8100	1100	7600	1050	6800	1000	6100 ₁₀	950
	75	6000	1000	5500	1000	4900	900	4500	850	7500	1000	7100	1000	6500 ₅	900	6000 ₂₀	850
	90	5700	1000	5200	950	4600	850	4200	800	7200	1000	6800	950	6200 ₅	850	5700 ₁₅	800
300x45	30	7600	1600	7100	1500	6400	1400	6000	1300	9600	1600	8900	1500	8100	1400	7500 ₂₅	1300
	40	7600	1550	7100	1450	6400	1350	6000	1250	9600	1550	8900	1450	8100	1350	7500	1250
	75	7000	1400	6600	1350	6000	1200	5600	1100	8800	1400	8300	1350	7600 ₁₅	1200	7100 ₃₀	1100
	90	6700	1400	6300	1300	5700	1150	5300	1000	8500	1400	8000	1300	7300 ₁₅	1150	6800 ₃₀	1000
360x45	30	8800	2050	8200	1950	7400	1800	6900	1550	11000	2050	10200	1950	9300 ₂₀	1800	8600 ₃₅	1550
	40	8800	2000	8200	1900	7400	1700	6900	1550	11000	2000	10200 ₅	1900	9300 ₂₀	1700	8600 ₄₀	1550
	75	7900	1800	7500	1700	6900	1500	6400	1350	10000	1800	9400 ₅	1700	8700 ₂₅	1500	8100 ₄₀	1350
	90	7600	1750	7200	1650	6600	1450	6200	1300	9600	1750	9100 ₅	1650	8300 ₂₅	1450	7800 ₄₀	1300
400x45	30	9500	2400	8800	2250	8000	1950	7400	1700	11900	2400	11100 ₅	2250	10000 ₂₅	1950	9300 ₄₀	1700
	40	9400	2300	8800	2200	8000	1900	7400	1650	11900	2300	11100 ₁₀	2200	10000 ₂₅	1900	9300 ₄₅	1650
	75	8500	2100	8000	1950	7400	1700	7000	1550	10700	2100	10100 ₁₀	1950	9300 ₃₀	1700	8800 ₅₀	1550
	90	8200	2000	7800	1850	7100	1600	6700	1450	10300	2000	9700 ₁₀	1850	9000 ₃₀	1600	8400 ₅₀	1450
90x63	30	2800	300	2800	300	2400	300	2200	300	3500	300	3500	300	3000	300	2500	300
	40	2800	300	2800	300	2400	300	2200	300	3500	300	3500	300	3000	300	2500	300
	75	2600	300	2300	300	2100	300	1900	250	3500	300	3200	300	2800	300	2600	250
	90	2400	300	2200	300	1900	250	1800	250	3300	300	3000	300	2600	250	2400	250
	30	4400	650	4000	600	3500	600	3200	550	5600	650	5200	600	4400	600	3700	550
	40	4300	600	4000	600	3500	550	3200	550	5600	600	5200	600	4500	550	3800	550
	75	3700	600	3400	550	3000	500	2700	500	5000	600	4600	550	4000	500	3700	500
	90	3500	600	3200	550	2800	500	2600	450	4700	600	4300	550	3800	500	3500	450

Single/continuous span roof rafter - with ceiling attached AS 4055 classification C1 - C3 (cont'd)

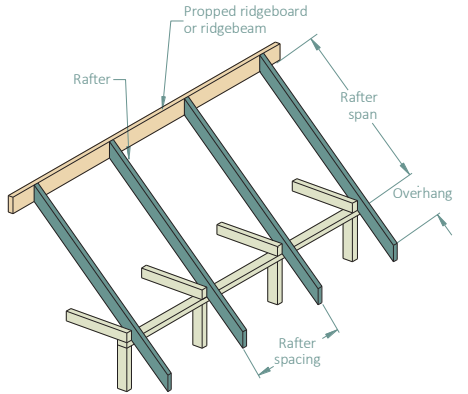
Rafter spacing (mm)		450		600		900		1200		450		600		900		1200	
Member size D x B (mm)	Roof mass (kg/m ²)	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H
		Maximum recommended single span (mm)								Maximum recommended continuous span (mm)							
150x63	30	4900	800	4600	750	4000	750	3700	700	6200	800	5800	750	5200	700	4400	700
	40	4900	800	4600	750	4000	700	3700	650	6200	800	5800	750	5200	700	4400	650
	75	4200	750	3900	700	3400	650	3100	600	5700	750	5200	700	4700	650	4300	600
170x63	90	4000	700	3700	700	3200	650	2900	600	5400	700	5000	700	4400	650	4000	600
	30	5400	1000	5000	950	4600	900	4200	850	6800	1000	6300	950	5700	900	5000	850
	40	5400	950	5000	950	4600	850	4200	800	6800	950	6300	950	5700	850	5000	800
200x63	75	4700	900	4400	850	3900	800	3500	750	6300	900	5900	850	5300	800	4800	750
	90	4500	900	4100	850	3600	750	3300	700	6100	900	5600	850	5000	750	4500	700
	30	6100	1250	5700	1200	5200	1100	4800	1050	7700	1250	7200	1200	6500	1100	5900	1050
240x63	40	6100	1200	5700	1150	5200	1050	4800	1000	7700	1200	7200	1150	6500	1050	6000	1000
	75	5500	1100	5100	1050	4500	1000	4100	900	7100	1100	6600	1050	6100	1000	5600	900
	90	5200	1100	4800	1000	4300	950	3900	850	6800	1100	6400	1000	5800	950	5300	850
300x63	30	7000	1600	6500	1550	5900	1450	5500	1300	8900	1600	8200	1550	7400	1450	6900	1300
	40	7000	1600	6500	1500	5900	1400	5500	1300	8900	1600	8200	1500	7400	1400	6900	1300
	75	6400	1450	6000	1350	5400	1200	5000	1100	8000	1450	7600	1350	7000	1200	6500	1100
360x63	90	6100	1400	5700	1300	5100	1150	4700	1050	7700	1400	7300	1300	6700	1150	6300	1050
	30	8300	2200	7700	2100	7000	1800	6500	1600	10500	2200	9700	2100	8800	1800	8200 ₁₀	1600
	40	8200	2150	7700	2000	7000	1800	6500	1550	10400	2150	9700	2000	8800	1800	8200 ₁₀	1550
400x63	75	7400	1950	7000	1800	6500	1600	6100	1450	9400	1950	8800	1800	8200	1600	7700 ₁₀	1450
	90	7200	1900	6800	1750	6200	1550	5800	1400	9000	1900	8500	1750	7900	1550	7400 ₁₅	1400
	30	9500	2750	8900	2550	8000	2100	7400	1850	12000	2750	11100	2550	10100 ₅	2100	9400 ₁₅	1850
450x63	40	9200	2700	8900	2500	8000	2050	7400	1800	11600	2700	11100	2500	10100 ₅	2050	9400 ₂₀	1800
	75	8400	2400	8000	2250	7400	1950	6900	1700	10600	2400	10000	2250	9300 ₁₀	1950	8700 ₂₀	1700
	90	8100	2350	7700	2150	7100	1900	6700	1650	10200	2350	9700	2150	8900 ₅	1900	8400 ₂₀	1650
450x63	30	10200	3050	9600	2750	8700	2300	8100	2000	12000	3150	12000	2750	10900 ₁₀	2300	10100 ₂₀	2000
	40	9900	2950	9500	2700	8700	2250	8100	1950	12000	3050	11900	2700	10900 ₁₀	2250	10100 ₂₅	1950
	75	9000	2700	8600	2550	8000	2150	7500	1850	11300	2750	10800	2550	10000 ₁₀	2150	9400 ₂₅	1850
450x63	90	8700	2600	8300	2450	7700	2100	7200	1800	11000	2650	10400	2450	9600 ₁₀	2100	9000 ₂₅	1800
	30	10900	3250	10500	3050	9500	2500	8800	2200	12000	3450	12000	3050	11900 ₁₅	2500	11100 ₃₀	2200
	40	10600	3100	10200	3000	9500	2500	8800	2150	12000	3400	12000	3000	11900 ₁₅	2500	11100 ₃₀	2150
300x75	75	9700	2900	9300	2700	8600	2350	8100	2050	12000	3150	11700	2850	10800 ₁₅	2350	10200 ₃₅	2050
	90	9500	2850	9000	2700	8300	2300	7800	2000	11900	3000	11300	2750	10500 ₂₀	2300	9800 ₃₅	2000
	30	8700	2550	8100	2350	7300	1950	6800	1700	10900	2550	10100	2350	9200	1950	8500	1700
400x75	40	8400	2500	8100	2350	7300	1950	6800	1700	10600	2500	10200	2350	9200	1950	8500	1700
	75	7700	2250	7300	2100	6700	1850	6300	1600	9600	2250	9100	2100	8500	1850	8000 ₅	1600
	90	7400	2150	7000	2000	6500	1750	6100	1550	9300	2150	8800	2000	8200	1750	7600 ₅	1550
400x75	30	10400	3100	10000	3000	9100	2500	8400	2150	12000	3400	12000	3000	11400	2500	10600 ₁₅	2150
	40	10100	3000	9700	2900	9000	2450	8400	2150	12000	3350	12000	2950	11400 ₅	2450	10600 ₁₅	2150
	75	9300	2700	8800	2600	8200	2300	7800	2000	11600	3100	11100	2800	10300 ₅	2300	9700 ₁₅	2000
	90	9000	2700	8500	2550	7900	2300	7500	2000	11300	3000	10800	2750	10000 ₅	2300	9400 ₂₀	2000

NOTES:

1. D = member depth, B = member breadth, NS = not suitable.
2. The above table was based on a batten spacing of 900 mm
3. Maximum birdsmouth depth = 30 % of rafter depth
4. End bearing lengths = 35 mm at end supports and 42 mm at internal supports for continuous members. Subscript values Indicate the minimum additional bearing length where required to be greater than 35 mm at end supports and 42 mm at Internal supports
5. Construction loads shall not be applied to overhangs until a 190x19 (minimum) timber fascia or other fascia of equivalent stiffness is rigidly and permanently attached to the end of rafter overhangs
6. Rafter spacing up to 1200 mm
7. Not all sizes of SmartLVL in this table are stocked in each state. Please check with your supplier before ordering.

Single/continuous span roof rafter - without ceiling attached

AS 4055 classification N1 - N4



EXAMPLE:

wind speed = N4
 sheet roof - 40 kg/m²
 rafter/truss spacing = 600 mm
 rafter span = 5800 mm (single span)
 Enter span table at single span, rafter spacing of 600 mm, and read down to a span equal to or greater than 5800 mm in the 40 kg/m² row

ADOPT:

SmartLVL 13 - 240x45

Rafter spacing (mm)		450		600		900		1200		450		600		900		1200	
Member size DxB (mm)	Roof mass (kg/m ²)	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H
Maximum recommended single span (mm)										Maximum recommended continuous span (mm)							
90x45	10	2400	250	2350	250	2300	250	2300	250	2950	250	2950	250	2950	250	2950	250
	20	2400	250	2350	250	2300	250	2300	250	2950	250	2950	250	2950	250	2950	250
	40	2400	250	2350	250	2300	250	2100	250	2950	250	2950	250	2950	250	2850	250
	60	2400	250	2300	250	2000	250	1850	250	2950	250	2950	250	2750	250	2500	250
130x45	10	4050	450	4000	425	3900	425	3700	400	5100	450	5100	425	5100	425	4650	400
	20	4050	425	4000	425	3900	400	3650	400	5100	425	5100	425	5100	400	4750	400
	40	3950	425	3650	400	3250	400	3000	375	5100	425	5000	400	4400	400	4050	375
	60	3550	400	3250	400	2900	375	2650	350	4800	400	4400	400	3900	375	3600	350
150x45	10	5000	575	4900	575	4650	550	4250	525	5900	575	5900	575	5800	550	5400	525
	20	5000	575	4900	550	4550	525	4200	500	5900	575	5900	550	5800	525	5400	500
	40	4550	550	4200	525	3750	500	3450	475	5900	550	5700	525	5100	500	4650	475
	60	4050	525	3750	525	3300	475	3050	450	5500	525	5100	525	4500	475	4100	450
170x45	10	5600	725	5550	725	5100	675	4750	650	6650	725	6650	725	6400	675	5950	650
	20	5600	725	5550	700	5100	650	4750	625	6650	725	6650	700	6400	650	5950	625
	40	5100	700	4750	675	4200	625	3900	600	6650	700	6300	675	5700	625	5250	600
	60	4600	675	4200	650	3750	600	3400	550	6150	675	5700	650	5100	600	4650	550
200x45	10	6550	975	6350	950	5750	900	5350	875	7850	975	7850	950	7200	900	6700	875
	20	6550	950	6350	925	5750	875	5350	825	7850	950	7850	925	7200	875	6700	825
	40	5900	925	5500	875	4900	825	4550	775	7450	925	7050	875	6500	825	6100	775
	60	5350	875	4900	825	4400	775	4000	700	6900	875	6500	825	5950	775	5450	700
240x45	10	7800	1325	7300	1275	6600	1225	6100	1150	9400	1325	9150	1275	8300	1225	7700	1150
	20	7500	1300	7200	1250	6600	1175	6100	1100	9400	1300	9050	1250	8300	1175	7700	1100
	40	6700	1225	6400	1175	5850	1075	5400	1000	8450	1225	8000	1175	7400	1075	6950	1000
	60	6250	1175	5850	1100	5200	1000	4800	925	7850	1175	7400	1100	6800	1000	6350	925
300x45	10	9250	1875	8600	1825	7800	1700	7250	1625	11600	1875	10850	1825	9800	1700	9100	1625
	20	8600	1825	8300	1750	7800	1625	7250	1525	10850	1825	10450	1750	9800	1625	9100	1525
	40	7800	1700	7450	1625	6900	1475	6500	1375	9800	1700	9350	1625	8650	1475	8150 ₅	1375
	60	7300	1625	6900	1525	6350	1375	5950	1250	9150	1625	8650	1525	7950	1375	7500 ₅	1250
360x45	10	10250	2450	9850	2375	8900	2200	8300	2075	12000	2450	12000	2375	11200	2200	10450 ₅	2075
	20	9650	2350	9300	2250	8800	2075	8300	1950	12000	2350	11700	2250	11050	2075	10450 ₁₀	1950
	40	8800	2200	8400	2075	7800	1875	7400	1725	11050	2200	10550	2075	9850	1875	9300 ₁₀	1725
	60	8250	2075	7800	1925	7200	1725	6800	1575	10350	2075	9850	1925	9050	1725	8550 ₁₀	1575
400x45	10	10900	2825	10650	2725	9650	2550	9000	2375	12000	2825	12000	2725	12000	2550	11300 ₁₀	2375
	20	10250	2725	9950	2600	9400	2375	9000	2225	12000	2725	12000	2600	11850	2375	11300 ₁₅	2225
	40	9400	2525	9000	2375	8400	2150	7950	1950	11850	2525	11350	2375	10550 ₅	2150	10000 ₁₅	1950
	60	8850	2375	8400	2200	7750	1950	7300	1775	11100	2375	10550	2200	9750 ₅	1950	9200 ₁₅	1775
90x63	10	2800	350	2800	350	2700	325	2650	325	3500	350	3500	350	3500	325	3500	325
	20	2800	350	2800	350	2700	325	2650	325	3500	350	3500	350	3500	325	3500	325
	40	2800	350	2800	325	2550	325	2300	300	3500	350	3500	325	3450	325	3150	300
	60	2750	325	2550	325	2250	300	2050	300	3500	325	3450	325	3050	300	2750	300
	10	4750	700	4700	675	4500	650	4100	625	5700	700	5700	675	5700	650	5300	625
	20	4750	675	4700	675	4350	650	4050	600	5700	675	5700	675	5700	650	5300	600
	40	4350	675	4050	650	3600	600	3300	575	5700	675	5450	650	4900	600	4500	575
	60	3900	650	3600	625	3200	575	2900	550	5300	650	4900	625	4350	575	3950	550
130x63	10	4750	700	4700	675	4500	650	4100	625	5700	700	5700	675	5700	650	5300	625
	20	4750	675	4700	675	4350	650	4050	600	5700	675	5700	675	5700	650	5300	600
	40	4350	675	4050	650	3600	600	3300	575	5700	675	5450	650	4900	600	4500	575
	60	3900	650	3600	625	3200	575	2900	550	5300	650	4900	625	4350	575	3950	550
	10	4750	700	4700	675	4500	650	4100	625	5700	700	5700	675	5700	650	5300	625
	20	4750	675	4700	675	4350	650	4050	600	5700	675	5700	675	5700	650	5300	600
	40	4350	675	4050	650	3600	600	3300	575	5700	675	5450	650	4900	600	4500	575
	60	3900	650	3600	625	3200	575	2900	550	5300	650	4900	625	4350	575	3950	550

Single/continuous span roof rafter - without ceiling attached AS 4055 classification N1 - N4 (Cont'd)

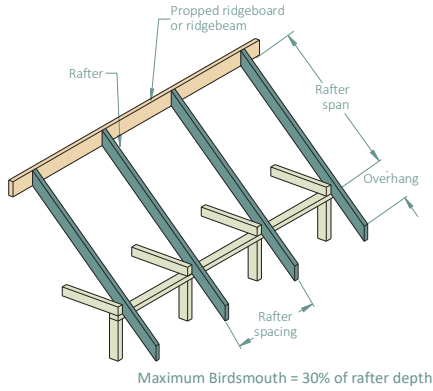
Rafter spacing (mm)		450		600		900		1200		450		600		900		1200	
Member size	Roof mass	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H
DxB (mm)	(kg/m ²)	Maximum recommended single span (mm)								Maximum recommended continuous span (mm)							
150x63	10	5550	900	5450	875	5050	850	4700	800	6550	900	6550	875	6350	850	5900	800
	20	5550	875	5400	850	4950	800	4600	775	6550	875	6550	850	6350	800	5900	775
	40	4950	850	4600	825	4100	775	3800	725	6550	850	6200	825	5600	775	5150	725
	60	4450	825	4100	775	3650	725	3350	675	6050	825	5600	775	5000	725	4550	675
170x63	10	6250	1100	6100	1075	5550	1025	5150	975	7450	1100	7450	1075	6950	1025	6450	975
	20	6250	1075	6050	1050	5550	1000	5150	950	7450	1075	7450	1050	6950	1000	6450	950
	40	5550	1025	5150	1000	4650	925	4300	875	7100	1025	6750	1000	6200	925	5800	875
	60	5000	1000	4650	950	4150	875	3800	800	6600	1000	6200	950	5600	875	5150	800
200x63	10	7300	1450	6900	1400	6250	1325	5800	1275	8750	1450	8700	1400	7850	1325	7300	1275
	20	6950	1400	6700	1350	6250	1275	5800	1200	8750	1400	8450	1350	7850	1275	7300	1200
	40	6300	1325	6000	1275	5400	1175	5000	1100	7900	1325	7550	1275	6950	1175	6550	1100
	60	5800	1275	5400	1200	4850	1100	4450	1000	7350	1275	6950	1200	6400	1100	6000	1000
240x63	10	8350	1900	7900	1825	7150	1725	6650	1650	10450	1900	9950	1825	9000	1725	8400	1650
	20	7800	1825	7550	1775	7100	1650	6650	1550	9800	1825	9500	1775	8950	1650	8400	1550
	40	7100	1725	6800	1650	6300	1500	5950	1400	8950	1725	8550	1650	7900	1500	7500	1400
	60	6650	1650	6300	1550	5750	1400	5300	1275	8350	1650	7900	1550	7300	1400	6850	1275
300x63	10	9450	2600	9250	2500	8450	2350	7900	2225	11900	2600	11650	2500	10650	2350	9900	2225
	20	8950	2500	8650	2400	8200	2200	7850	2075	11250	2500	10900	2400	10350	2200	9900	2075
	40	8200	2325	7850	2200	7350	2000	6950	1850	10350	2325	9900	2200	9250	2000	8750	1850
	60	7700	2200	7350	2050	6800	1850	6400	1675	9700	2200	9250	2050	8550	1850	8050	1675
360x63	10	10450	3250	10300	3150	9700	2925	9050	2775	12000	3250	12000	3150	12000	2925	11350	2775
	20	9950	3125	9700	3000	9250	2750	8850	2575	12000	3125	12000	3000	11600	2750	11150	2575
	40	9250	2925	8850	2750	8300	2475	7900	2275	11600	2925	11150	2750	10450	2475	9900	2275
	60	8700	2750	8300	2550	7700	2275	7300	2050	10950	2750	10450	2550	9700	2275	9150	2050
400x63	10	11100	3650	10900	3550	10500	3325	9750	3050	12000	3700	12000	3550	12000	3325	12000	3050
	20	10600	3450	10300	3375	9850	3100	9500	2900	12000	3550	12000	3375	12000	3100	11950	2900
	40	9850	3250	9500	3100	8900	2775	8500	2550	12000	3300	11950	3100	11200	2775	10650	2550
	60	9350	3075	8900	2875	8300	2550	7850	2300	11750	3075	11200	2875	10450	2550	9850	2300
450x63	10	11850	3900	11650	3800	11350	3700	10700	3350	12000	3950	12000	3950	12000	3775	12000	3350
	20	11350	3700	11050	3600	10600	3450	10250	3250	12000	3950	12000	3825	12000	3525	12000	3250
	40	10600	3450	10250	3375	9650	3150	9200	2900	12000	3725	12000	3500	12000	3150	11550 ₅	2900
	60	10050	3300	9650	3175	9000	2875	8500	2600	12000	3500	12000	3250	11300	2875	10700 ₅	2600
300x75	10	9550	2975	9400	2875	8850	2700	8250	2550	12000	2975	11800	2875	11100	2700	10350	2550
	20	9100	2875	8850	2750	8400	2550	8100	2375	11450	2875	11100	2750	10600	2550	10150	2375
	40	8400	2675	8100	2525	7550	2300	7200	2125	10600	2675	10150	2525	9500	2300	9050	2125
	60	7950	2525	7550	2375	7050	2125	6650	1925	10000	2525	9500	2375	8850	2125	8350	1925
	10	11200	3650	11050	3600	10750	3500	10200	3300	12000	3950	12000	3950	12000	3725	12000	3300
	20	10750	3500	10500	3450	10050	3300	9700	3200	12000	3950	12000	3800	12000	3500	12000	3200
	40	10050	3300	9700	3200	9150	3000	8750	2875	12000	3700	12000	3475	11550	3150	11000	2875
	60	9550	3150	9150	3000	8550	2800	8100	2600	12000	3475	11550	3250	10750	2875	10200	2600

NOTES:

1. D = member depth, B = member breadth, NS = not suitable.
2. The above table was based on a batten spacing of 900 mm
3. Maximum birdsmouth depth = 30 % of rafter depth
4. End bearing lengths = 35 mm at end supports and 42 mm at internal supports for continuous members. Subscript values indicate the minimum additional bearing length where required to be greater than 35 mm at end supports and 42 mm at internal supports
5. Construction loads shall not be applied to overhangs until a 190 x 19 (minimum) timber fascia or other fascia of equivalent stiffness is rigidly and permanently attached to the end of rafter overhangs
6. Rafter spacing up to 1200 mm
7. Not all sizes of SmartLVL in this table are stocked in each state. Please check with your supplier before ordering.

Single/continuous span roof rafter - without ceiling attached

AS 4055 classification C1 - C3



EXAMPLE:

wind speed = C3
 sheet roof - 40 kg/m²
 rafter/truss spacing = 600 mm
 rafter span = 5800 mm
 Enter span table at single span, rafter spacing of 600 mm, and read down to a span equal to or greater than 5800 mm in the 40 kg/m² row

ADOPT:

SmartLVL 13 - 240x45

Rafter spacing (mm)		450		600		900		1200		450		600		900		1200	
Member size	Roof mass	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H
DxB (mm)	(kg/m ²)	Maximum recommended single span (mm)								Maximum recommended continuous span (mm)							
90x45	10	2400	250	2350	250	2150	250	1950	250	3650	250	3100	250	2450	250	2050	250
	20	2400	250	2350	250	2150	250	1950	250	3700	250	3150	250	2450	250	2050	250
	40	2400	250	2350	250	2150	250	1950	250	3700	250	3200	250	2500	250	2100	250
	60	2400	250	2300	250	2000	250	1850	250	3400	250	3100	250	2600	250	2150	250
130x45	10	3950	450	3600	425	3150	425	2850	400	5150	450	4600	425	3650	425	3050	400
	20	3950	425	3600	425	3150	400	2850	400	5150	425	4600	425	3650	400	3050	400
	40	3950	425	3600	400	3150	400	2850	375	5150	425	4700	400	3750	400	3150	375
	60	3550	400	3250	400	2900	375	2650	350	4800	400	4400	400	3850	375	3200	350
150x45	10	4550	575	4150	575	3600	550	3300	525	5700	575	5300	575	4200	550	3550	525
	20	4550	575	4150	550	3600	525	3300	500	5700	575	5300	550	4250	525	3600	500
	40	4550	550	4150	525	3600	500	3300	475	5700	550	5300	525	4350	500	3650	475
	60	4050	525	3750	525	3300	475	3050	450	5500	525	5100	525	4450	475	3750	450
170x45	10	5000	725	4650	725	4100	675	3750	650	6300	725	5850	725	4800	675	4050	650
	20	5000	725	4650	700	4100	650	3750	625	6300	725	5850	700	4850	650	4100	625
	40	5000	700	4650	675	4100	625	3750	600	6300	700	5850	675	5000	625	4200	600
	60	4600	675	4200	650	3750	600	3400	550	6150	675	5700	650	5100	600	4300 ₅	550
200x45	10	5650	975	5250	950	4750	900	4400	875	7100	975	6600	950	5700	900	4850	875
	20	5650	950	5250	925	4750	875	4400	825	7100	950	6600	925	5750	875	4900 ₅	825
	40	5650	925	5250	875	4750	825	4400	775	7100	925	6600	875	5900 ₅	825	5000 ₁₀	775
	60	5350	875	4900	825	4400	775	4000	700	6900	875	6500	825	5950 ₅	775	5100 ₁₅	700
240x45	10	6450	1325	6000	1275	5450	1225	5050	1150	8150	1325	7550	1275	6850 ₅	1225	5850 ₁₀	1150
	20	6450	1300	6000	1250	5450	1175	5050	1100	8150	1300	7550	1250	6850 ₅	1175	5950 ₁₅	1100
	40	6450	1225	6000	1175	5450	1075	5050	1000	8150	1225	7550	1175	6850 ₁₀	1075	6050 ₂₀	1000
	60	6250	1175	5850	1100	5200	1000	4800	925	7850	1175	7400	1100	6800 ₁₅	1000	6200 ₂₅	925
300x45	10	7650	1875	7100	1825	6450	1675	6000	1450	9600	1875	8950	1825	8100 ₁₅	1675	7400 ₂₅	1450
	20	7650	1825	7100	1750	6450	1625	6000	1425	9600	1825	8950	1750	8100 ₂₀	1625	7500 ₃₀	1425
	40	7650	1700	7100	1625	6450	1475	6000	1375	9600	1700	8950 ₅	1625	8100 ₂₀	1475	7550 ₃₅	1375
	60	7300	1625	6900	1525	6350	1375	5950	1250	9150	1625	8650 ₅	1525	7950 ₂₅	1375	7500 ₄₀	1250
360x45	10	8750	2450	8150	2350	7400	1925	6850	1675	11050	2450	10250 ₅	2350	9250 ₂₅	1925	8650 ₄₀	1675
	20	8750	2350	8150	2250	7400	1900	6850	1650	11050	2350	10250 ₁₀	2250	9250 ₂₅	1900	8650 ₄₀	1650
	40	8750	2200	8150	2075	7400	1850	6850	1600	11050 ₅	2200	10250 ₁₅	2075	9250 ₃₀	1850	8650 ₅₀	1600
	60	8250	2075	7800	1925	7200	1725	6800	1550	10350	2075	9850 ₁₅	1925	9050 ₃₅	1725	8550 ₅₅	1550
400x45	10	9500	2825	8850	2550	8000	2100	7450	1825	11950	2825	11100 ₁₀	2550	10050 ₃₀	2100	9350 ₄₅	1825
	20	9500	2725	8850	2525	8000	2075	7450	1800	11950 ₅	2725	11100 ₁₅	2525	10050 ₃₀	2075	9350 ₅₀	1800
	40	9400	2525	8850	2375	8000	2000	7450	1750	11850 ₅	2525	11100 ₂₀	2375	10050 ₃₅	2000	9350 ₅₅	1750
	60	8850	2375	8400	2200	7750	1950	7300 ₁₀	1700	11100 ₅	2375	10550 ₂₀	2200	9750 ₄₀	1950	9200 ₆₀	1700
90x63	10	2800	350	2800	350	2450	325	2200	325	4150	350	3700	350	2950	325	2400	325
	20	2800	350	2800	350	2450	325	2200	325	4150	350	3750	350	2950	325	2450	325
	40	2800	350	2800	325	2450	325	2200	300	4150	350	3800	325	3050	325	2500	300
	60	2750	325	2550	325	2250	300	2050	300	3750	325	3450	325	3050	300	2550	300
130x63	10	4400	700	4000	675	3500	650	3200	625	5600	700	5200	675	4350	650	3650	625
	20	4400	675	4000	675	3500	650	3200	600	5600	675	5200	675	4400	650	3700	600
	40	4350	675	4000	650	3500	600	3200	575	5600	675	5200	650	4500	600	3750	575
	60	3900	650	3600	625	3200	575	2900	550	5300	650	4900	625	4350	575	3850	550

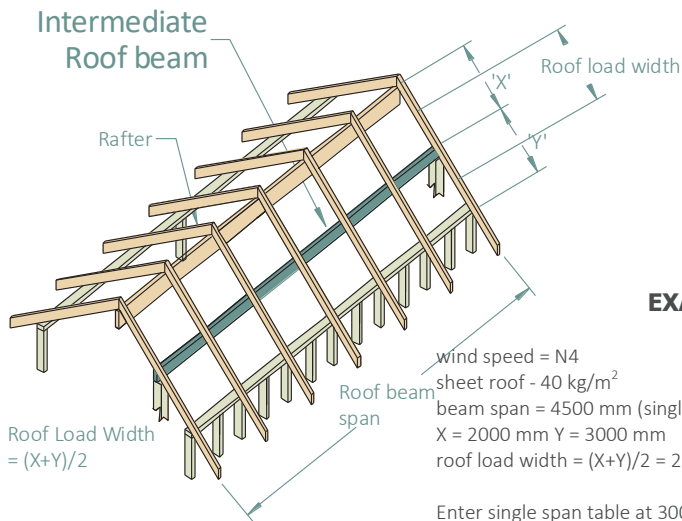
Single/continuous span roof rafter - without ceiling attached AS 4055 classification C1 - C3 (Cont'd)

Rafter spacing (mm)		450		600		900		1200		450		600		900		1200	
Member size DxB (mm)	Roof mass (kg/m ²)	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H
		Maximum recommended single span (mm)								Maximum recommended continuous span (mm)							
150x63	10	4950	900	4600	875	4050	850	3700	800	6200	900	5800	875	5050	850	4250	800
	20	4950	875	4600	850	4050	800	3700	775	6200	875	5800	850	5100	800	4300	775
	40	4950	850	4600	825	4050	775	3700	725	6200	850	5800	825	5200	775	4400	725
170x63	60	4450	825	4100	775	3650	725	3350	675	6050	825	5600	775	5000	725	4500	675
	10	5450	1100	5050	1075	4550	1025	4150	975	6850	1100	6350	1075	5750	1025	4850	975
	20	5450	1075	5050	1050	4550	1000	4150	950	6850	1075	6350	1050	5750	1000	4950	950
200x63	40	5450	1025	5050	1000	4550	925	4150	875	6850	1025	6350	1000	5750	925	5050	875
	60	5000	1000	4650	950	4150	875	3800	800	6600	1000	6200	950	5600	875	5150	800
	10	6150	1450	5700	1400	5150	1325	4800	1225	7700	1450	7200	1400	6500	1325	5800	1225
240x63	20	6150	1400	5700	1350	5150	1275	4800	1200	7700	1400	7200	1350	6500	1275	5850	1200
	40	6150	1325	5700	1275	5150	1175	4800	1100	7700	1325	7200	1275	6500	1175	6000	1100
	60	5800	1275	5400	1200	4850	1100	4450	1000	7350	1275	6950	1200	6400	1100	6000 ₅	1000
300x63	10	7050	1900	6550	1825	5900	1625	5500	1425	8850	1900	8250	1825	7450	1625	6900 ₅	1425
	20	7050	1825	6550	1775	5900	1600	5500	1400	8850	1825	8250	1775	7450	1600	6900 ₅	1400
	40	7050	1725	6550	1650	5900	1500	5500	1350	8850	1725	8250	1650	7450	1500	6900 ₁₀	1350
360x63	60	6650	1650	6300	1550	5750	1400	5300	1275	8350	1650	7900	1550	7300	1400	6850 ₁₀	1275
	10	8300	2600	7750	2375	7000	1950	6500	1700	10450	2600	9750	2375	8800	1950	8200 ₁₅	1700
	20	8300	2500	7750	2325	7000	1925	6500	1675	10450	2500	9750	2325	8800 ₅	1925	8200 ₁₅	1675
400x63	40	8200	2325	7750	2200	7000	1875	6500	1625	10350	2325	9750	2200	8800 ₅	1875	8200 ₂₀	1625
	60	7700	2200	7350	2050	6800	1800	6400	1575	9700	2200	9250	2050	8550 ₁₀	1800	8050 ₂₀	1575
	10	9550	3125	8900	2750	8000	2275	7450	1975	12000	3125	11150	2750	10100 ₁₀	2275	9400 ₂₀	1975
450x63	20	9550	3075	8900	2700	8000	2225	7450	1950	12000	3075	11150	2700	10100 ₁₀	2225	9400 ₂₅	1950
	40	9250	2925	8850	2625	8000	2175	7450	1875	11600	2925	11150	2625	10100 ₁₅	2175	9400 ₃₀	1875
	60	8700	2750	8300	2550	7700	2100	7300	1825	10950	2750	10450	2550	9700 ₁₅	2100	9150 ₃₀	1825
300x75	10	10300	3350	9600	2975	8700	2475	8100	2150	12000	3400	12000	2975	10900 ₁₅	2475	10150 ₂₅	2150
	20	10300	3350	9600	2950	8700	2425	8100	2125	12000	3350	12000	2950	10900 ₁₅	2425	10150 ₃₀	2125
	40	9850	3250	9500	2850	8700	2350	8100	2050	12000	3250	11950 ₅	2850	10900 ₂₀	2350	10150 ₃₅	2050
400x75	60	9350	3075	8900	2775	8300	2300	7850	2000	11750	3075	11200 ₅	2775	10450 ₂₀	2300	9850 ₃₅	2000
	10	11300	3725	10500	3275	9500	2725	8800	2375	12000	3725	12000	3275	11900 ₂₀	2725	11100 ₃₅	2375
	20	11300	3650	10500	3225	9500	2675	8800	2350	12000	3650	12000	3225	11900 ₂₅	2675	11100 ₃₅	2350
400x75	40	10600	3450	10250	3125	9500	2600	8800	2275	12000	3550	12000 ₅	3125	11900 ₂₅	2600	11100 ₄₀	2275
	60	10050	3300	9650	3025	9000	2525	8500	2200	12000	3450	12000 ₅	3025	11300 ₂₅	2525	10700 ₄₅	2200
300x75	10	8700	2850	8100	2575	7300	2125	6800	1850	10950	2925	10150	2575	9200	2125	8550 ₅	1850
	20	8700	2850	8100	2525	7300	2100	6800	1825	10950	2875	10150	2525	9200	2100	8550 ₁₀	1825
	40	8400	2675	8100	2450	7300	2025	6800	1775	10600	2675	10150	2450	9200	2025	8550 ₁₀	1775
400x75	60	7950	2525	7550	2375	7050	1975	6650	1725	10000	2525	9500	2375	8850	1975	8350 ₁₅	1725
	10	10800	3550	10050	3225	9050	2675	8450	2350	12000	3650	12000	3225	11400 ₅	2675	10600 ₂₀	2350
	20	10750	3500	10050	3175	9050	2650	8450	2300	12000	3600	12000	3175	11400 ₁₀	2650	10600 ₂₀	2300
400x75	40	10050	3300	9700	3075	9050	2550	8450	2225	12000	3500	12000	3075	11400 ₁₅	2550	10600 ₂₅	2225
	60	9550	3150	9150	3000	8550	2475	8100	2175	12000	3400	11550	3000	10750 ₁₅	2475	10200 ₂₅	2175

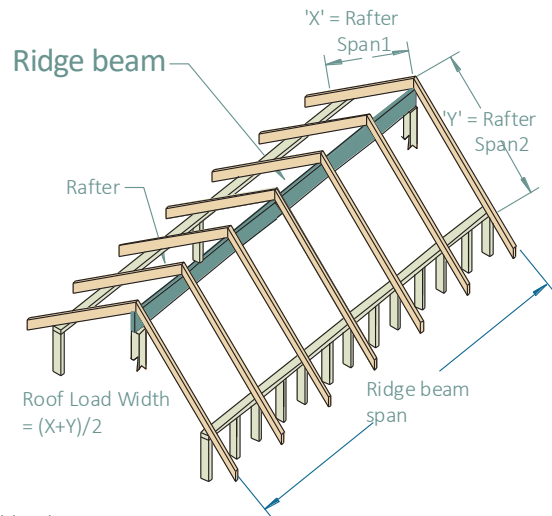
NOTES:

1. D = member depth, B = member breadth, NS = not suitable.
2. The above table was based on a batten spacing of 900 mm
3. Maximum birdsmouth depth = 30 % of rafter depth
4. End bearing lengths = 35 mm at end supports and 42 mm at internal supports for continuous members. Subscript values indicate the minimum additional bearing length where required to be greater than 35 mm at end supports and 42 mm at internal supports
5. Construction loads shall not be applied to overhangs until a 190 x 19 (minimum) timber fascia or other fascia of equivalent stiffness is rigidly and permanently attached to the end of rafter overhangs
6. Max rafter spacing up to 1200 mm
7. Not all sizes of SmartLVL in this table are stocked in each state. Please check with your supplier before ordering

Single span ridge/intermediate roof beam AS 4055 classification N1 - N4



EXAMPLE:



ADOPT:

SmartLVL 13 - 2/240x45

Roof load width (mm)		1500		3000		4500		6000		7500	
Member size DxB (mm)	Roof mass (kg/m ²)	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H
Maximum recommended Ridge or Intermediate roof beam span - Single span (mm)											
2/90x45	40	2400	850	1900	850	1600	750	1500	650	1300	600
	90	1900	850	1500	700	1300	600	1200	600	1100	500
2/130x45	40	3500	1300	2800	1300	2400	1100	2100	950	1900	850
	90	2800	1300	2200	1100	1900	900	1700	800	1600	800
2/150x45	40	4000	1500	3200	1500	2800	1250	2500	1100	2200	1000
	90	3200	1500	2500	1200	2200	1100	2000	1000	1800	900
2/170x45	40	4600	1700	3600	1700	3100	1450	2800	1250	2500	1100
	90	3600	1700	2900	1400	2500	1200	2200	1100	2000	1000
2/200x45	40	5300	1950	4300	1950	3700	1700	3300	1450	3000	1300
	90	4200	1950	3400	1700	2900	1400	2600	1300	2400	1200
2/240x45	40	6200	2350	5100	2250	4400	2050	3900	1750	3600	1600
	90	5100	2350	4000	1950	3500	1750	3200	1600	2900	1400
2/300x45	40	7300	2950	6200	2700	5500	2400	4900	2200	4500	2000
	90	6200	2750	5000	2350	4400	2100	4000	1950	3600	1800
2/360x45	40	8300	3500	7100	3100	6400	2800	5900	2550	5400	2400
	90	7100	3200	6000	2700	5300	2400	4700	2250	4400	2100
2/400x45	40	8900	3900	7700	3350	6900	3000	6400	2800	6000	2600
	90	7600	3450	6500	2900	5800	2600	5300	2400	4900	2300
90x63	40	2200	750	1700	750	1500	650	1300	550	1200	500
	90	1700	750	1300	600	1100	500	1000	500	NS	NS
130x63	40	3200	1150	2500	1150	2100	900	1900	800	1700	700
	90	2500	1150	1900	900	1700	800	1500	700	1400	700
150x63	40	3600	1350	2900	1300	2400	1050	2200	950	2000	850
	90	2800	1350	2200	1100	1900	900	1700	800	1600	800
170x63	40	4100	1500	3200	1450	2800	1200	2500	1050	2300	950
	90	3200	1500	2500	1200	2200	1100	2000	1000	1800	900
200x63	40	4800	1750	3800	1750	3300	1400	2900	1250	2700	1100
	90	3800	1750	3000	1500	2600	1300	2300	1100	2100	1000
240x63	40	5700	2100	4600	2050	3900	1700	3500	1500	3200	1350
	90	4500	2100	3600	1800	3100	1500	2800	1400	2600	1300

Single span ridge/intermediate roof beam AS 4055 classification N1 - N4 [Cont'd]

Roof load width (mm)		1500		3000		4500		6000		7500	
Member size DxB (mm)	Roof mass (kg/m ²)	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H
		Maximum recommended Ridge or Intermediate roof beam - Single span (mm)									
300x63	40	6800	2600	5700	2450	4900	2150	4400	1850	4000	1650
	90	5600	2550	4500	2150	3900	1900	3500	1750	3200	1600
360x63	40	7700	3150	6600	2850	5900	2550	5300	2200	4800	2000
	90	6500	2900	5400	2450	4700	2200	4200	2050	3900	1900
400x63	40	8300	3450	7100	3100	6400	2750	5800	2450	5300	2200
	90	7100	3150	6000	2650	5200	2400	4700	2200	4300	2100
450x63	40	9000	3900	7700	3400	6900	3050	6400	2750	6000	2500
	90	7700	3450	6500	2900	5800	2650	5300	2450	4900	2300
300x75	40	7000	2750	6000	2600	5200	2300	4600	2000	4200	1800
	90	6000	2650	4800	2250	4100	2000	3700	1850	3400	1700
400x75	40	8600	3650	7400	3200	6600	2900	6100	2650	5600	2400
	90	7300	3300	6200	2800	5500	2500	5000	2300	4600	2200

Continuous span ridge/intermediate roof beam AS 4055 classification N1 - N4

Roof load width (mm)		1500		3000		4500		6000		7500	
Member size DxB (mm)	Roof mass (kg/m ²)	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H
		Maximum Ridge or Intermediate roof beam - Continuous span (mm)									
2/90x45	40	3200	850	2500	850	2100	750	1900	650	1700	600
	90	2500	850	2000	850	1700	750	1500	650	1400	600
2/130x45	40	4600	1300	3600	1300	3100	1100	2800	950	2500	850
	90	3600	1300	2900	1200	2500	1100	2200	1000	2000	900
2/150x45	40	5300	1500	4200	1500	3600	1250	3200	1100	2900	1000
	90	4200	1500	3300	1350	2900	1200	2600	1150	2400	1050
2/170x45	40	5900	1700	4700	1700	4100	1450	3600	1250	3300	1100
	90	4700	1700	3700	1500	3200	1350	2900	1250	2700	1150
2/200x45	40	6700	1950	5500	1950	4800	1700	4300	1450	3900	1300
	90	5500	1950	4400	1700	3800	1550	3400	1400	3200	1300
2/240x45	40	7600	2350	6500	2250	5700	2050	5100	1750	4700	1600
	90	6400	2350	5300	1950	4600	1750	4100	1650	3800	1550
2/300x45	40	8900	2950	7600	2700	6800	2400	6300	2200	5900	2000
	90	7500	2750	6400	2350	5700	2100	5200	1950	4700 ₁₀	1800
2/360x45	40	10100	3500	8700	3100	7800	2800	7200	2550	6700	2400
	90	8600	3200	7300	2700	6600	2400	6100 ₁₅	2250	5700 ₃₅	2100 ₃₅
2/400x45	40	10800	3900	9300	3350	8400	3000	7800	2800	7300	2600
	90	9300	3450	7900	2900	7200	2600	6600 ₂₀	2400	6200 ₅₅	2300 ₅₅
90x63	40	2900	750	2200	750	1900	650	1700	550	1500	500
	90	2200	750	1700	750	1500	650	1300	600	1200	550
130x63	40	4100	1150	3200	1150	2800	900	2500	800	2200	700
	90	3200	1150	2500	1100	2200	950	2000	850	1800	750
150x63	40	4700	1350	3700	1300	3200	1050	2900	950	2600	850
	90	3700	1350	2900	1250	2500	1100	2300	950	2100	850
170x63	40	5300	1500	4200	1450	3600	1200	3200	1050	3000	950
	90	4200	1500	3300	1350	2900	1250	2600	1100	2400	1000
200x63	40	6200	1750	5000	1750	4300	1400	3800	1250	3500	1100
	90	4900	1750	3900	1550	3400	1400	3000	1300	2800	1150

Continuous span ridge/intermediate roof beam AS 4055 classification N1 - N4 [Cont'd]

Roof load width (mm)		1500		3000		4500		6000		7500	
Member size DxB (mm)	Roof mass (kg/m ²)	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H
		Maximum Ridge or Intermediate roof beam - Continuous span (mm)									
240x63	40	7000	2100	5900	2050	5100	1700	4600	1500	4200	1350
	90	5900	2100	4700	1800	4100	1600	3700	1500	3400 ₁₀	1400
300x63	40	8300	2600	7000	2450	6300	2150	5700	1850	5200	1650
	90	7000	2550	5900	2150	5100	1900	4600 ₂₀	1750	4200 ₄₀	1650 ₄₀
360x63	40	9400	3150	8000	2850	7200	2550	6600	2200	6200 ₁₀	2000
	90	8000	2900	6700	2450	6100 ₁₅	2200	5500 ₄₅	2050 ₄₅	5100 ₈₀	1900 ₈₀
400x63	40	10100	3450	8600	3100	7800	2750	7200	2450	6700 ₂₀	2200
	90	8600	3150	7300	2650	6600 ₂₅	2400 ₂₅	6100 ₇₀	2200 ₇₀	5600 ₁₀₀	2100 ₁₀₀
450x63	40	11000	3900	9400	3400	8500	3050	7800 ₅	2750	7300 ₃₀	2500
	90	9400	3450	8000	2900	7200 ₄₀	2650 ₄₀	6600 ₈₅	2450 ₈₅	6200 ₁₂₀	2300 ₁₂₀
300x75	40	8600	2750	7300	2600	6500	2300	6000	2000	5500	1800
	90	7200	2650	6100	2250	5400	2000	4900 ₅	1850	4500 ₂₅	1750
400x75	40	10500	3650	9000	3200	8100	2900	7500	2650	7000 ₅	2400
	90	8900	3300	7600	2800	6800 ₁₀	2500	6300 ₄₀	2300 ₄₀	6000 ₈₀	2200 ₈₀

Single span ridge/intermediate roof beam AS 4055 classification C1 - C3

Roof load width (mm)		1500		3000		4500		6000		7500	
Member size DxB (mm)	Roof mass (kg/m ²)	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H
		Maximum recommended ridge/intermediate roof beam - Single span (mm)									
2/90x45	40	2400	850	1900	750	1600	600	1500	550	1300	500
	90	1900	850	1500	700	1300	650	1200	550	1100	500
2/130x45	40	3500	1300	2800	1100	2400	900	2100	800	1900	700
	90	2800	1300	2200	1100	1900	900	1700	800	1600	700
2/150x45	40	4000	1500	3200	1250	2800	1050	2500	900	2200	800
	90	3200	1500	2500	1200	2200	1050	2000	900	1800	850
2/170x45	40	4600	1700	3600	1450	3100	1150	2800	1000	2500	900
	90	3600	1700	2900	1400	2500	1200	2200	1050	2000	950
2/200x45	40	5300	1950	4300	1700	3700	1400	3300	1200	3000	1050
	90	4200	1950	3400	1700	2900	1400	2600	1250	2400	1100
2/240x45	40	6200	2350	5100	2000	4400	1650	3900	1450	3600	1300
	90	5100	2350	4000	1950	3500	1700	3200	1500	2900	1300
2/300x45	40	7300	2950	6200	2550	5500	2050	4900	1800	4500	1600
	90	6200	2750	5000	2350	4400	2100	4000	1850	3600	1650
2/360x45	40	8300	3500	7100	3050	6400	2500	5900	2150	5400	1900
	90	7100	3200	6000	2700	5300	2400	4700	2200	4400	2000
2/400x45	40	8900	3900	7700	3350	6900	2750	6400	2400	6000	2150
	90	7600	3450	6500	2900	5800	2600	5300	2400	4900	2200
90x63	40	2100	750	1700	650	1400	500	1200	450	1100	400
	90	1700	750	1300	650	1100	550	1000	450	NS	NS
130x63	40	3100	1150	2400	900	2100	750	1800	650	1600	600
	90	2500	1150	1900	950	1700	750	1500	650	1400	600
150x63	40	3600	1350	2800	1050	2400	850	2100	750	1900	650
	90	2800	1350	2200	1100	1900	900	1700	800	1600	700
170x63	40	4000	1500	3200	1200	2800	1000	2400	850	2200	750
	90	3200	1500	2500	1250	2200	1000	2000	900	1800	800
200x63	40	4800	1750	3800	1400	3300	1150	2800	1000	2500	900
	90	3800	1750	3000	1450	2600	1200	2300	1050	2100	900
240x63	40	5700	2100	4500	1700	3900	1400	3400	1200	3100	1100
	90	4500	2100	3600	1750	3100	1400	2800	1250	2600	1100

Single span ridge/intermediate roof beam AS 4055 classification C1 - C3 (Cont'd)

Roof load width (mm)		1500		3000		4500		6000		7500	
Member size DxB (mm)	Roof mass (kg/m ²)	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H
		Maximum recommended ridge/Intermediate roof beam - Single span (mm)									
300x63	40	6800	2600	5700	2100	4900	1750	4300	1500	3800	1350
	90	5600	2550	4500	2150	3900	1800	3500	1550	3200	1400
360x63	40	7700	3150	6600	2550	5900	2050	5100	1800	4600 ₅	1600
	90	6500	2900	5400	2450	4700	2150	4200	1850	3900 ₅	1650
400x63	40	8300	3450	7100	2800	6400	2300	5700 ₅	2000	5100 ₁₅	1800
	90	7100	3150	6000	2650	5200	2350	4700	2050	4300 ₁₅	1850 ₁₅
450x63	40	9000	3900	7700	3200	6900	2600	6400 ₁₅	2250	5800 ₂₅	2000
	90	7700	3450	6500	2900	5800	2650	5300 ₁₀	2300 ₁₀	4900 ₂₅	2050 ₂₅
300x75	40	7000	2750	6000	2300	5200	1900	4600	1650	4200	1450
	90	6000	2650	4800	2250	4100	1950	3700	1700	3400	1500
400x75	40	8600	3650	7400	3100	6600	2500	6100	2200	5600 ₅	1950
	90	7300	3300	6200	2800	5500	2500	5000	2250	4600 ₅	2000 ₅

Continuous span ridge/intermediate roof beam AS 4055 classification C1 - C3

Roof Load width (mm)		1500		3000		4500		6000		7500	
Member size DxB (mm)	Roof mass (kg/m ²)	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H
		Maximum recommended ridge/Intermediate roof beam - Continuous span (mm)									
2/90x45	40	3100	850	2100	750	1700	600	1500	550	1400	500
	90	2500	850	2000	800	1700	650	1500	550	1400	500
2/130x45	40	4500	1300	3100	1100	2500	900	2200	800	2000	700
	90	3600	1300	2900	1150	2500	900	2200	800	2000	700
2/150x45	40	5200	1500	3600	1250	3000	1050	2600	900	2300	800
	90	4200	1500	3300	1300	2900	1050	2600	900	2300	850
2/170x45	40	5900	1700	4100	1450	3400	1150	2900	1000	2600	900
	90	4700	1700	3700	1500	3200	1200	2900	1050	2600	950
2/200x45	40	6700	1950	4800	1700	3900	1400	3400	1200	3100	1050
	90	5500	1950	4400	1700	3800	1400	3400	1250	3100	1100
2/240x45	40	7600	2350	5800	2000	4700	1650	4100	1450	3700 ₅	1300
	90	6400	2350	5300	1950	4600	1700	4100 ₅	1500	3700 ₂₀	1300
2/300x45	40	8900	2950	7400	2550	5900	2050	5100 ₁₅	1800	4600 ₃₀	1600
	90	7500	2750	6400	2350	5700 ₁₀	2100	5200 ₃₅	1850	4700 ₆₅	1650
2/360x45	40	10100	3500	8700	3050	7100 ₁₅	2500	6200 ₃₅	2150	5500 ₆₅	1900
	90	8600	3200	7300	2700	6600 ₂₅	2400	6100 ₇₅	2200	5600 ₉₅	2000
2/400x45	40	10800	3900	9300	3350	7900 ₃₀	2750	6900 ₆₅	2400	6200 ₈₅	2150
	90	9300	3450	7900	2900	7200 ₄₀	2600	6600 ₈₅	2400	6200 ₁₁₅	2200
90x63	40	2400	750	1700	650	1400	500	1200	450	1000	400
	90	2200	750	1700	650	1400	550	1200	450	1100	400
130x63	40	3500	1150	2400	900	2000	750	1700	650	1500	600
	90	3200	1150	2500	950	2100	750	1800	650	1600	600
150x63	40	4100	1350	2800	1050	2300	850	2000	750	1800	650
	90	3700	1350	2900	1100	2400	900	2000	800	1800	700
170x63	40	4700	1500	3200	1200	2600	1000	2300	850	2000	750
	90	4200	1500	3300	1250	2700	1000	2300	900	2100	800
200x63	40	5700	1750	3800	1400	3100	1150	2700	1000	2400	900
	90	4900	1750	3900	1450	3200	1200	2700	1050	2400 ₁₅	900

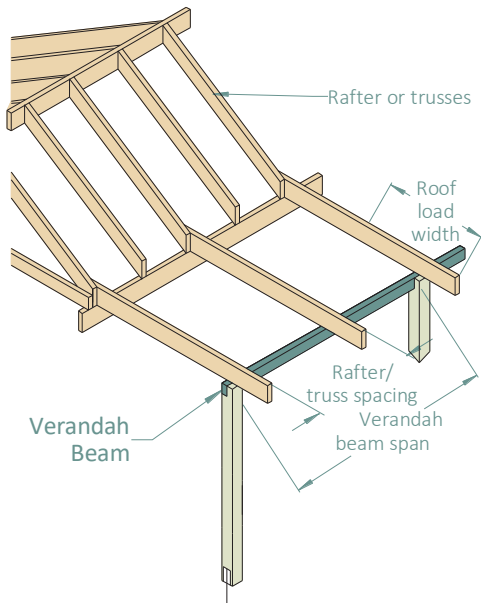
Continuous span ridge/intermediate roof beam AS 4055 classification C1 - C3

Roof Load width (mm)		1500		3000		4500		6000		7500	
Member size DxB (mm)	Roof mass (kg/m ²)	span	O/H	span	O/H	span	O/H	span	O/H	span	O/H
		Maximum recommended ridge/Intermediate roof beam - Continuous span (mm)									
240x63	40	6900	2100	4500	1700	3700	1400	3200	1200	2900 ₁₅	1100
	90	5900	2100	4700	1750	3800 ₅	1400	3300 ₂₀	1250	2900 ₃₅	1100
300x63	40	8300	2600	5700	2100	4600 ₁₀	1750	4000 ₂₅	1500	3600 ₅₀	1350
	90	7000	2550	5900 ₁₀	2150	4800 ₃₀	1800	4100 ₆₅	1550	3700 ₈₅	1400
360x63	40	9400	3150	6900 ₁₀	2550	5600 ₃₀	2050	4800 ₆₅	1800	4300 ₈₅	1600
	90	8000	2900	6700 ₂₅	2450	5700 ₇₀	2150	4900 ₉₅	1850	4400 ₁₁₅	1650
400x63	40	10100	3450	7800 ₂₀	2800	6200 ₅₀	2300	5400 ₈₅	2000	4800 ₁₀₅	1800
	90	8600	3150	7300 ₃₅	2650	6400 ₉₀	2350	5500 ₁₁₅	2050	4900 ₁₄₀	1850 ₁₄₀
450x63	40	11000	3900	8900 ₄₀	3200	7000 ₇₅	2600	6000 ₁₀₅	2250	5400 ₁₃₀	2000
	90	9400	3450	8000 ₅₅	2900	7100 ₁₁₀	2650	6200 ₁₄₀	2300 ₁₄₀	5500 ₁₇₀	2050 ₁₇₀
300x75	40	8500	2750	6200	2300	5100	1900	4400 ₁₅	1650	3900 ₃₀	1450
	90	7200	2650	6100	2250	5200 ₂₀	1950	4500 ₄₀	1700	4000 ₇₀	1500
400x75	40	10500	3650	8600 ₁₅	3100	6800 ₃₅	2500	5900 ₇₀	2200	5300 ₉₀	1950
	90	8900	3300	7600 ₁₅	2800	6800 ₇₅	2500	6000 ₁₀₀	2250	5300 ₁₂₀	2000 ₁₂₀

NOTES:

1. D = member depth, B = member breadth, NS = not suitable.
2. End bearing lengths = 70 mm at end supports and 70 mm at internal supports for continuous members. Subscript values indicate the minimum additional bearing length where required to be greater than 75 mm at end supports and 70 mm at internal supports.
3. rafter spacing up to 1200 mm
4. Not all sizes of SmartLVL in this table are stocked in each state. Please check with your supplier before ordering

Single span Verandah beam AS 4055 classification N1 - N4



EXAMPLE:

wind speed = N4
sheet roof - 40 kg/m²
rafter/truss spacing = 600 mm
verandah span = 3500 mm
roof load width = 3900 mm
Enter span table at 4500 roof load width column, rafter spacing of 600 mm, and read down to a span equal to or greater than 3500 mm in the 40 kg/m² row

ADOPT:

SmartLVL 13 - 300 x45

Roof load width (mm)		1500		3000		4500		6000		7500	
Rafter/truss spacing (mm)		600	1200	600	1200	600	1200	600	1200	600	1200
Member size DxB (mm)	Roof mass (kg/m ²)	Maximum recommended Verandah beam span - Single span (mm)									
90x45	10	2100	1800	1600	1200	1300	NS	1100	NS	NS	NS
	20	2100	1800	1600	1200	1300	NS	1100	NS	NS	NS
	40	1700	1700	1400	1200	1200	NS	1100	NS	1000	NS
	60	1500	1400	1200	1000	1000	NS	NS	NS	NS	NS
	90	1300	1100	1000	NS	NS	NS	NS	NS	NS	NS
130x45	10	3300	3300	2400	2300	1900	1600	1600	1200	1400	NS
	20	3100	3100	2400	2300	1900	1700	1600	1300	1400	NS
	40	2500	2600	2000	2000	1700	1700	1600	1300	1500	1100
	60	2200	2200	1700	1700	1500	1400	1400	1200	1300	1100
	90	1900	1900	1500	1400	1300	1100	1200	1000	1100	NS
150x45	10	3900	3800	2700	2700	2300	2100	1900	1600	1700	1300
	20	3600	3500	2800	2700	2300	2100	1900	1700	1700	1300
	40	2900	2900	2300	2300	2000	2000	1800	1800	1700	1400
	60	2500	2600	2000	2000	1700	1700	1600	1500	1500	1300
	90	2200	2200	1700	1700	1500	1400	1400	1200	1300	1100
170x45	10	4400	4200	3100	3000	2600	2500	2200	2100	1900	1700
	20	4000	4000	3200	3000	2600	2500	2200	2100	1900	1700
	40	3300	3200	2600	2700	2300	2300	2100	2000	1900	1800
	60	2900	2900	2300	2300	2000	2000	1800	1800	1700	1600
	90	2500	2600	2000	2000	1700	1700	1600	1500	1500	1300
200x45	10	5100	5100	3700	3600	3000	2900	2600	2500	2400	2200
	20	4500	4500	3800	3600	3000	2900	2600	2600	2400	2200
	40	3800	3800	3100	3000	2700	2700	2400	2500	2300	2200
	60	3400	3300	2700	2700	2300	2300	2100	2100	2000	1900
	90	3000	2900	2300	2300	2100	2000	1800	1800	1700	1700
240x45	10	5800	5800	4500	4400	3700	3500	3100	3000	2800	2700
	20	5100	5100	4400	4400	3700	3500	3200	3000	2800	2700
	40	4400	4400	3700	3600	3200	3200	2900	2900	2700	2800
	60	4000	4000	3200	3200	2800	2800	2600	2600	2400	2400
	90	3500	3500	2800	2800	2500	2500	2200	2200	2100	2000
300x45	10	6700	6700	5600	5500	4600	4500	3900	3800	3500	3400
	20	6000	6000	5200	5200	4600	4600	4000	3900	3600	3400
	40	5200	5200	4400	4400	4000	4000	3700	3600	3400	3400
	60	4700	4700	4000	4000	3600	3500	3200	3200	3000	3000 ₅
	90	4300	4300	3600	3500	3100	3100	2800	2800	2600	2600 ₅

Single span Verandah beam AS 4055 classification N1 - N4 (Cont'd)

Roof load width (mm)		1500		3000		4500		6000		7500	
Rafter/truss spacing (mm)		600	1200	600	1200	600	1200	600	1200	600	1200
Member size DxB (mm)	Roof mass (kg/m ²)	Maximum recommended Verandah beam span - Single span (mm)									
360x45	10	7600	7600	6700	6700	5500	5400	4800	4800	4200	4100 ₁₀
	20	6800	6800	5900	5900	5400	5400	4800	4800 ₅	4300	4200 ₁₅
	40	5900	5900	5100	5100	4600	4600	4300	4300	4100 ₅	4100
	60	5400	5400	4600	4600	4200	4200	3900	3800	3600 ₁₀	3600
	90	4900	4900	4200	4200	3700	3700	3400	3300	3100	3100 ₁₅
400x45	10	8100	8100	7300	7300	6100	6000	5300	5200	4700	4700 ₅
	20	7300	7300	6400	6400	5900	5800	5400	5300 ₅	4800	4800 ₂₅
	40	6400	6400	5500	5500	5000	5000	4700	4600	4400 ₁₀	4400 ₂₀
	60	5800	5800	5000	5000	4500	4500	4200	4200	4000 ₁₀	4000 ₅
	90	5300	5300	4500	4500	4100	4100	3800	3700	3500	3500 ₁₀
90x63	10	2400	2700	1900	1700	1500	1100	1300	NS	1200	NS
	20	2400	2500	1900	1700	1500	1100	1300	NS	1200	NS
	40	1900	1900	1500	1400	1400	1100	1200	NS	1100	NS
	60	1700	1600	1400	1100	1200	NS	1000	NS	NS	NS
	90	1500	1300	1200	NS	1000	NS	NS	NS	NS	NS
130x63	10	3900	3700	2800	2700	2300	2200	1900	1700	1700	1400
	20	3400	3400	2800	2800	2300	2200	2000	1800	1700	1400
	40	2800	2800	2200	2200	1900	1900	1700	1700	1600	1500
	60	2400	2500	1900	1900	1700	1600	1500	1400	1400	1300
	90	2100	2100	1700	1600	1500	1300	1400	1100	1200	1000
150x63	10	4300	4200	3300	3100	2700	2600	2300	2200	2000	1800
	20	3900	3900	3200	3200	2700	2600	2300	2200	2100	1900
	40	3200	3200	2600	2600	2200	2200	2000	2000	1900	1900
	60	2800	2800	2200	2200	2000	1900	1800	1800	1600	1600
	90	2500	2500	2000	1900	1700	1700	1500	1400	1400	1300
170x63	10	4900	4900	3800	3600	3000	2900	2600	2600	2300	2200
	20	4300	4300	3600	3600	3100	2900	2600	2600	2400	2200
	40	3600	3600	2900	2900	2600	2600	2300	2300	2200	2100
	60	3200	3200	2600	2600	2200	2200	2000	2000	1900	1900
	90	2800	2800	2200	2200	1900	1900	1700	1700	1600	1500
200x63	10	5400	5400	4400	4300	3600	3400	3100	3000	2700	2700
	20	4800	4800	4200	4200	3700	3500	3100	3000	2800	2700
	40	4200	4200	3400	3400	3000	3000	2700	2800	2500	2600
	60	3700	3700	3000	3000	2600	2700	2400	2400	2200	2200
	90	3300	3300	2600	2700	2300	2300	2100	2000	1900	1900
240x63	10	6100	6100	5300	5200	4300	4200	3700	3600	3300	3200
	20	5500	5400	4700	4700	4300	4300	3800	3600	3400	3200
	40	4700	4700	4100	4000	3600	3600	3300	3200	3000	3000
	60	4300	4300	3600	3600	3200	3100	2900	2900	2700	2700
	90	4000	3900	3200	3100	2800	2800	2500	2500	2300	2300
300x63	10	7100	7100	6400	6300	5400	5300	4700	4700	4200	4100
	20	6400	6300	5600	5600	5100	5100	4800	4700	4200	4100
	40	5600	5600	4800	4800	4400	4300	4100	4100	3800	3800
	60	5100	5100	4400	4300	4000	3900	3600	3600	3400	3300
	90	4700	4600	4000	3900	3500	3400	3200	3100	2900	2900
360x63	10	7900	7900	7200	7200	6500	6400	5600	5500	5000	5000
	20	7200	7200	6300	6300	5800	5800	5500	5500	5100	5100
	40	6300	6300	5500	5500	5000	5000	4700	4600	4400	4400
	60	5800	5800	5000	5000	4500	4500	4200	4200	4000	4000
	90	5300	5300	4500	4500	4100	4100	3800	3800	3500	3500
400x63	10	8500	8400	7700	7700	7200	7200	6300	6200	5600	5500
	20	7700	7700	6800	6800	6300	6300	5900	5900	5600	5600
	40	6800	6800	5900	5900	5400	5400	5000	5000	4800	4800 ₅
	60	6300	6300	5400	5400	4900	4900	4600	4600	4300	4300
	90	5800	5700	4900	4900	4400	4400	4100	4100	3900	3900
300x75	10	7200	7200	6500	6500	5900	5800	5100	5100	4600	4500
	20	6500	6500	5800	5700	5300	5300	5000	5000	4600	4600
	40	5800	5700	5000	5000	4500	4500	4200	4200	4000	4000
	60	5300	5300	4500	4500	4100	4100	3800	3800	3600	3500
	90	4800	4800	4100	4100	3700	3600	3400	3300	3100	3100
400x75	10	8600	8600	7900	7900	7400	7400	6800	6800	6100	6000
	20	7900	7900	7100	7000	6500	6500	6100	6100	5800	5800
	40	7000	7000	6100	6100	5600	5600	5200	5300	5000	5000
	60	6500	6500	5600	5600	5100	5100	4800	4700	4500	4500
	90	6000	6000	5100	5100	4700	4600	4300	4300	4100	4100

Continuous span Verandah beam AS 4055 classification N1 - N4

Roof load width (mm)		1500		3000		4500		6000		7500	
Rafter/truss spacing (mm)		600	1200	600	1200	600	1200	600	1200	600	1200
Member size DxB (mm)	Roof mass (kg/m ²)	Maximum recommended Verandah beam span - Continuous span (mm)									
90x45	10	2400	2500	1600	1600	1400	1100	1100	NS	NS	NS
	20	2400	2500	1600	1600	1400	1100	1100	NS	NS	NS
	40	2300	2300	1700	1700	1400	1100	1300	NS	1000	NS
	60	2100	2000	1600	1500	1400	1100	1300	NS	1000	NS
	90	1800	1800	1400	1200	1200	NS	1100	NS	NS	NS
130x45	10	3400	3400	2400	2500	2000	1800	1700	1500	1500	1200
	20	3500	3400	2500	2600	2000	1900	1700	1500	1500	1300
	40	3400	3300	2500	2600	2000	2000	1700	1500	1500	1400
	60	3000	3000	2300	2300	2000	2000	1700	1500	1500	1400
	90	2600	2600	2100	2000	1800	1800	1600	1500	1500	1200
150x45	10	4000	4000	2800	2800	2200	2200	2000	1900	1600	1500
	20	4000	4000	2800	2800	2300	2300	2000	1900	1600	1500
	40	3900	3900	2900	2900	2400	2500	2000	2000	1800	1600
	60	3400	3400	2700	2700	2300	2400	2000	2000	1800 ₅	1600
	90	3000	3000	2400	2400	2100	2000	1900	1600	1600 ₅	1400
170x45	10	4500	4500	3200	3100	2600	2600	2200	2100	2000	1600
	20	4600	4500	3200	3200	2600	2700	2200	2200	2000	1600
	40	4300	4300	3300	3300	2700	2700	2300	2200	2100 ₁₀	2000 ₅
	60	3900	3800	3100	3100	2700	2700	2300 ₅	2200 ₅	2100 ₁₅	2000 ₁₅
	90	3400	3300	2700	2700	2300	2300	2100 ₁₀	2100 ₁₀	2000 ₂₅	1600 ₅
200x45	10	5300	5300	3700	3700	3000	3000	2600	2700	2300 ₅	2100
	20	5400	5400	3800	3700	3100	3100	2700 ₅	2700 ₅	2300 ₁₀	2100 ₅
	40	4800	4800	3900	3900	3200	3100	2800 ₁₅	2800 ₁₅	2400 ₂₅	2600 ₂₅
	60	4400	4400	3600	3600	3200 ₁₀	3100 ₁₀	2800 ₂₀	2800 ₂₅	2400 ₃₀	2600 ₃₅
	90	4000	4000	3200	3100	2800 ₁₀	2800 ₁₀	2500 ₂₅	2500 ₂₅	2300 ₄₀	1700 ₁₅
240x45	10	6400	6400	4500	4500	3700	3600	3200 ₁₅	3100 ₁₀	2800 ₂₀	2800 ₂₅
	20	6400	6400	4600	4500	3700 ₅	3600 ₅	3200 ₂₀	3100 ₁₅	2900 ₃₀	2900 ₃₀
	40	5500	5500	4700	4700	3800 ₁₅	3800 ₁₅	3300 ₃₀	3300 ₃₀	2900 ₄₅	2900 ₄₅
	60	5000	5100	4300	4200	3800 ₂₅	3700 ₂₅	3300 ₄₀	3200 ₄₀	2900 ₅₅	2900 ₅₅
	90	4600	4600	3800	3800	3300 ₂₅	3300 ₂₀	3100 ₄₅	3000 ₄₅	2800 ₇₀	2800 ₇₀
300x45	10	8000	8000	5600 ₅	5600	4600 ₂₀	4500 ₂₀	4000 ₃₅	3900 ₃₅	3600 ₅₀	3200 ₄₀
	20	7300	7400	5700 ₁₀	5700 ₁₀	4700 ₂₅	4600 ₂₅	4000 ₄₀	4000 ₄₀	3600 ₅₅	3300 ₄₅
	40	6400	6500	5500 ₁₅	5600 ₁₅	4800 ₄₀	4700 ₄₀	4100 ₆₀	4100 ₆₀	3700 ₈₅	3600 ₈₅
	60	5900	5900	5000 ₁₅	5000 ₁₅	4600 ₄₅	4600	4100 ₈₅	4100 ₈₅	3700 ₁₀₀	3600 ₁₀₀
	90	5400	5400	4600 ₁₅	4600 ₁₅	4100 ₄₅	4100 ₄₅	3800 ₉₀	3700 ₉₀	3500 ₁₁₀	3200 ₁₀₀
360x45	10	8900	9500	6800 ₂₀	6800 ₂₀	5500 ₄₀	5500 ₄₀	4800 ₅₅	4700 ₅₅	4200 ₈₅	4200 ₈₅
	20	8100	8500	6900 ₂₅	6900 ₂₅	5600 ₅₀	5600 ₅₀	4900 ₈₀	4800 ₇₅	4300 ₉₅	4300 ₉₅
	40	7200	7300	6300 ₂₅	6300 ₂₅	5800 ₇₅	5700 ₇₀	5000 ₁₀₀	5000 ₁₀₀	4500 ₁₂₀	4500 ₁₂₀
	60	6700	6700	5800 ₂₅	5800 ₂₅	5200 ₆₅	5200 ₇₅	4900 ₁₁₀	4900 ₁₁₀	4400 ₁₃₅	4400 ₁₃₅
	90	6200	6200	5200 ₃₀	5200 ₃₀	4700 ₈₀	4700 ₇₅	4400 ₁₁₅	4400 ₁₁₅	4200 ₁₅₀	4100 ₁₅₀
400x45	10	9500	10100	7500 ₃₀	7500 ₃₀	6100 ₅₅	6100 ₅₅	5300 ₈₅	5300 ₈₅	4800 ₁₀₅	4700 ₁₀₀
	20	8600	9100	7600 ₃₅	7600 ₃₅	6200 ₆₅	6200 ₆₅	5400 ₉₅	5400 ₉₅	4800 ₁₁₅	4700 ₁₁₅
	40	7700	7900	6800 ₃₅	6800 ₃₅	6200 ₉₀	6200 ₉₀	5500 ₁₂₀	5500 ₁₁₅	5000 ₁₄₀	4900 ₁₄₀
	60	7100	7300	6200 ₃₅	6200 ₃₅	5600 ₉₀	5700 ₉₀	5300 ₁₂₅	5300 ₁₂₅	4900 ₁₅₅	4900 ₁₅₅
	90	6600	6600	5700 ₄₀	5700 ₄₀	5100 ₉₀	5100 ₉₀	4800 ₁₃₀	4800 ₁₃₀	4500 ₁₆₅	4500 ₁₆₅
90x63	10	2800	2800	2000	1900	1600	1600	1400	1100	1300	NS
	20	2800	2800	2000	1900	1600	1600	1400	1100	1300	NS
	40	2600	2600	2100	2000	1600	1600	1400	1200	1300	1000
	60	2300	2200	1800	1800	1600	1400	1400	1200	1300	1000
	90	2000	1900	1600	1400	1400	1200	1300	NS	1100	NS
130x63	10	4100	4100	2800	2800	2300	2300	2000	1900	1700	1500
	20	4100	4100	2900	2900	2400	2500	2000	2000	1800	1500
	40	3700	3700	3000	3000	2500	2600	2100	2000	1800	1700
	60	3300	3200	2600	2600	2300	2200	2100	2000	1800	1800
	90	2900	2900	2300	2200	2000	1900	1800	1800	1700	1500
150x63	10	4700	4700	3300	3300	2700	2700	2300	2300	2100	2000
	20	4800	4800	3400	3300	2700	2800	2300	2400	2100	2000
	40	4200	4200	3500	3400	2800	2800	2400	2600	2200	2100
	60	3800	3800	3000	3000	2700	2700	2400	2400	2200	2100
	90	3300	3300	2700	2700	2300	2300	2100	2000	1900	1900

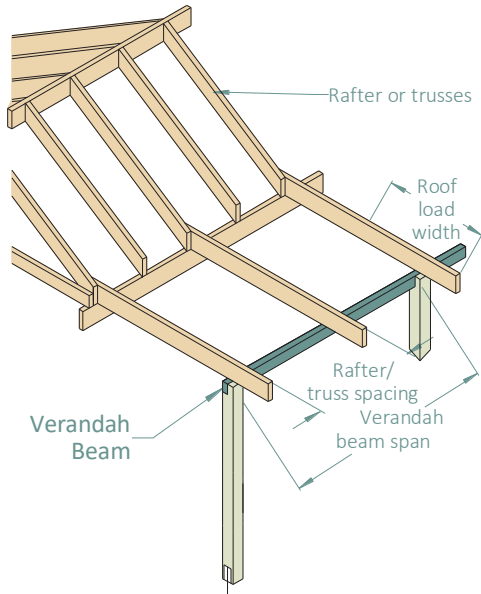
Continuous span Verandah beam AS 4055 classification N1 - N4 (cont'd)

Roof load width (mm)		1500		3000		4500		6000		7500	
Rafter/truss spacing (mm)		600	1200	600	1200	600	1200	600	1200	600	1200
Member size DxB (mm)	Roof mass (kg/m ²)	Maximum recommended Verandah beam span - Continuous span (mm)									
170x63	10	5300	5400	3800	3700	3100	3000	2600	2700	2300	2300
	20	5400	5400	3800	3700	3100	3100	2700	2700	2400	2400
	40	4600	4600	3900	3900	3200	3200	2800	2800	2500	2600
	60	4200	4200	3400	3400	3000	3000	2800	2700	2500	2600 ₅
	90	3800	3800	3000	3000	2600	2600	2400	2400	2200 ₅	2100 ₅
200x63	10	6300	6300	4400	4400	3600	3500	3100	3100	2800	2800
	20	6000	6000	4500	4500	3700	3600	3200	3100	2800	2800
	40	5200	5200	4400	4400	3800	3700	3300	3200	2900 ₁₀	2900 ₁₀
	60	4700	4700	4000	4000	3500	3500	3200 ₅	3200 ₅	2900 ₁₅	2900 ₁₅
	90	4300	4300	3500	3500	3100	3100	2800 ₅	2800 ₅	2600 ₂₀	2600 ₂₀
240x63	10	7400	7600	5300	5300	4300	4300	3800	3700	3400 ₁₀	3300 ₅
	20	6700	6800	5400	5400	4400	4400	3800 ₅	3700 ₅	3400 ₁₅	3300 ₁₀
	40	5900	5900	5100	5100	4600 ₅	4500	3900 ₁₅	3900 ₁₅	3500 ₂₅	3400 ₂₅
	60	5400	5400	4600	4600	4200 ₅	4200 ₅	3900 ₂₀	3900 ₂₀	3500 ₃₅	3400 ₃₀
	90	4900	5000	4200	4200	3700 ₅	3700 ₅	3400 ₂₀	3400 ₂₀	3200 ₃₅	3100 ₃₅
300x63	10	8400	8800	6700	6700	5400 ₅	5400 ₅	4700 ₁₅	4600 ₁₅	4200 ₃₀	4200 ₃₀
	20	7600	7900	6800	6800	5500 ₁₀	5500 ₁₀	4800 ₂₅	4700 ₂₅	4300 ₃₅	4300 ₃₅
	40	6800	6900	6000	6000	5400 ₂₀	5400 ₂₀	4900 ₃₅	4900 ₃₅	4400 ₅₀	4400 ₅₀
	60	6400	6400	5400	5400	4900 ₂₀	5000 ₂₀	4600 ₄₀	4600 ₄₀	4400 ₇₀	4300 ₇₀
	90	5800	5800	4900	5000	4500 ₂₀	4500 ₂₀	4200 ₄₅	4200 ₄₅	3900 ₇₅	3900 ₇₀
360x63	10	9400	9900	8000 ₅	8000 ₅	6500 ₂₀	6500 ₂₀	5600 ₃₅	5600 ₃₅	5000 ₅₀	5000 ₅₀
	20	8500	9000	7600 ₅	7900 ₁₀	6600 ₃₀	6600 ₃₀	5700 ₄₅	5700 ₄₅	5100 ₆₀	5100 ₆₀
	40	7600	7900	6700 ₅	6800 ₅	6200 ₃₀	6200 ₃₀	5800 ₆₅	5800 ₆₅	5300 ₉₀	5300 ₉₀
	60	7100	7200	6200 ₅	6200 ₅	5700 ₃₀	5700 ₃₀	5300 ₆₀	5300 ₆₀	5000 ₉₅	5000 ₉₅
	90	6600	6600	5700 ₅	5700 ₅	5100 ₃₅	5200 ₃₅	4800 ₆₅	4800 ₆₅	4500 ₁₀₀	4500 ₁₀₀
400x63	10	10000	10600	8900 ₁₅	8900 ₁₅	7300 ₃₅	7200 ₃₅	6300 ₅₀	6300 ₅₀	5600 ₇₀	5600 ₇₀
	20	9000	9600	8100 ₁₀	8500 ₁₅	7400 ₄₀	7400 ₄₀	6400 ₆₀	6400 ₆₀	5700 ₈₅	5700 ₈₅
	40	8100	8500	7200 ₁₀	7300 ₁₀	6700 ₄₀	6700 ₄₀	6300 ₈₅	6300 ₈₅	5900 ₁₁₀	5800 ₁₀₅
	60	7600	7800	6700 ₁₀	6700 ₁₀	6100 ₄₀	6100 ₄₀	5700 ₈₅	5700 ₈₅	5400 ₁₁₀	5400 ₁₁₀
	90	7000	7200	6100 ₁₀	6100 ₁₅	5500 ₄₅	5600 ₄₅	5200 ₈₅	5200 ₈₅	4900 ₁₁₀	4900 ₁₁₅
300x75	10	8600	9000	7300	7300	5900	5900	5100 ₁₀	5200 ₁₀	4600 ₂₀	4500 ₂₀
	20	7900	8200	7100	7200	6000 ₅	6000 ₅	5200 ₁₅	5200 ₁₅	4700 ₂₅	4600 ₂₅
	40	7100	7200	6200	6200	5700 ₁₀	5700 ₁₀	5300 ₂₅	5300 ₂₅	4800 ₄₀	4700 ₄₀
	60	6600	6600	5700	5700	5100 ₅	5200 ₁₀	4800 ₂₅	4800 ₂₅	4600 ₄₅	4600 ₄₅
	90	6100	6100	5100	5200	4700 ₁₀	4700 ₁₀	4400 ₃₀	4300 ₃₀	4100 ₅₀	4100 ₄₅
	10	10200	10800	9300 ₅	9700 ₁₀	7900 ₂₅	7900 ₂₅	6900 ₄₀	6900 ₄₀	6100 ₅₅	6100 ₅₅
	20	9200	9900	8300	8800 ₅	7800 ₃₀	8000 ₃₀	7000 ₅₀	6900 ₅₀	6200 ₆₅	6200 ₆₅
	40	8300	8800	7400	7600	6900 ₂₅	7000 ₂₅	6500 ₅₅	6500 ₅₅	6200 ₉₀	6200 ₉₀
	60	7800	8100	6900	7000	6400 ₂₅	6400 ₂₅	6000 ₅₀	6000 ₅₅	5700 ₉₀	5700 ₉₀
	90	7300	7400	6400	6400	5800 ₃₀	5800 ₃₀	5400 ₅₅	5400 ₅₅	5100 ₉₀	5100 ₉₀

NOTES:

1. D = member depth, B = member breadth, NS = not suitable.
2. End bearing lengths = 70 mm at end supports and 70 mm at internal supports for continuous members. Subscript values indicate the minimum additional bearing length where required to be greater than 70 mm at end supports and 70 mm at internal supports
3. Restraint value for slenderness calculations is 1200 mm
4. Not all sizes of SmartLVL in this table are stocked in each state. Please check with your supplier before ordering

Single span Verandah beam AS 4055 classification C1 - C3



EXAMPLE:

wind speed = C3
 sheet roof - 40 kg/m²
 rafter/truss spacing = 600 mm
 verandah span = 3500 mm
 roof load width = 3900 mm
 Enter span table at 4500 roof load width column, rafter spacing of 600 mm, and read down to a span equal to or greater than 3500 mm in the 40 kg/m² row

ADOPT:

SmartLVL 13 - 300x45

Roof load width (mm)		1500		3000		4500		6000		7500	
Rafter/truss spacing (mm)		600	1200	600	1200	600	1200	600	1200	600	1200
Member size DxB (mm)	Roof mass (kg/m ²)	Maximum recommended Verandah beam span - Single span									
90x45	10	1800	1600	1300	NS	1000	NS	NS	NS	NS	NS
	20	1900	1600	1300	NS	1000	NS	NS	NS	NS	NS
	40	1700	1700	1300	NS	1100	NS	NS	NS	NS	NS
	60	1500	1400	1200	NS	1000	NS	NS	NS	NS	NS
	90	1300	1100	1000	NS	NS	NS	NS	NS	NS	NS
130x45	10	2800	2700	1900	1700	1500	1100	1300	NS	1200	NS
	20	2800	2700	1900	1700	1500	1100	1300	NS	1200	NS
	40	2500	2600	2000	1800	1600	1200	1400	NS	1200	NS
	60	2200	2200	1700	1700	1500	1200	1400	NS	1200	NS
	90	1900	1900	1500	1400	1300	1100	1200	NS	1100	NS
150x45	10	3200	3100	2300	2100	1800	1500	1500	NS	1400	NS
	20	3300	3100	2300	2100	1800	1500	1500	NS	1400	NS
	40	2900	2900	2300	2200	1800	1600	1600	1000	1400	NS
	60	2500	2600	2000	2000	1700	1600	1600	1200	1400	NS
	90	2200	2200	1700	1700	1500	1400	1400	1200	1300	NS
170x45	10	3700	3500	2600	2500	2100	1900	1700	1400	1500	NS
	20	3700	3500	2600	2500	2100	1900	1700	1400	1500	NS
	40	3300	3200	2600	2600	2100	2000	1800	1500	1600	NS
	60	2900	2900	2300	2300	2000	2000	1800	1600	1600	1000
	90	2500	2600	2000	2000	1700	1700	1600	1500	1500	NS
200x45	10	4300	4200	3000	2900	2500	2400	2100	1800	1800	1400
	20	4400	4300	3000	2900	2500	2400	2100	2000	1900	1500
	40	3800	3800	3100	3000	2500	2400	2200	2100	1900	1500
	60	3400	3300	2700	2700	2300	2300	2100	2100	1900	1600
	90	3000	2900	2300	2300	2100	2000	1800	1800	1700	1600 ₅
240x45	10	5200	5200	3700	3500	2900	2800	2600	2500	2300	1800
	20	5100	5100	3700	3500	3000	2900	2600	2500	2300	1800
	40	4400	4400	3700	3600	3000	2900	2600	2600	2400	2300
	60	4000	4000	3200	3200	2800	2800	2600	2600 ₅	2400 ₅	2300
	90	3500	3500	2800	2800	2500	2500	2200	2200	2100	2000
300x45	10	6500	6500	4600	4600	3700	3600	3200	3100	2800 ₅	2800 ₅
	20	6000	6000	4600	4600	3800	3600	3200	3100	2900 ₅	2800 ₁₀
	40	5200	5200	4400	4400	3900	3700	3300	3200	2900 ₁₀	2800 ₂₅
	60	4700	4700	4000	4000	3600	3500	3200	3200 ₅	3000 ₁₅	2900 ₃₅
	90	4300	4300	3600	3500	3100	3100	2800	2800 ₂₀	2600 ₁₅	2600 ₃₀

Single span Verandah beam AS 4055 classification C1 - C3 (cont'd)

Roof Load Width (mm)		1500		3000		4500		6000		7500	
Rafter/Truss Spacing (mm)		600	1200	600	1200	600	1200	600	1200	600	1200
Member size DxB	Roof mass (kg/m ²)	Maximum recommended Verandah beam span - Single span									
360x45	10	7600	7600	5500	5400	4500	4400	3900	3700	3500	3300 ₁₀
	20	6800	6800	5600	5500	4500	4500	3900 ₅	3800	3500	3300 ₁₅
	40	5900	5900	5100	5100	4600	4600	4000 ₁₀	3900 ₅	3600 ₃₀	3400 ₁₅
	60	5400	5400	4600	4600	4200	4200 ₁₀	3900 ₁₅	3800 ₁₀	3600 ₃₅	3500 ₂₀
	90	4900	4900	4200	4200	3700	3700	3400	3300 ₁₀	3100 ₂₀	3100 ₄₀
400x45	10	8100	8100	6200	6000	5000	5000 ₅	4300 ₁₀	4200 ₂₅	3900 ₂₀	3700 ₁₀
	20	7300	7300	6200	6100	5100	5000 ₁₀	4400 ₁₀	4300 ₂₅	3900 ₂₀	3700 ₁₅
	40	6400	6400	5500	5500	5000 ₅	5000 ₁₅	4500 ₁₅	4400 ₃₀	4000 ₃₀	3800 ₂₀
	60	5900	5800	5000	5000	4500	4500 ₁₀	4200 ₂₅	4200 ₁₅	4000 ₃₅	3900 ₃₀
	90	5300	5300	4500	4500	4100	4100	3800 ₂₅	3700 ₁₅	3500 ₁₅	3500 ₃₀
90x63	10	2300	2100	1500	1100	1300	NS	1000	NS	NS	NS
	20	2300	2200	1500	1100	1300	NS	1100	NS	NS	NS
	40	1900	1900	1500	1200	1300	NS	1100	NS	NS	NS
	60	1700	1600	1400	1100	1200	NS	1000	NS	NS	NS
	90	1500	1300	1200	NS	1000	NS	NS	NS	NS	NS
130x63	10	3300	3200	2300	2200	1800	1500	1500	1100	1400	NS
	20	3300	3200	2300	2200	1800	1600	1600	1200	1400	NS
	40	2800	2800	2200	2200	1900	1600	1600	1200	1400	NS
	60	2400	2500	1900	1900	1700	1600	1500	1300	1400	NS
	90	2100	2100	1700	1600	1500	1300	1400	1100	1200	NS
150x63	10	3800	3700	2700	2600	2200	2100	1800	1500	1600	1200
	20	3900	3700	2700	2600	2200	2100	1800	1600	1600	1200
	40	3200	3200	2600	2600	2200	2100	1900	1600	1700	1300
	60	2800	2800	2200	2200	2000	1900	1800	1700	1600	1400
	90	2500	2500	2000	1900	1700	1700	1500	1400	1400	1300
170x63	10	4300	4300	3000	2900	2500	2400	2100	2000	1800	1600
	20	4300	4300	3100	2900	2500	2400	2100	2000	1900	1600
	40	3600	3600	2900	2900	2600	2500	2200	2100	1900	1700
	60	3200	3200	2600	2600	2200	2200	2000	2000	1900	1800
	90	2800	2800	2200	2200	1900	1900	1700	1700	1600	1500
200x63	10	5100	5100	3600	3400	2900	2800	2500	2400	2300	2100
	20	4800	4800	3700	3500	2900	2800	2500	2500	2300	2200
	40	4200	4200	3400	3400	3000	2900	2600	2500	2400	2200
	60	3700	3700	3000	3000	2600	2700	2400	2400	2200	2200
	90	3300	3300	2600	2700	2300	2300	2100	2000	1900	1900
240x63	10	6100	6100	4300	4300	3500	3400	3000	2900	2700	2600
	20	5500	5400	4400	4300	3600	3400	3100	2900	2700	2700
	40	4700	4700	4100	4000	3600	3500	3100	3000	2800	2700
	60	4300	4300	3600	3600	3200	3100	2900	2900	2700	2700
	90	4000	3900	3200	3100	2800	2800	2500	2500	2300	2300
300x63	10	7100	7100	5400	5400	4400	4400	3800	3700	3400	3300
	20	6400	6300	5500	5400	4500	4400	3900	3700	3500	3300
	40	5600	5600	4800	4800	4400	4300	3900	3800	3500	3400
	60	5100	5100	4400	4300	4000	3900	3600	3600	3400	3300
	90	4700	4600	4000	3900	3500	3400	3200	3100	2900	2900 ₁₀
360x63	10	7900	7900	6500	6500	5300	5300	4600	4600	4100	4000
	20	7200	7200	6300	6300	5400	5300	4700	4700	4100 ₅	4000
	40	6300	6300	5500	5500	5000	5000	4700	4600	4200 ₁₀	4100 ₂₀
	60	5800	5800	5000	5000	4500	4500	4200	4200 ₅	4000 ₅	4000 ₅
	90	5300	5300	4500	4500	4100	4100	3800	3800	3500 ₁₅	3500
400x63	10	8500	8400	7300	7300	5900	5800	5100	5100 ₅	4600	4600 ₅
	20	7700	7700	6800	6800	6000	5900	5200	5100 ₅	4600	4600 ₁₀
	40	6800	6800	5900	5900	5400	5400	5000 ₅	5000 ₁₀	4700 ₅	4700 ₁₅
	60	6300	6300	5400	5400	4900	4900	4600	4600 ₅	4300 ₁₅	4300 ₂₅
	90	5800	5700	4900	4900	4400	4400	4100	4100	3900 ₁₅	3900 ₅
300x75	10	7200	7200	6000	5900	4900	4800	4200	4100	3700	3600
	20	6500	6500	5800	5700	4900	4900	4200	4100	3800	3600
	40	5800	5700	5000	5000	4500	4500	4200	4200	3900	3700
	60	5300	5300	4500	4500	4100	4100	3800	3800	3600	3500
	90	4800	4800	4100	4100	3700	3600	3400	3300	3100	3100
400x75	10	8600	8600	7900	7900	6500	6400	5600	5500	5000	5000 ₅
	20	7900	7900	7100	7000	6500	6500	5700	5600	5100	5000 ₁₀
	40	7100	7000	6100	6100	5600	5600	5200	5300	5000 ₅	5000 ₁₅
	60	6500	6500	5600	5600	5100	5100	4800	4700 ₅	4500	4500 ₁₀
	90	6000	6000	5100	5100	4700	4600	4300	4300	4100	4100

Continuous span Verandah beam AS 4055 classification C1 - C3

Roof load width (mm)		1500		3000		4500		6000		7500	
Rafter/truss spacing (mm)		600	1200	600	1200	600	1200	600	1200	600	1200
Member size DxB (mm)	Roof mass (kg/m ²)	Maximum recommended Verandah beam span - Continuous span (mm)									
90x45	10	1900	1900	1400	1100	1000	NS	NS	NS	NS	NS
	20	1900	1900	1400	1100	1000	NS	NS	NS	NS	NS
	40	2000	1900	1400	1100	1100	NS	NS	NS	NS	NS
	60	2000	2000	1400	1200	1100	NS	NS	NS	NS	NS
	90	1800	1800	1400	1200	1100	NS	NS	NS	NS	NS
130x45	10	2800	2800	2000	1900	1500	1400	1400	NS	NS	NS
	20	2800	2800	2000	1900	1500	1400	1400	NS	NS	NS
	40	2900	2900	2000	1900	1600	1500	1400	NS	NS	NS
	60	2900	2900	2100	2000	1600	1500	1400	NS	NS	NS
	90	2600	2600	2100	2000	1600	1600	1400	NS	NS	NS
150x45	10	3300	3200	2300	2200	1800	1600	1600	1200	1400	NS
	20	3300	3200	2300	2300	1800	1600	1600	1300	1400	NS
	40	3400	3300	2300	2300	1900	1600	1600	1300	1400 ₁₀	NS
	60	3400	3400	2400	2500	1900	1900	1600	1400	1500 ₁₅	NS
	90	3000	3000	2400	2400	1900	1900	1600 ₁₀	1300	1500 ₂₀	NS
170x45	10	3700	3600	2600	2700	2100	2000	1700	1400	1500	NS
	20	3700	3600	2600	2700	2100	2000	1700	1400	1500 ₅	NS
	40	3800	3700	2700	2700	2200	2100	1700	1500	1500 ₁₀	1200
	60	3900	3800	2700	2800	2200 ₅	2100	1700 ₅	1600	1600 ₂₀	1200 ₅
	90	3400	3300	2700	2700	2200 ₁₀	2100 ₅	1700 ₁₅	1600 ₁₀	1600 ₂₅	1200 ₁₀
200x45	10	4400	4300	3000	3000	2500	2600	2200 ₁₀	1600	1600 ₅	1300
	20	4400	4400	3100	3100	2500	2600 ₅	2200 ₁₅	1700	1600 ₁₀	1300
	40	4500	4400	3200	3100	2600 ₁₀	2600 ₁₅	2200 ₂₅	1700 ₅	1700 ₂₀	1400 ₅
	60	4400	4400	3200	3200	2600 ₂₀	2700 ₂₀	2200 ₃₅	1700 ₁₀	1700 ₃₀	1500 ₁₅
	90	4000	4000	3200 ₁₀	3100 ₅	2600 ₂₅	2700 ₃₀	2200 ₄₅	1700 ₂₀	1700 ₃₅	1400 ₂₀
240x45	10	5200	5200	3700	3600	3000 ₁₅	3000 ₁₅	2500 ₂₅	2700 ₃₀	1900 ₂₀	1900 ₂₀
	20	5300	5300	3700	3600	3000 ₂₀	3000 ₂₀	2500 ₃₀	2700 ₃₅	2000 ₃₀	1600 ₁₀
	40	5400	5400	3800 ₁₀	3700 ₁₀	3100 ₃₀	3100 ₂₅	2700 ₄₅	2700 ₄₅	2200 ₅₀	1900 ₃₀
	60	5000	5100	3900 ₁₅	3800 ₁₅	3200 ₄₀	3100 ₃₅	2700 ₅₅	2700 ₆₀	2300 ₆₀	1900 ₄₀
	90	4600	4600	3800 ₂₅	3800 ₂₅	3100 ₄₅	3100 ₄₅	2700 ₇₅	2700 ₈₅	2300 ₈₅	1900 ₅₀
300x45	10	6500	6500	4600 ₁₅	4600 ₁₅	3800 ₄₀	3700 ₃₅	3200 ₅₅	3200 ₅₀	2600 ₆₀	2800 ₈₀
	20	6600	6600	4700 ₂₀	4600 ₂₀	3800 ₄₅	3700 ₄₀	3200 ₆₅	3200 ₆₀	2600 ₇₀	2900 ₉₀
	40	6400	6500	4800 ₃₀	4700 ₃₀	3900 ₅₅	3800 ₅₅	3300 ₈₅	3200 ₈₅	3000 ₁₀₅	2900 ₁₀₀
	60	5900	5900	4900 ₄₀	4800 ₄₀	4000 ₈₀	3900 ₇₅	3400 ₁₀₀	3400 ₈₀	3000 ₁₂₀	3000 ₁₂₀
	90	5400	5400	4600 ₄₅	4600 ₄₅	3900 ₉₀	3900 ₉₀	3400 ₁₁₅	3200 ₁₁₀	3000 ₁₃₅	3000 ₁₃₅
360x45	10	7900 ₅	7900 ₅	5500 ₃₅	5500 ₃₅	4500 ₆₅	4500 ₆₅	3900 ₉₅	3600 ₆₀	3400 ₁₁₀	3100 ₉₅
	20	7900 ₁₀	7900 ₁₀	5600 ₄₀	5600 ₄₀	4600 ₈₀	4500 ₇₅	3900 ₁₀₀	3400 ₈₅	3400 ₁₁₅	3200 ₁₀₅
	40	7200 ₅	7300 ₁₀	5700 ₅₅	5700 ₅₀	4700 ₉₅	4600 ₉₀	4000 ₁₂₀	3500 ₁₀₀	3400 ₁₃₅	3200 ₁₂₀
	60	6700 ₅	6700 ₅	5800 ₇₀	5800 ₇₀	4800 ₁₁₀	4700 ₁₀₅	4100 ₁₃₅	4100 ₁₃₅	3500 ₁₄₅	3300 ₁₃₅
	90	6200 ₅	6200 ₅	5200 ₆₅	5200 ₇₀	4700 ₁₂₅	4700 ₁₂₅	4100 ₁₅₅	4100 ₁₅₅	3400 ₁₇₀	3300 ₁₅₅
400x45	10	8700 ₁₅	8700 ₁₅	6200 ₅₀	6100 ₅₀	5000 ₉₀	5000 ₉₀	4300 ₁₁₅	4300 ₁₁₀	3600 ₁₂₀	3300 ₁₀₅
	20	8600 ₁₅	8800 ₂₀	6200 ₅₅	6200 ₅₅	5100 ₁₀₀	5100 ₁₀₀	4400 ₁₂₀	4400 ₁₂₅	3600 ₁₂₅	3300 ₁₁₀
	40	7600 ₁₀	7900 ₁₅	6300 ₇₅	6300 ₇₅	5200 ₁₁₅	5200 ₁₁₅	4500 ₁₄₀	4500 ₁₄₀	3900 ₁₅₅	3400 ₁₃₀
	60	7100 ₁₀	7300 ₁₅	6200 ₈₅	6200 ₉₀	5300 ₁₃₀	5300 ₁₃₀	4600 ₁₆₀	4500 ₁₆₀	4000 ₁₈₅	3400 ₁₄₅
	90	6600 ₁₀	6600 ₁₅	5700 ₈₅	5700 ₈₅	5100 ₁₄₀	5100 ₁₄₀	4500 ₁₇₅	4500 ₁₇₅	4000 ₂₁₀	3400 ₁₆₅
90x63	10	2300	2500	1600	1600	1300	1000	1000	NS	NS	NS
	20	2300	2500	1600	1600	1300	1000	1100	NS	NS	NS
	40	2400	2500	1600	1600	1400	1100	1100	NS	NS	NS
	60	2300	2200	1700	1600	1400	1100	1100	NS	1000	NS
	90	2000	1900	1600	1400	1400	1100	1100	NS	NS	NS
130x63	10	3300	3300	2300	2400	1900	1800	1600	1500	1500	NS
	20	3400	3300	2400	2500	1900	1800	1600	1500	1500	NS
	40	3400	3400	2400	2500	2000	1800	1700	1500	1500	1200
	60	3300	3200	2500	2600	2000	1900	1700	1500	1500	1300
	90	2900	2900	2300	2200	2000	1900	1700	1500	1500	1300
150x63	10	3900	3800	2700	2700	2200	2100	1900	1600	1600	1400
	20	3900	3800	2700	2800	2200	2100	1900	1600	1600	1400
	40	4000	4000	2800	2800	2200	2200	2000	1900	1600	1500
	60	3800	3800	2800	2800	2300	2300	2000	1900	1600	1600
	90	3300	3300	2700	2700	2300	2300	2000	1900	1600	1500

Continuous span Verandah beam AS 4055 classification C1 - C3 (Cont'd)

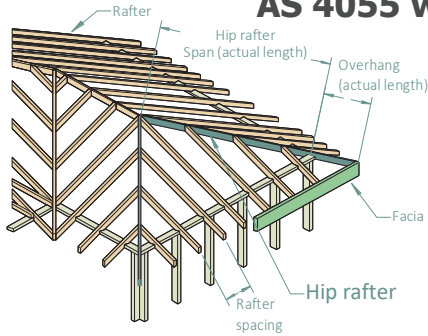
Roof load width (mm)		1500		3000		4500		6000		7500	
Rafter/truss spacing (mm)		600	1200	600	1200	600	1200	600	1200	600	1200
Member size DxB (mm)	Roof mass (kg/m ²)	Maximum recommended Verandah beam span - Continuous span (mm)									
170x63	10	4400	4400	3100	3100	2500	2600	2200	2000	1700	1600
	20	4400	4400	3100	3100	2500	2600	2200	2100	1900	1600
	40	4500	4500	3200	3100	2600	2600	2200	2100	2000 ₅	1600
	60	4200	4200	3200	3200	2600	2700	2300	2200	2000 ₁₀	1600
	90	3800	3800	3000	3000	2600	2600	2200 ₁₀	2200 ₅	2000 ₂₀	1600 ₅
200x63	10	5200	5200	3600	3500	2900	2900	2600	2600	2300 ₅	1700
	20	5200	5200	3700	3600	3000	3000	2600	2600 ₅	2300 ₁₀	1700
	40	5200	5200	3800	3700	3000	3000	2600 ₁₀	2700 ₁₀	2300 ₁₅	2100 ₁₀
	60	4700	4700	3800	3800	3100 ₅	3100 ₅	2700 ₁₅	2700 ₁₅	2300 ₂₅	2200 ₂₀
	90	4300	4300	3500	3500	3100 ₁₀	3100 ₁₀	2700 ₂₅	2700 ₂₅	2300 ₃₅	2100 ₂₅
240x63	10	6200	6200	4400	4400	3500	3500	3100 ₁₅	3000 ₁₅	2700 ₂₅	2800 ₂₅
	20	6300	6200	4400	4400	3600 ₅	3500 ₅	3100 ₁₅	3100 ₁₅	2800 ₃₀	2800 ₃₀
	40	5900	5900	4500	4500	3700 ₁₅	3600 ₁₀	3200 ₂₅	3100 ₂₀	2800 ₃₅	2800 ₄₀
	60	5400	5400	4600 ₅	4500	3700 ₂₀	3700 ₂₀	3200 ₃₅	3200 ₃₀	2900 ₄₅	2900 ₅₀
	90	4900	5000	4200	4200 ₅	3700 ₂₅	3600 ₂₅	3200 ₄₅	3100 ₄₀	2900 ₆₀	2900 ₆₅
300x63	10	7800	7800	5500 ₅	5500 ₅	4500 ₂₀	4400 ₂₀	3900 ₃₅	3800 ₃₅	3500 ₅₀	3200 ₄₀
	20	7700	7800	5500 ₅	5500 ₅	4500 ₂₅	4500 ₂₅	3900 ₄₀	3800 ₄₀	3500 ₅₅	3200 ₄₅
	40	6800	6900	5600 ₁₅	5600 ₁₅	4600 ₃₅	4500 ₃₅	4000 ₅₀	3900 ₅₀	3600 ₈₀	3200 ₅₅
	60	6400	6400	5400 ₂₀	5400 ₂₀	4700 ₄₅	4600 ₄₅	4000 ₆₅	4000 ₇₀	3600 ₉₀	3300 ₇₀
	90	5800	5800	4900 ₁₅	5000 ₁₅	4500 ₅₀	4500 ₅₀	4000 ₉₀	4000 ₈₅	3600 ₁₀₅	3300 ₉₀
360x63	10	9300	9300	6600 ₂₀	6600 ₂₀	5300 ₄₀	5300 ₄₀	4600 ₅₅	4600 ₅₅	4100 ₈₅	4100 ₈₅
	20	8500	9000	6600 ₂₅	6600 ₂₅	5400 ₄₅	5400 ₄₅	4700 ₇₀	4600 ₆₅	4200 ₉₅	4200 ₉₅
	40	7600	7900	6800 ₃₅	6800 ₃₅	5500 ₅₅	5500 ₅₅	4800 ₉₀	4700 ₉₀	4200 ₁₁₀	4300 ₁₁₀
	60	7100	7200	6200 ₃₀	6200 ₃₀	5600 ₈₀	5600 ₈₀	4900 ₁₀₅	4800 ₁₀₅	4400 ₁₂₅	4400 ₁₂₅
	90	6600	6600	5700 ₃₀	5700 ₃₀	5100 ₈₅	5200 ₈₅	4800 ₁₁₅	4800 ₁₂₀	4300 ₁₄₀	4300 ₁₄₀
400x63	10	10000	10400	7300 ₃₀	7300 ₃₀	6000 ₅₅	5900 ₅₅	5100 ₈₅	5200 ₉₀	4600 ₁₀₅	4600 ₁₀₅
	20	9000	9600	7400 ₃₅	7400 ₃₅	6000 ₆₀	6000 ₆₀	5200 ₉₅	5200 ₉₅	4600 ₁₀₀	4600 ₁₁₀
	40	8100	8500	7200 ₄₀	7300 ₄₅	6100 ₈₅	6100 ₈₅	5300 ₁₁₀	5300 ₁₁₀	4800 ₁₃₀	4700 ₁₂₅
	60	7600	7800	6700 ₄₀	6700 ₄₀	6100 ₉₅	6100 ₉₅	5400 ₁₂₅	5400 ₁₂₅	4900 ₁₅₀	4800 ₁₄₅
	90	7000	7200	6100 ₄₀	6100 ₄₀	5500 ₉₅	5600 ₉₅	5200 ₁₃₀	5200 ₁₃₅	4800 ₁₆₅	4700 ₁₆₀
300x75	10	8500	8500	6000	5900	4900 ₁₅	4800 ₁₀	4200 ₂₅	4200 ₂₅	3700 ₃₅	3700 ₃₅
	20	7800	8200	6000	6000	4900 ₁₅	4900 ₁₅	4200 ₃₀	4200 ₃₀	3800 ₄₅	3700 ₄₀
	40	7100	7200	6100 ₅	6100 ₅	5000 ₂₅	5000 ₂₅	4300 ₄₀	4300 ₄₀	3900 ₅₅	3800 ₅₅
	60	6600	6600	5700 ₅	5700 ₅	5100 ₃₅	5100 ₃₅	4400 ₅₀	4400 ₅₀	4000 ₈₀	3900 ₇₅
	90	6100	6100	5100 ₅	5200 ₅	4700 ₃₅	4700 ₃₅	4400 ₆₅	4300 ₆₅	3900 ₉₀	3900 ₉₀
	10	10200	10800	8000 ₂₀	8000 ₂₀	6500 ₄₅	6500 ₄₅	5600 ₆₅	5600 ₆₅	5000 ₉₀	5000 ₉₀
	20	9200	9900	8100 ₂₅	8000 ₂₅	6600 ₅₀	6600 ₅₀	5700 ₈₀	5700 ₈₀	5100 ₁₀₀	5100 ₁₀₀
	40	8300	8800	7400 ₂₅	7600 ₃₀	6700 ₆₀	6700 ₆₅	5800 ₉₅	5700 ₉₅	5200 ₁₁₅	5200 ₁₁₅
	60	7800	8100	6900 ₂₅	7000 ₂₅	6400 ₆₅	6400 ₇₀	5900 ₁₁₀	5900 ₁₁₀	5300 ₁₃₀	5300 ₁₃₀
	90	7300	7400	6400 ₂₅	6400 ₂₅	5800 ₆₅	5800 ₆₅	5400 ₁₁₀	5400 ₁₁₀	5100 ₁₄₀	5100 ₁₄₀

NOTES:

1. D = member depth, B = member breadth, NS = not suitable.
2. End bearing lengths = 0 mm at end supports and 70 mm at internal supports for continuous members. Subscript values indicate the minimum additional bearing length where required to be greater than 70 mm at end supports and 70 mm at internal supports
3. Restraint value for slenderness calculations is 1200 mm
4. Not all sizes of SmartLVL in this table are stocked in each state. Please check with your supplier before ordering

Hip rafter - sheet and tile roof

AS 4055 wind classification N1 - N4 and C1 - C3



EXAMPLE:

wind speed = N4
 roof load = 40 kg/m² (sheet roof)
 hip rafter span = 4500 mm (single span)
 rafter spacing = 600 mm

Enter column at (N1-N4) wind speed, 600 mm rafter spacing and read down to span equal to or greater than 4500 mm for a 40 kg/m² roof load

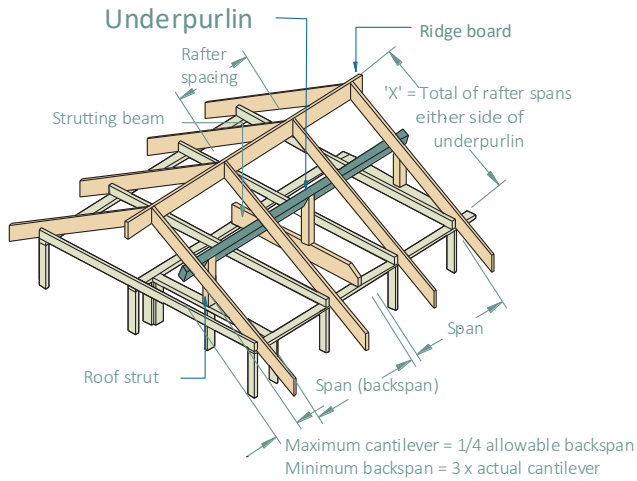
ADOPT: SmartLVL 13 - 240x45

AS 4055 wind category		N1 - N4				C1 - C3			
Maximum Rafter spacing (mm)		600		1200		600		1200	
Member size DxB (mm)	Roof mass (kg/m²)	Maximum hip rafter and overhang span - single span (mm)							
		span	O/H	span	O/H	span	O/H	span	O/H
90x45	40	2300	450	2300	400	2300	450	2300	400
	90	1900	400	1900	350	1900	400	1900	350
130x45	40	3100	700	3100	650	3100	700	3100	650
	90	2500	600	2500	500	2500	600	2500	500
150x45	40	3400	850	3400	750	3400	850	3400	750
	90	2800	750	2800	600	2800	750	2800	600
170x45	40	3700	1000	3700	850	3700	1000	3700	850
	90	3100	850	3100	650	3100	850	3100	650
200x45	40	4200	1150	4200	1000	4100	1150	4100	1000
	90	3500	1000	3500	800	3500	1000	3500	800
240x45	40	4800	1400	4800	1250	4600	1400	4600	1250
	90	4000	1200	4000	950	4000	1200	4000	950
300x45	40	5700	1750	5700	1550	5300	1750	5300	1550
	90	4700	1500	4700	1100	4700	1500	4700	1100
360x45	40	6400	2050	6400	1800	5900	2050	5900	1800
	90	5400	1800	5400	1300	5400	1800	5400	1300
90x63	40	2500	500	2500	500	2500	500	2500	500
	90	2100	500	2100	400	2100	500	2100	400
130x63	40	3300	800	3300	750	3300	800	3300	750
	90	2700	750	2700	550	2700	750	2700	550
150x63	40	3700	1000	3700	850	3700	1000	3700	850
	90	3000	850	3000	650	3000	850	3000	650
170x63	40	4000	1100	4000	950	4000	1100	4000	950
	90	3300	950	3300	750	3300	950	3300	750
200x63	40	4600	1300	4600	1150	4400	1300	4400	1150
	90	3800	1100	3800	900	3800	1100	3800	900
240x63	40	5200	1550	5200	1350	4900	1550	4900	1350
	90	4300	1350	4300	1050	4300	1350	4300	1050
300x63	40	6100	1950	6100	1700	5700	1950	5700	1700
	90	5100	1650	5100	1350	5100	1650	5100	1350
360x63	40	6800	2300	6800	2000	6300	2300	6300	2000
	90	5900	1950	5900	1550	5900	1950	5900	1550
400x63	40	7300	2550	7300	2150	6700	2550	6700	2150
	90	6300	2100	6300	1700	6300	2100	6300	1700
450x63	40	7800	2750	7800	2350	7200	2750	7200	2350
	90	6700	2300	6700	1850	6700	2300	6700	1850
300x75	40	6300	2050	6300	1800	5900	2050	5900	1800
	90	5300	1750	5300	1400	5300	1750	5300	1400
400x75	40	7500	2650	7500	2250	7000	2650	7000	2250
	90	6500	2200	6500	1850	6500	2200	6500	1850

NOTES:

1. D = member depth, B = member breadth, NS = not suitable.
2. The above table was based on a batten spacing of 900 mm
3. Minimum backspan = 200 % of overhang, Maximum birdsmouth depth = 15 % of depth
4. End bearing length = 45 at end supports. Subscript values indicate the minimum additional bearing length where required to be greater than 45 mm at end support
6. Construction loads shall not be applied to overhangs until a 190 x 19 mm (min) timber fascia or other fascia of equivalent stiffness is rigidly and permanently attached to the end of rafter overhangs
7. Not all sizes of SmartLVL in this table are stocked in each state. Please check with your supplier before ordering.

Underpurlins - sheet and tiled roof AS 4055 wind classification N1 - N4



EXAMPLE:

wind speed = N4
rafter spacing = 1200 mm
roof load = 20 kg/m² (sheet roof)
underpurlin span = 3500 mm (single span)

'X' (total of rafter span) = 5400 mm
roof load width = 'X' / 2 = 5400 / 2 = 2700 mm

Enter single span table at 2700 mm roof load width column, 1200 rafter spacing and read down to span equal to or greater than 3500 mm in a 20 kg/m² row

ADOPT:

SmartLVL 13 - 170x63

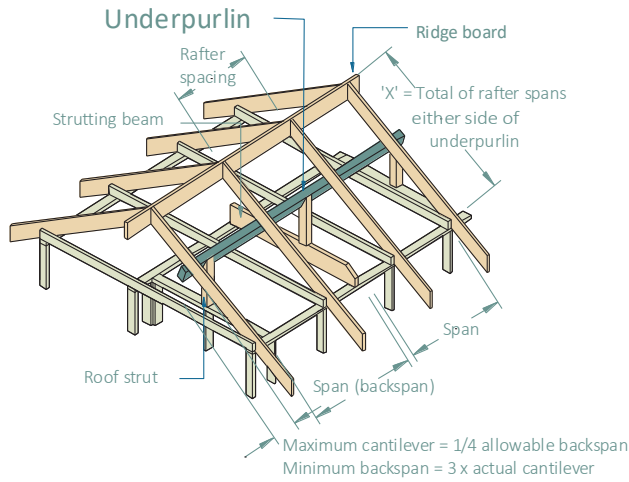
RLW = X/2 where ridge is struttred

Roof load width (mm)		1800		2700		3600		1800		2700		3600	
rafter spacing (mm)		600	1200	600	1200	600	1200	600	1200	600	1200	600	1200
Member size DxB (mm)	Roof mass (kg/m ²)	Single span						Continuous span					
		Maximum recommended Underpurlin span (mm)											
90x45	20	2100	2100	1800	1800	1600	1500	2700	2700	2200	2200	1900	1900
	60	1500	1300	1300	1100	1100	NS	2000	1900	1700	1500	1500	1400
130x45	20	3000	3000	2700	2700	2400	2500	4000	3900	3200	3200	2800	2800
	60	2100	2100	1800	1800	1700	1600	2900	2900	2500	2500	2300	2200
150x45	20	3500	3400	3100	3000	2800	2800	4600	4500	3700	3600	3200	3200
	60	2400	2500	2100	2100	1900	1900	3300	3300	2900	2900	2600	2600
170x45	20	3900	3900	3500	3400	3200	3100	5200	5200	4200	4200	3600	3600
	60	2800	2800	2400	2500	2200	2200	3700	3700	3300	3200	3000	3000
90x63	20	2300	2400	2000	2100	1800	1900	3100	3100	2600	2700	2200	2300
	60	1600	1500	1400	1300	1300	1100	2200	2100	1900	1900	1700	1700
130x63	20	3300	3300	2900	2900	2700	2700	4500	4500	3800	3700	3300	3200
	60	2400	2400	2100	2100	1900	1900	3200	3100	2800	2800	2600	2600
150x63	20	3900	3800	3400	3400	3100	3100	5200	5200	4400	4400	3800	3700
	60	2700	2800	2400	2400	2200	2200	3700	3700	3200	3200	2900	2900
170x63	20	4300	4300	3900	3800	3500	3500	5800	5800	5000	5000	4300	4300
	60	3100	3100	2700	2700	2500	2500	4200	4200	3700	3600	3300	3300
200x63	20	5100	5100	4500	4500	4100	4100	6000	6000	5900	5800	5100	5100
	60	3600	3600	3200	3200	2900	2900	4900	4900	4300	4300	3900	3900
240x63	20	6000	6000	5400	5400	4900	4900	6000	6000	6000	6000	6000 ₅	6000 ₅
	60	4400	4300	3800	3800	3500	3500	5900	5900	5200	5200	4700 ₁₀	4700 ₁₀
300x75	20	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
	60	5700	5700	5100	5100	4600	4600	6000	6000	6000	6000	6000 ₁₀	6000 ₁₀

NOTES:

1. D = member depth, B = member breadth, NS = not suitable.
2. Maximum cantilever = 1/4 allowable backspan
3. Minimum backspan = 3 x actual cantilever
4. End bearing length = 45 at end supports and 45 mm at internal for continuous member. Subscript values indicate the minimum additional bearing length where required to be greater than 45 mm at end support and 45 mm at internal for continuous member
5. Not all sizes of SmartLVL in this table are stocked in each state. Please check with your supplier before ordering.

Underpurlins - sheet and tiled roof AS 4055 wind classification C1 - C3



EXAMPLE:

wind speed = C3
rafter spacing = 1200 mm
roof load = 20 kg/m² (sheet roof)
underpurlin span = 3500 mm (single span)

'X' (total of rafter span) = 5400 mm
roof load width = 'X' / 2 = 5400 / 2 = 2700 mm

Enter single span table at 2700 mm roof load width column, 1200 rafter spacing and read down to span equal to or greater than 3500 mm in a 20 kg/m² row

ADOPT:

SmartLVL 13 - 170x63

RLW = X/2 where ridge is struttred

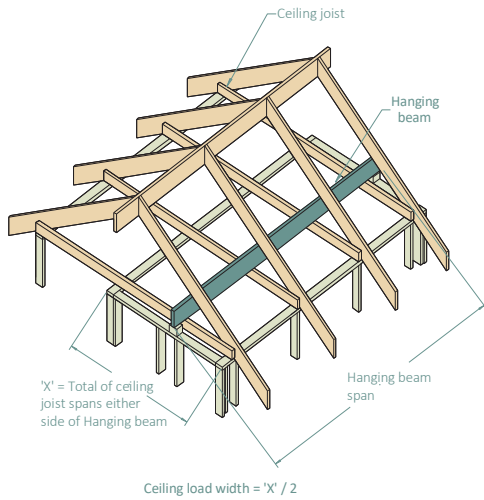
Roof load width (mm)		1800		2700		3600		1800		2700		3600	
Rafter spacing (mm)		600	1200	600	1200	600	1200	600	1200	600	1200	600	1200
Member size DxB (mm)	Roof mass (kg/m ²)	Single span						Continuous span					
		Maximum recommended Underpurlin span (mm)											
90x45	20	2100	2000	1700	1300	1400	1000	2200	2100	1700	1700	1500	1300
	60	1500	1300	1300	1100	1100	NS	2000	1900	1700	1500	1500	1400
130x45	20	3000	3000	2600	2500	2200	2100	3200	3100	2600	2700	2200	2200
	60	2100	2100	1800	1800	1700	1600	2900	2900	2500	2500	2200	2200
150x45	20	3500	3400	2900	2800	2600	2500	3700	3600	3000	3000	2600	2700
	60	2400	2500	2100	2100	1900	1900	3300	3300	2900	2900	2600 ₁₀	2600 ₁₀
170x45	20	3900	3900	3400	3200	2900	2800	4200	4200	3400	3300	2900	2900
	60	2800	2800	2400	2500	2200	2200	3700	3700	3300 ₅	3200	2900 ₁₅	2900 ₁₅
90x63	20	2300	2400	2000	1900	1700	1400	2600	2700	2100	2000	1800	1800
	60	1600	1500	1400	1300	1300	1100	2200	2100	1900	1900	1700	1700
130x63	20	3300	3300	2900	2900	2600	2600	3800	3700	3100	3100	2700	2700
	60	2400	2400	2100	2100	1900	1900	3200	3100	2800	2800	2600	2600
150x63	20	3900	3800	3400	3400	3000	2900	4400	4300	3500	3500	3100	3000
	60	2700	2800	2400	2400	2200	2200	3700	3700	3200	3200	2900	2900
170x63	20	4300	4300	3900	3800	3500	3300	5000	5000	4000	4000	3500	3400
	60	3100	3100	2700	2700	2500	2500	4200	4200	3700	3600	3300	3300
200x63	20	5100	5100	4500	4500	4100	4000	5800	5800	4700	4700	4100	4100
	60	3600	3600	3200	3200	2900	2900	4900	4900	4300	4300	3900 ₁₀	3900 ₁₀
240x63	20	6000	6000	5400	5400	4900	4900	6000	6000	5700 ₅	5700 ₅	4900 ₁₀	4900 ₁₀
	60	4400	4300	3800	3800	3500	3500	5900	5900	5200 ₁₀	5200 ₁₀	4700 ₂₅	4700 ₂₅
300x75	20	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000 ₁₅	6000 ₁₅
	60	5700	5700	5100	5100	4600	4600	6000	6000	6000 ₁₀	6000 ₁₀	6000 ₃₀	6000 ₃₀

NOTES:

1. D = member depth, B = member breadth, NS = not suitable.
2. Maximum cantilever = 1/4 allowable backspan
3. Minimum backspan = 3 x actual cantilever
4. End bearing length = 45 at end supports and 45 mm at internal for continuous member. Subscript values indicate the minimum additional bearing length where required to be greater than 45 mm at end support and 45 mm at internal for continuous member
5. Not all sizes of SmartLVL in this table are stocked in each state. Please check with your supplier before ordering.

Hanging beam supporting ceiling loads only AS 4055 classification N1 - N4

ceiling mass - 20 kg/m²



EXAMPLE:

wind speed = N4
hanging beam span = 4200 mm
X = 5000 mm

ceiling load width = $X/2 = 5000/2 = 2500$ mm

Enter column at 3000 mm ceiling load width & read down to a span greater than or equal to 4200 mm

ADOPT:

SmartLVL 13 - 240x45

Ceiling load width (mm)	Un-notched						Notched to 0.1 D					
	1800	2400	3000	3600	4200	4800	1800	2400	3000	3600	4200	4800
Size Dx B (mm)	Maximum recommended Un-notched hanging beam span (mm)						Maximum recommended notched hanging beam span (mm)					
90x45	2150	1950	1800	1650	1550	1450	2100	1950	1800	1650	1550	1450
130x45	3100	2800	2550	2400	2250	2100	3100	2800	2600	2400	2250	2100
150x45	3550	3200	2950	2750	2600	2450	3600	3250	2950	2750	2600	2450
170x45	4000	3650	3350	3100	2900	2750	3950	3650	3350	3100	2950	2750
200x45	4650	4250	3900	3650	3450	3250	4400	4100	3850	3650	3450	3250
240x45	5300	4900	4650	4350	4100	3900	5000	4650	4400	4150	4000	3800
300x45	6200	5800	5450	5150	4950	4750	5900	5500	5150	4900	4700	4500
360x45	7050	6600	6200	5900	5650	5400	6700	6250	5900	5600	5400	5150
90x63	2400	2150	2000	1850	1750	1650	2400	2150	2000	1850	1750	1650
130x63	3450	3100	2850	2650	2500	2350	3450	3100	2850	2650	2500	2350
150x63	3950	3550	3300	3050	2900	2700	3850	3600	3300	3050	2900	2750
170x63	4450	4000	3700	3450	3250	3100	4250	3900	3700	3450	3250	3100
200x63	5000	4650	4350	4050	3800	3600	4750	4400	4150	3950	3750	3600
240x63	5650	5300	5000	4750	4550	4300	5400	5050	4750	4500	4300	4150
300x63	6600	6200	5850	5600	5350	5150	6300	5900	5550	5300	5100	4900
360x63	7500	7050	6650	6350	6100	5850	7150	6700	6350	6050	5800	5600
400x63	8050	7600	7200	6850	6550	6300	7700	7200	6850	6500	6250	6050
450x63	8750	8200	7800	7450	7150	6900	8350	7850	7450	7100	6850	6550
300x75	6850	6400	6100	5800	5550	5350	6550	6100	5800	5500	5300	5100
400x75	8300	7850	7450	7100	6800	6550	7950	7500	7100	6800	6500	6250

NOTES:

1. D = member depth, B = member breadth, NS = not suitable
2. The above table was based on a maximum ceiling mass of 20 kg/m²
3. Minimum bearing length = 70 mm at end supports
4. Restraint value for slenderness calculations is 1500 mm
5. Maximum notch depth 0.1 x D
6. Not all sizes of SmartLVL in this table are stocked in each state. Please check with your supplier before ordering.

Hanging beam supporting ceiling loads only AS 4055 classification C1 - C3

ceiling mass - 20 kg/m²

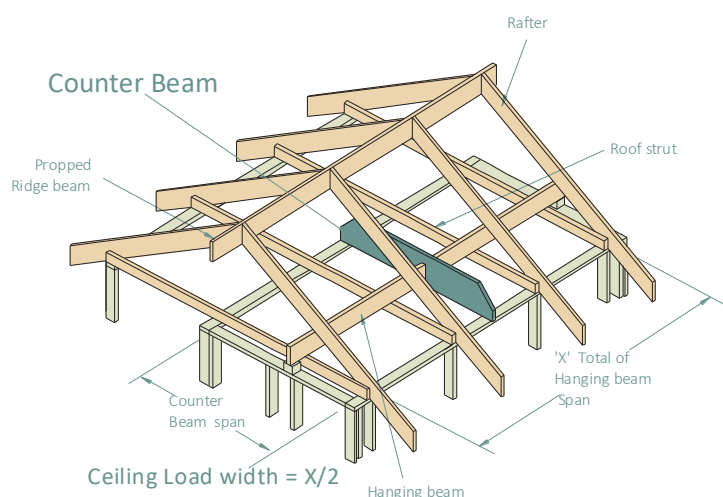
Ceiling load width (mm)	Un-notched						Notched to 0.1 D					
	1800	2400	3000	3600	4200	4800	1800	2400	3000	3600	4200	4800
Size DxB (mm)	Maximum recommended Un-notched hanging beam span (mm)						Maximum recommended notched hanging beam span (mm)					
90x45	2100	1950	1800	1650	1550	1450	2100	1750	1450	1300	1150	1000
130x45	3100	2800	2550	2350	2150	2000	3100	2500	2100	1800	1600	1450
150x45	3600	3250	2950	2650	2450	2300	3600	2850	2400	2100	1850	1700
170x45	4050	3650	3300	3000	2750	2600	3750	2950	2450	2150	1900	1750
200x45	4650	4300	3800	3500	3200	3000	4650	3800	3150	2700	2400	2200
240x45	5300	4950	4550	4150	3800	3550	5300	4500	3750	3250	2900	2650
300x45	6250	5800	5450	5050	4700	4350	6250	5600	4700	4050	3600	3300
360x45	7100	6600	6250	5900	5550	5150	7100	6600	5600	4850	4300	3900
90x63	2400	2150	2000	1850	1750	1650	2400	2150	1900	1650	1450	1300
130x63	3450	3100	2850	2650	2500	2350	3450	3100	2700	2350	2050	1850
150x63	3950	3600	3300	3050	2900	2700	3950	3600	3150	2700	2350	2100
170x63	4450	4050	3700	3450	3250	3050	4450	3900	3200	2750	2450	2200
200x63	5050	4650	4350	4050	3800	3550	5050	4650	4150	3550	3100	2800
240x63	5700	5300	5000	4800	4500	4200	5700	5300	4950	4250	3750	3350
300x63	6650	6250	5900	5600	5400	5150	6650	6250	5900	5250	4650	4150
360x63	7550	7100	6700	6400	6150	5900	7600	7100	6700	6300	5550	5000
400x63	8150	7650	7250	6900	6650	6350	8150	7650	7250	6900	6150	5500
450x63	8800	8300	7850	7550	7200	6950	8800	8300	7850	7550	6900	6200
300x75	6900	6450	6100	5850	5600	5400	6900	6450	6100	5850	5350	4750
400x75	8400	7900	7500	7200	6850	6650	8400	7900	7500	7200	6850	6300

NOTES:

1. D = member depth, B = member breadth, NS = not suitable
2. The above table was based on a maximum ceiling mass of 20 kg/m²
3. Minimum bearing length = 70 mm at end supports
4. Restraint value for slenderness calculations is 1500 mm
5. Maximum both depth = 0.1 x D
6. Not all sizes of SmartLVL in this table are stocked in each state. Please check with your supplier before ordering.

Counter beam supporting hanging beam AS 4055 classification N1 - N4

ceiling mass - 20 kg/m²



EXAMPLE:

wind speed = N4
total of hanging beam span = 6400 mm
ceiling load width = 'X' / 2 = 6400 / 2 = 3200 mm

counter beam span = 4500 mm

Enter column at 3600 mm ceiling load width and read down to a span greater than or equal to 4500 mm

ADOPT:

SmartLVL 13 - 240x45

Ceiling load width (mm)	600	1800	2400	3000	3600	4200	4800	5400	6600
Member size DxB (mm)	Maximum recommended Counter beam span (mm)								
90x45	2100	2100	2100	2100	1900	1800	1800	1700	1600
120x45	3300	3200	2900	2700	2600	2500	2400	2300	2100
150x45	4400	4000	3700	3400	3200	3100	2900	2800	2700
170x45	5000	4500	4100	3900	3700	3500	3300	3200	3000
200x45	5900	5000	4700	4500	4300	4100	3900	3800	3500
240x45	6900	5700	5400	5100	4900	4800	4600	4500	4300
300x45	8000	6700	6300	6000	5800	5600	5500	5300	5100
360x45	8900	7600	7200	6900	6600	6400	6200	6100	5800
2/90x45	3000	3000	2700	2600	2400	2300	2200	2100	2000
2/120x45	4400	3900	3600	3400	3200	3100	2900	2800	2700
2/150x45	5600	4700	4500	4200	4000	3800	3700	3500	3300
2/170x45	6100	5100	4900	4700	4500	4300	4100	4000	3800
2/200x45	6700	5700	5500	5200	5000	4900	4700	4600	4400
2/240x45	7500	6500	6200	5900	5700	5500	5400	5300	5000
2/300x45	8600	7500	7200	6900	6700	6500	6300	6200	5900
2/360x45	9500	8500	8100	7800	7600	7400	7200	7000	6700
2/400x45	10100	9100	8700	8400	8100	7900	7700	7600	7200
90x63	2500	2500	2500	2300	2200	2100	2000	1900	1800
120x63	3900	3500	3300	3000	2900	2700	2600	2500	2400
150x63	4900	4400	4000	3800	3600	3400	3300	3200	3000
170x63	5600	4800	4500	4300	4000	3900	3700	3600	3400
200x63	6400	5400	5100	4900	4700	4500	4400	4200	3900
240x63	7200	6100	5800	5500	5300	5100	5000	4900	4700
300x63	8300	7100	6700	6500	6200	6000	5900	5700	5500
360x63	9200	8000	7600	7300	7100	6900	6700	6500	6200
400x63	9800	8600	8200	7900	7600	7400	7200	7000	6700
450x63	10500	9300	8900	8500	8300	8000	7800	7600	7300
300x75	8400	7300	7000	6700	6500	6300	6100	5900	5700
400x75	10000	8800	8400	8100	7900	7600	7500	7300	7000

NOTES:

1. D = member depth, B = member breadth, NS = not suitable.
3. The above table was based on a maximum ceiling mass of 20 kg/m²
4. Minimum bearing length = 70 mm at end supports
4. Not all sizes of SmartLVL in this table are stocked in each state. Please check with your supplier before ordering
5. Top edge of Counter beams with D/B > 3 shall be laterally restrained as per details on page 9

Counter beam supporting hanging beam AS 4055 classification C1 - C3

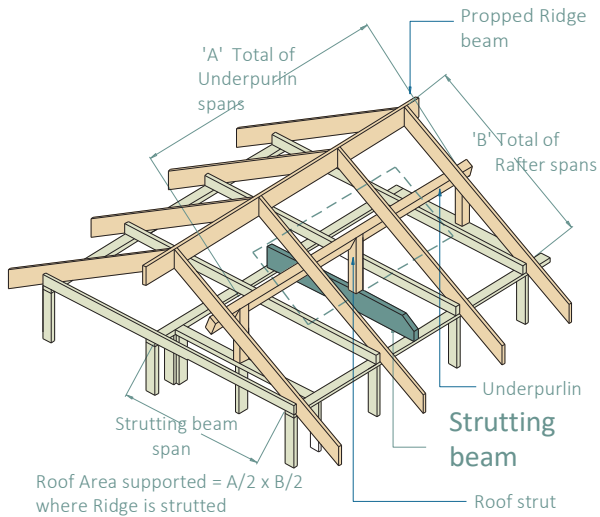
ceiling mass - 20 kg/m²

Ceiling load width (mm)	600	1800	2400	3000	3600	4200	4800	5400	6600
Member size DxB (mm)	Maximum recommended Counter beam span (mm)								
90x45	2100	2100	2100	1800	1700	1500	1400	1400	1200
120x45	3300	3200	2800	2500	2200	2100	1900	1800	1700
150x45	4400	4000	3500	3100	2800	2600	2400	2300	2100
170x45	5000	4500	3900	3500	3200	3000	2800	2600	2400
200x45	5900	5000	4600	4100	3800	3500	3300	3100	2800
240x45	6900	5700	5400	4900	4500	4200	3900	3700	3300
300x45	8000	6700	6300	6000	5600	5200	4900	4600	4200
360x45	8900	7600	7200	6900	6600	6300	5900	5500	5000
2/90x45	3000	3000	2700	2600	2400	2300	2200	2100	1900
2/120x45	4400	3900	3600	3400	3200	3100	2900	2800	2500
2/150x45	5600	4700	4500	4200	4000	3800	3700	3500	3200
2/170x45	6100	5100	4900	4700	4500	4300	4100	3900	3600
2/200x45	6700	5700	5500	5200	5000	4900	4700	4600	4200
2/240x45	7500	6500	6200	5900	5700	5500	5400	5300	5000
2/300x45	8600	7500	7200	6900	6700	6500	6300	6200	5900
2/360x45	9500	8500	8100	7800	7600	7400	7200	7000	6700
2/400x45	10100	9100	8700	8400	8100	7900	7700	7600	7200
90x63	2500	2500	2400	2200	2000	1800	1700	1600	1500
120x63	3900	3500	3300	2900	2700	2500	2300	2200	2000
150x63	4900	4400	4000	3700	3300	3100	2900	2700	2500
170x63	5600	4800	4500	4100	3800	3500	3300	3100	2800
200x63	6400	5400	5100	4900	4500	4100	3900	3600	3300
240x63	7200	6100	5800	5500	5300	4900	4600	4400	4000
300x63	8300	7100	6700	6500	6200	6000	5800	5500	4900
360x63	9200	8000	7600	7300	7100	6900	6700	6500	5900
400x63	9800	8600	8200	7900	7600	7400	7200	7000	6600
450x63	10500	9300	8900	8500	8300	8000	7800	7600	7300
300x75	8400	7300	7000	6700	6500	6300	6100	5900	5400
400x75	10000	8800	8400	8100	7900	7600	7500	7300	7000

NOTES:

1. D = member depth, B = member breadth, NS = not suitable.
3. The above table was based on a maximum ceiling mass of 20 kg/m²
4. Minimum bearing length = 70 mm at end supports
4. Not all sizes of SmartLVL in this table are stocked in each state. Please check with your supplier before ordering
5. Top edge of Counter beams with D/B > 3 shall be laterally restrained as per details on page 9

Strutting beam supporting underpurlins AS 4055 classification N1- N4



EXAMPLE:

wind speed = N4
 sheet roof = 20 kg/m^2
 total of underpurlin span 'A' = 5000 mm
 total of rafter span 'B' = 4200 mm
 roof area supported = $(A/2) \times (B/2)$
 $= (5000/2) \times (4200/2)$
 $= 5250000 \text{ mm}^2$ (Convert to m^2)
 $= 5250000/1000000 = 5.25 \text{ m}^2$

strutting beam span = 4500 mm

Enter column at 6 m^2 roof area supported and read down to a span greater than or equal to 4500 mm for a 20 kg/m^2 roof

ADOPT: SmartLVL - 240 x 45

Roof area supported (m^2)		2	4	6	8	10	12
Member size DxB (mm)	Roof mass (kg/m^2)	Maximum recommended Strutting beam span (mm)					
130x45	20	3200	2600	2200	1800	1400	1200
	60	2400	1700	1400	1200	1100	NS
150x45	20	3900	3200	2700	2300	1900	1600
	60	3000	2100	1800	1500	1400	1200
170x45	20	4800	3800	3200	2800	2400	2000
	60	3600	2600	2100	1800	1600	1500
200x45	20	5700	4800	4000	3500	3200	2800
	60	4500	3300	2700	2300	2100	1900
240x45	20	6900	6100	5200	4600	4200	3800
	60	5700	4300	3500	3100	2800	2500
300x45	20	8400	7300	6600	6200	5700	5300
	60	7100	5800	4900	4300	3900	3500
360x45	20	9500	8500	7800	7300	6800	6500
	60	8200	7000	6200	5600	5000	4600
2/130x45	20	4500	3600	3000	2600	2400	2200
	60	3300	2400	2000	1700	1500	1400
2/150x45	20	5400	4300	3700	3200	2900	2700
	60	4000	3000	2500	2100	1900	1800
2/170x45	20	6100	5000	4300	3800	3500	3200
	60	4700	3600	3000	2600	2300	2100
2/200x45	20	6900	6100	5400	4800	4400	4000
	60	5800	4500	3800	3300	3000	2700
2/240x45	20	7900	7100	6500	6100	5600	5200
	60	6800	5700	4900	4300	3900	3500
2/300x45	20	9100	8400	7800	7300	7000	6600
	60	8100	7100	6400	5800	5300	4900
2/360x45	20	10200	9500	9000	8500	8100	7800
	60	9300	8200	7500	7000	6500	6200
130x63	20	3800	3100	2500	2200	2000	1600
	60	2800	2000	1700	1400	1300	1200
150x63	20	4700	3700	3100	2700	2400	2200
	60	3500	2500	2100	1800	1600	1500
170x63	20	5400	4400	3700	3300	2900	2700
	60	4100	3000	2500	2200	1900	1800
200x63	20	6400	5400	4700	4100	3700	3400
	60	5100	3800	3200	2800	2500	2300
240x63	20	7500	6600	5900	5300	4800	4500
	60	6300	5000	4200	3600	3300	3000
300x63	20	8800	7900	7200	6700	6300	6000
	60	7600	6500	5700	5000	4500	4200
360x63	20	9900	9000	8400	7900	7500	7100
	60	8800	7600	6800	6300	5900	5400
400x63	20	10600	9800	9100	8600	8200	7800
	60	9500	8300	7500	6900	6500	6200
300x75	20	8900	8100	7500	7000	6600	6300
	60	7900	6800	6100	5400	4900	4500
400x75	20	10700	10000	9400	8900	8500	8200
	60	9800	8600	7900	7300	6800	6500

Strutting beam supporting underpurlins AS 4055 classification C1 - C3

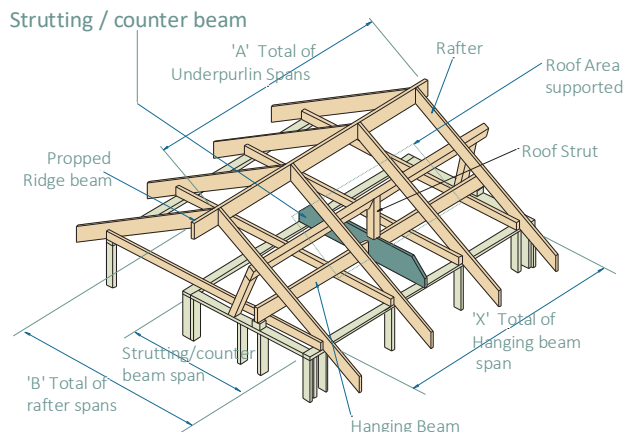
Roof area supported (m ²)		2	4	6	8	10	12
Member size DxB (mm)	Roof mass (kg/m ²)	Maximum recommended Strutting beam span (mm)					
130x45	20	3100	1500	NS	NS	NS	NS
	60	2400	1700	1100	NS	NS	NS
150x45	20	3900	2100	1400	NS	NS	NS
	60	3000	2100	1500	NS	NS	NS
170x45	20	4800	2700	1800	1200	NS	NS
	60	3600	2600	1900	1400	NS	NS
200x45	20	5700	3700	2500	1800	1100	NS
	60	4500	3300	2700	2000	1500	NS
240x45	20	6900	5400	3600	2700	2100	1400
	60	5700	4300	3500	2900	2300	1800
300x45	20	8400	7300	5600	4200	3300	2800
	60	7100	5800	4900	4300	3600	3000 _s
360x45	20	9500	8500	7800	6100	4800	4000
	60	8200	7000	6200	5600	5000	4400 _s
2/90x45	20	2600	1700	1100	NS	NS	NS
	60	2000	1400	1100	NS	NS	NS
2/130x45	20	4500	3600	2400	1800	1400	NS
	60	3300	2400	2000	1700	1500	1300
2/150x45	20	5400	4300	3200	2400	1900	1600
	60	4000	3000	2500	2100	1900	1700
2/170x45	20	6100	5000	4100	3100	2400	2000
	60	4700	3600	3000	2600	2300	2100
2/200x45	20	6900	6100	5400	4200	3400	2800
	60	5800	4500	3800	3300	3000	2700
2/240x45	20	7900	7100	6500	6100	4900	4100
	60	6800	5700	4900	4300	3900	3500
2/300x45	20	9100	8400	7800	7300	7000	6400
	60	8100	7100	6400	5800	5300	4900
2/360x45	20	10200	9500	9000	8500	8100	7800
	60	9300	8200	7500	7000	6500	6200
2/400x45	20	10900	10200	9700	9200	8800	8500
	60	10000	9000	8200	7600	7200	6800
130x63	20	3800	2200	1400	1100	NS	NS
	60	2800	2000	1600	1200	NS	NS
150x63	20	4700	2900	1900	1400	1000	NS
	60	3500	2500	2100	1600	1200	NS
170x63	20	5400	3800	2500	1900	1500	NS
	60	4100	3000	2500	2000	1600	1200
200x63	20	6400	5200	3500	2600	2100	1700
	60	5100	3800	3200	2800	2300	1900
240x63	20	7500	6600	5000	3800	3000	2500
	60	6300	5000	4200	3600	3300	2700
300x63	20	8800	7900	7200	5900	4700	3900
	60	7600	6500	5700	5000	4500	4200
360x63	20	9900	9000	8400	7900	6800	5600
	60	8800	7600	6800	6300	5900	5400
400x63	20	10600	9800	9100	8600	8200	7000
	60	9500	8300	7500	6900	6500	6200
450x63	20	11400	10600	10000	9500	9000	8700
	60	10400	9200	8300	7700	7300	6900
300x75	20	8900	8100	7500	7000	5600	4600
	60	7900	6800	6100	5400	4900	4500
400x75	20	10700	10000	9400	8900	8500	8200
	60	9800	8600	7900	7300	6800	6500

NOTES:

1. D = member depth, B = member breadth, NS = not suitable.
2. Minimum bearing length = 70 mm at end supports
3. Not all sizes of SmartLVL in this table are stocked in each state. Please check with your supplier before ordering
4. Top edge of strutting beams with D/B > 3 shall be laterally restrained as per details on page 9

Strutting/counter beam supporting underpurlins & hanging beam AS 4055 classification N1 - N4

ceiling mass - 20 kg/m²



Roof area supported = $A/2 \times B/2$ counter/strutting beam spacing = $X/2$

EXAMPLE:

wind speed = N4
sheet roof = 40 kg/m²
total of underpurlin span 'A' = 5000 mm
total of rafter span 'B' = 4200 mm
roof area supported = $(A/2) \times (B/2)$
= $(5000/2) \times (4200/2)$
= 5250000 mm² (Convert to m²)
= 5250000/1000000 = 5.25 m²
total of hanging beam span 'X' = 4500 mm
effective beam spacing = $'X' / 2 = 4500 / 2 = 2250$ mm
strutting counter beam span = 4500 mm

Enter column at 3600 mm effective beam spacing, 6 m² roof area supported and read down to a span greater than or equal to 4500 mm for a 40 kg/m² roof

ADOPT:

SmartLVL 13 - 360x45

Effective beam spacing (mm)		1800						3600					
Roof area supported (m ²)		2	4	6	8	10	12	2	4	6	8	10	12
Member size DxB (mm)	Roof mass (kg/m ²)	Maximum recommended strutting/counter beam span (mm)											
150x45	40	2800	2300	1900	1700	1600	1400	2500	2100	1900	1700	1500	1400
	75	2400	1800	1500	1300	1200	1100	2200	1800	1500	1300	1200	1100
170x45	40	3300	2700	2300	2100	1900	1700	2900	2500	2200	2000	1800	1700
	75	2800	2200	1900	1600	1500	1300	2600	2100	1800	1600	1400	1300
200x45	40	3800	3300	2900	2600	2400	2200	3500	3000	2700	2500	2300	2100
	75	3500	2800	2300	2100	1900	1700	3200	2600	2300	2000	1800	1700
240x45	40	4500	4000	3700	3400	3100	2800	4000	3700	3400	3200	2900	2700
	75	4100	3600	3000	2700	2400	2200	3800	3300	2900	2600	2400	2200
300x45	40	5300	4800	4500	4200	4000	3800	4800	4500	4200	4000	3800	3700
	75	5000	4400	4000	3700	3400	3100	4600	4100	3800	3500	3300	3000
360x45	40	6100	5600	5300	5000	4700	4500	5500	5200	4900	4700	4500	4300
	75	5800	5100	4700	4300	4100	3900	5300	4800	4500	4200	4000	3800
2/150x45	40	3600	3100	2700	2400	2200	2000	3200	2800	2500	2300	2100	1900
	75	3200	2500	2200	1900	1700	1600	2900	2400	2100	1800	1700	1500
2/170x45	40	4000	3600	3200	2800	2600	2400	3700	3300	3000	2700	2500	2300
	75	3700	3000	2600	2300	2100	1900	3400	2800	2500	2200	2000	1900
2/200x45	40	4600	4100	3800	3500	3300	3000	4200	3800	3600	3300	3100	2900
	75	4200	3700	3200	2900	2600	2400	3900	3500	3100	2800	2500	2300
2/240x45	40	5300	4800	4500	4200	4000	3800	4800	4500	4200	4000	3800	3700
	75	4900	4300	4000	3700	3400	3100	4500	4100	3800	3600	3300	3000
2/300x45	40	6200	5800	5400	5100	4900	4700	5600	5300	5100	4800	4700	4500
	75	5900	5300	4800	4500	4300	4000	5400	5000	4600	4400	4100	4000
2/360x45	40	7100	6600	6300	6000	5700	5500	6400	6100	5900	5600	5400	5300
	75	6800	6100	5700	5300	5000	4800	6200	5800	5400	5100	4900	4700
2/400x45	40	7600	7200	6800	6500	6300	6000	6900	6600	6400	6100	5900	5800
	75	7300	6700	6200	5900	5600	5300	6700	6300	5900	5600	5400	5100
150x63	40	3200	2600	2300	2000	1800	1700	2800	2400	2200	1900	1800	1600
	75	2800	2200	1800	1600	1400	1300	2500	2100	1800	1600	1400	1300
170x63	40	3700	3100	2700	2400	2200	2000	3300	2900	2500	2300	2100	2000
	75	3300	2600	2200	1900	1700	1600	3000	2400	2100	1900	1700	1600

Strutting/counter beam supporting underpurlins & hanging beam AS 4055 classification N1- N4 (Cont'd)

ceiling mass - 20 kg/m²

Effective beam spacing (mm)		1800						3600					
Roof area supported (m ²)		2	4	6	8	10	12	2	4	6	8	10	12
Member size DxB (mm)	Roof mass (kg/m ²)	Maximum recommended strutting/counter beam span (mm)											
200x63	40	4200	3700	3400	3000	2800	2600	3800	3500	3100	2900	2700	2500
	75	3900	3200	2800	2400	2200	2000	3600	3000	2600	2400	2100	2000
240x63	40	4800	4400	4000	3800	3600	3300	4400	4100	3800	3600	3400	3200
	75	4500	3900	3500	3200	2900	2600	4200	3700	3400	3000	2800	2600
300x63	40	5800	5300	4900	4600	4400	4200	5200	4900	4600	4400	4200	4000
	75	5400	4800	4400	4100	3800	3600	5000	4500	4200	3900	3700	3500
360x63	40	6600	6100	5700	5400	5200	5000	6000	5600	5400	5100	4900	4800
	75	6300	5600	5200	4800	4500	4300	5700	5300	4900	4600	4400	4200
400x63	40	7100	6600	6300	6000	5700	5500	6400	6100	5900	5600	5400	5200
	75	6800	6100	5700	5300	5000	4800	6200	5800	5400	5100	4800	4600
450x63	40	7700	7300	6900	6600	6300	6100	7000	6700	6400	6200	6000	5800
	75	7400	6800	6300	5900	5600	5300	6800	6300	6000	5600	5400	5200
300x75	40	6000	5500	5200	4900	4600	4400	5400	5100	4800	4600	4400	4300
	75	5600	5000	4600	4300	4000	3800	5200	4700	4400	4100	3900	3700
400x75	40	7400	6900	6500	6200	6000	5700	6700	6400	6100	5900	5700	5500
	75	7000	6400	5900	5600	5300	5000	6500	6000	5600	5300	5100	4900

Strutting/counter beam supporting underpurlins & hanging beam AS 4055 classification C1 - C3

ceiling mass - 20 kg/m²

Effective beam spacing (mm)		1800						3600					
Roof area supported (m ²)		2	4	6	8	10	12	2	4	6	8	10	12
Member size DxB (mm)	Roof mass (kg/m ²)	Maximum recommended strutting/counter beam span (mm)											
150x45	40	2800	2200	1400	1100	NS	NS	2500	2100	1500	1100	NS	NS
	75	2400	1800	1500	1200	NS	NS	2200	1800	1500	1200	NS	NS
170x45	40	3300	2700	1900	1400	1100	NS	2900	2500	1900	1400	1100	NS
	75	2800	2200	1900	1500	1200	1000	2600	2100	1800	1500	1200	1000
200x45	40	3800	3300	2600	1900	1500	1300	3500	3000	2700	2000	1500	1300
	75	3500	2800	2300	2100	1700	1400	3200	2600	2300	2000	1700	1400
240x45	40	4500	4000	3700	2800	2200	1800	4000	3700	3400	2900	2300	1900
	75	4100	3600	3000	2700	2400	2000	3800	3300	2900	2600	2400	2000
300x45	40	5300	4800	4500	4200	3500	2900	4800	4500	4200	4000	3600	3000
	75	5000	4400	4000	3700	3400	3100	4600	4100	3800	3500	3300	3000
360x45	40	6100	5600	5300	5000	4700	4200	5500	5200	4900	4700	4500	4300
	75	5800	5100	4700	4300	4100	3900	5300	4800	4500	4200	4000	3800
2/150x45	40	3600	3100	2700	2400	2000	1600	3200	2800	2500	2300	2000	1600
	75	3200	2500	2200	1900	1700	1600	2900	2400	2100	1800	1700	1500
2/170x45	40	4000	3600	3200	2800	2600	2100	3700	3300	3000	2700	2500	2100
	75	3700	3000	2600	2300	2100	1900	3400	2800	2500	2200	2000	1900
2/200x45	40	4600	4100	3800	3500	3300	3000	4200	3800	3600	3300	3100	2900
	75	4200	3700	3200	2900	2600	2400	3900	3500	3100	2800	2500	2300
2/240x45	40	5300	4800	4500	4200	4000	3800	4800	4500	4200	4000	3800	3700
	75	4900	4300	4000	3700	3400	3100	4500	4100	3800	3600	3300	3000
2/300x45	40	6200	5800	5400	5100	4900	4700	5600	5300	5100	4800	4700	4500
	75	5900	5300	4800	4500	4300	4000	5400	5000	4600	4400	4100	4000
2/360x45	40	7100	6600	6300	6000	5700	5500	6400	6100	5900	5600	5400	5300
	75	6800	6100	5700	5300	5000	4800	6200	5800	5400	5100	4900	4700
2/400x45	40	7600	7200	6800	6500	6300	6000	6900	6600	6400	6100	5900	5800
	75	7300	6700	6200	5900	5600	5300	6700	6300	5900	5600	5400	5100

Strutting/counter beam supporting underpurlins & hanging beam AS 4055 classification C1 - C3 (Cont'd)

ceiling mass - 20 kg/m²

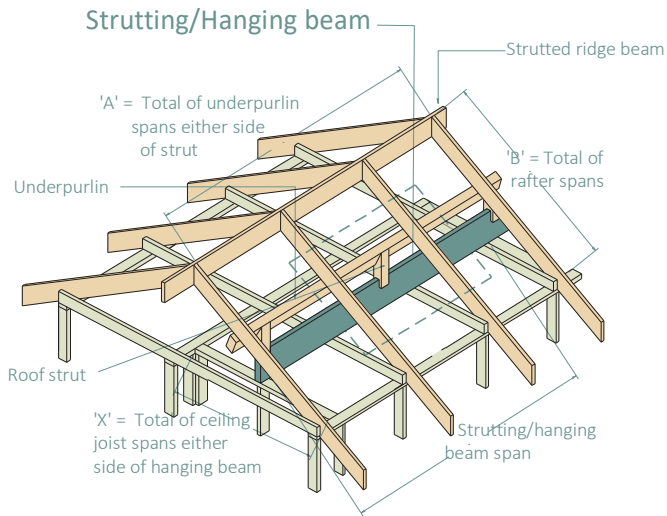
Effective beam spacing (mm)		1800						3600					
Roof area supported (m ²)		2	4	6	8	10	12	2	4	6	8	10	12
Member size DxB (mm)	Roof mass (kg/m ²)	Maximum recommended Strutting /counter span (mm)											
150x63	40	3200	2600	2100	1500	1200	1000	2800	2400	2100	1500	1200	1000
	75	2800	2200	1800	1600	1300	1100	2500	2100	1800	1600	1300	1100
170x63	40	3700	3100	2700	2000	1600	1300	3300	2900	2500	2000	1600	1300
	75	3300	2600	2200	1900	1700	1400	3000	2400	2100	1900	1700	1400
200x63	40	4200	3700	3400	2700	2200	1800	3800	3500	3100	2800	2200	1800
	75	3900	3200	2800	2400	2200	1900	3600	3000	2600	2400	2100	2000
240x63	40	4800	4400	4000	3800	3200	2600	4400	4100	3800	3600	3200	2600
	75	4500	3900	3500	3200	2900	2600	4200	3700	3400	3000	2800	2600
300x63	40	5800	5300	4900	4600	4400	4100	5200	4900	4600	4400	4200	4000
	75	5400	4800	4400	4100	3800	3600	5000	4500	4200	3900	3700	3500
360x63	40	6600	6100	5700	5400	5200	5000	6000	5600	5400	5100	4900	4800
	75	6300	5600	5200	4800	4500	4300	5700	5300	4900	4600	4400	4200
400x63	40	7100	6600	6300	6000	5700	5500	6400	6100	5900	5600	5400	5200
	75	6800	6100	5700	5300	5000	4800	6200	5800	5400	5100	4800	4600
450x63	40	7700	7300	6900	6600	6300	6100	7000	6700	6400	6200	6000	5800
	75	7400	6800	6300	5900	5600	5300	6800	6300	6000	5600	5400	5200
300x75	40	6000	5500	5200	4900	4600	4400	5400	5100	4800	4600	4400	4300
	75	5600	5000	4600	4300	4000	3800	5200	4700	4400	4100	3900	3700
400x75	40	7400	6900	6500	6200	6000	5700	6700	6400	6100	5900	5700	5500
	75	7000	6400	5900	5600	5300	5000	6500	6000	5600	5300	5100	4900

NOTES:

1. D = member depth, B = member breadth, NS = not suitable.
2. Minimum bearing length = 70 mm at end supports.
3. The above table was based on a maximum ceiling mass of 20 kg/m²
4. Top edge of strutting/counter beams with D/B > 3 shall be laterally restrained as per details on page 9
5. Not all sizes of SmartLVL in this table are stocked in each state. Please check with your supplier before ordering.

Strutting/hanging beam AS 4055 classification N1 - N4

ceiling mass - 20 kg/m²



EXAMPLE:

wind speed = N4
 sheet roof = 40 kg/m²
 A = 5000 mm, B = 4200 mm
 roof area supported = (A/2) x (B/2)
 = (5000/2) x (4200/2)
 = 5250000 mm² (Convert to m²)
 = 5250000/1000000 = 5.25 m²
 strutting/hanging beam span = 4200 mm
 ceiling joist span ('X') = 4400 mm
 ceiling load width = ['X' / 2] = 4400/2 = 2200 mm

Enter column at 3600 mm ceiling load width, 6 m² roof area supported and read down to a span greater than or equal to 4200 mm for a 40 kg/m² roof

ADOPT:

SmartLVL 13 - 360x45

Roof area supported = A/2 x B/2 Ceiling load width = X/2

Ceiling load width (mm)		1800						3600					
Roof area supported (m ²)		2	4	6	8	10	12	2	4	6	8	10	12
Member size DxB (mm)	Roof mass (kg/m ²)	Maximum recommended Strutting/hanging beam span (mm)											
150x45	40	2700	2200	1900	1700	1500	1400	2300	2000	1800	1600	1500	1400
	75	2300	1800	1500	1300	1200	1100	2100	1700	1500	1300	1200	1100
170x45	40	3200	2600	2300	2000	1900	1700	2700	2300	2100	1900	1800	1600
	75	2800	2200	1800	1600	1400	1300	2400	2000	1700	1600	1400	1300
200x45	40	3700	3200	2900	2600	2300	2200	3200	2800	2600	2400	2200	2100
	75	3400	2700	2300	2000	1800	1700	2900	2500	2200	2000	1800	1700
240x45	40	4400	3900	3600	3300	3000	2800	3800	3500	3300	3000	2800	2600
	75	4000	3500	3000	2700	2400	2200	3600	3200	2800	2500	2300	2200
300x45	40	5200	4800	4400	4100	3900	3800	4500	4300	4100	3900	3700	3600
	75	4900	4300	3900	3600	3300	3100	4400	4000	3700	3400	3200	3000
360x45	40	6000	5600	5200	4900	4700	4500	5200	5000	4700	4500	4400	4200
	75	5700	5100	4600	4300	4100	3900	5000	4600	4300	4100	3900	3700
2/150x45	40	3500	3000	2600	2400	2100	2000	3000	2600	2400	2200	2000	1900
	75	3100	2500	2100	1900	1700	1600	2700	2300	2000	1800	1600	1500
2/170x45	40	3900	3500	3100	2800	2600	2400	3400	3100	2800	2600	2400	2300
	75	3600	3000	2500	2300	2000	1900	3200	2700	2400	2100	2000	1800
2/200x45	40	4500	4000	3700	3500	3200	3000	3900	3700	3400	3200	3000	2800
	75	4200	3600	3200	2800	2600	2400	3700	3300	3000	2700	2500	2300
2/240x45	40	5200	4700	4400	4100	3900	3800	4500	4300	4000	3900	3700	3600
	75	4800	4300	3900	3600	3400	3100	4300	4000	3700	3400	3200	3000
2/300x45	40	6100	5700	5300	5100	4800	4600	5400	5100	4900	4700	4500	4400
	75	5800	5200	4800	4500	4200	4000	5200	4800	4500	4300	4100	3900
2/360x45	40	7000	6600	6200	5900	5700	5500	6200	5900	5700	5500	5300	5100
	75	6700	6100	5600	5300	5000	4800	6000	5600	5300	5000	4800	4600
2/400x45	40	7500	7100	6800	6500	6200	6000	6700	6400	6200	6000	5800	5600
	75	7200	6600	6200	5800	5500	5300	6500	6100	5800	5500	5300	5100

Strutting/hanging beam
AS 4055 classification N1 - N4 (Cont'd)
ceiling mass - 20 kg/m²

Ceiling load width (mm)		1800						3600					
Roof area supported (m ²)		2	4	6	8	10	12	2	4	6	8	10	12
Member size DxB (mm)	Roof mass (kg/m ²)	Maximum strutting/hanging beam span (mm)											
150x63	40	3100	2600	2200	2000	1800	1700	2600	2300	2100	1900	1700	1600
	75	2700	2100	1800	1600	1400	1300	2400	2000	1700	1500	1400	1300
170x63	40	3600	3000	2700	2400	2200	2000	3000	2700	2400	2200	2000	1900
	75	3200	2500	2200	1900	1700	1600	2800	2300	2000	1800	1700	1500
200x63	40	4100	3700	3300	3000	2700	2500	3600	3200	3000	2700	2600	2400
	75	3800	3200	2700	2400	2200	2000	3300	2900	2500	2300	2100	1900
240x63	40	4700	4300	4000	3700	3500	3300	4100	3900	3700	3500	3300	3100
	75	4400	3900	3500	3100	2800	2600	4000	3600	3200	2900	2700	2500
300x63	40	5700	5200	4900	4600	4300	4200	4900	4700	4400	4300	4100	3900
	75	5300	4700	4300	4000	3800	3600	4700	4400	4100	3800	3600	3400
360x63	40	6500	6000	5700	5400	5100	4900	5700	5400	5200	5000	4800	4600
	75	6200	5600	5100	4800	4500	4300	5500	5100	4800	4500	4300	4100
400x63	40	7000	6600	6200	5900	5600	5400	6200	5900	5600	5400	5300	5100
	75	6700	6100	5600	5300	5000	4700	6000	5600	5200	5000	4700	4600
450x63	40	7700	7200	6900	6500	6300	6000	6700	6500	6200	6000	5800	5600
	75	7300	6700	6200	5900	5500	5300	6500	6100	5800	5500	5300	5100
300x75	40	5900	5400	5100	4800	4600	4400	5100	4900	4700	4500	4300	4100
	75	5600	5000	4600	4200	4000	3800	5000	4600	4300	4000	3800	3700
400x75	40	7300	6800	6500	6200	5900	5700	6400	6100	5900	5700	5500	5300
	75	7000	6400	5900	5500	5200	5000	6200	5800	5500	5200	5000	4800

Strutting/hanging beam
AS 4055 classification C1 - C3
ceiling mass - 20 kg/m²

Ceiling load width (mm)		1800						3600					
Roof area supported (m ²)		2	4	6	8	10	12	2	4	6	8	10	12
Member size DxB (mm)	Roof mass (kg/m ²)	Maximum strutting/hanging beam span (mm)											
150x45	40	2700	2100	1700	1300	NS	NS	2200	2000	1700	1300	NS	NS
	75	2300	1800	1500	NS	NS	NS	2100	1700	1500	NS	NS	NS
170x45	40	3200	2500	2000	1700	1100	NS	2500	2300	2000	1700	1100	NS
	75	2800	2200	1800	1500	NS	NS	2400	2000	1700	1500	NS	NS
200x45	40	3700	3200	2600	2200	1900	1200	2900	2800	2600	2200	1900	1200
	75	3400	2700	2300	2000	1600	NS	2900	2500	2200	2000	1500	NS
240x45	40	4400	3900	3400	3000	2600	2300	3500	3500	3300	3000	2600	2200
	75	4000	3500	3000	2700	2400	1900	3500	3200	2800	2500	2300	1800
300x45	40	5200	4800	4400	4100	3700	3400	4300	4300	4100	3900	3700	3400
	75	4900	4300	3900	3600	3300	3100 _s	4400	4000	3700	3400	3200	3000 _s
360x45	40	6000	5600	5200	4900	4700	4400	5200	5000	4700	4500	4400	4200
	75	5700	5100	4600	4300	4100	3900 _s	5000	4600	4300	4100	3900	3700 _s
2/150x45	40	3500	2900	2400	2100	1800	1700	3000	2600	2400	2100	1800	1700
	75	3100	2500	2100	1900	1700	1600	2700	2300	2000	1800	1600	1500
2/170x45	40	3900	3500	2900	2500	2200	2000	3400	3100	2800	2500	2200	2000
	75	3600	3000	2500	2300	2000	1900	3200	2700	2400	2100	2000	1800
2/200x45	40	4500	4000	3700	3200	2800	2600	3900	3700	3400	3200	2800	2600
	75	4200	3600	3200	2800	2600	2400	3700	3300	3000	2700	2500	2300
2/240x45	40	5200	4700	4400	4100	3800	3400	4500	4300	4000	3900	3700	3400
	75	4800	4300	3900	3600	3400	3100	4300	4000	3700	3400	3200	3000
2/300x45	40	6100	5700	5300	5100	4800	4600	5400	5100	4900	4700	4500	4400
	75	5800	5200	4800	4500	4200	4000	5200	4800	4500	4300	4100	3900
2/360x45	40	7000	6600	6200	5900	5700	5500	6200	5900	5700	5500	5300	5100
	75	6700	6100	5600	5300	5000	4800	6000	5600	5300	5000	4800	4600
2/400x45	40	7500	7100	6800	6500	6200	6000	6700	6400	6200	6000	5800	5600
	75	7200	6600	6200	5800	5500	5300	6500	6100	5800	5500	5300	5100

Strutting/hanging beam AS 4055 classification C1 - C3 (Cont'd)

ceiling mass - 20 kg/m²

Ceiling load width (mm)		1800						3600					
Roof area supported (m ²)		2	4	6	8	10	12	2	4	6	8	10	12
Member size DxB (mm)	Roof mass (kg/m ²)	Maximum recommended strutting/hanging beam span (mm)											
150x63	40	3100	2400	2000	1700	1500	1100	2600	2300	2000	1700	1500	1100
	75	2700	2100	1800	1600	1300	NS	2400	2000	1700	1500	1300	NS
170x63	40	3600	2900	2400	2100	1800	1600	2900	2700	2400	2100	1800	1600
	75	3200	2500	2200	1900	1700	1300	2800	2300	2000	1800	1700	1300
200x63	40	4100	3700	3100	2700	2400	2200	3400	3200	3000	2700	2400	2200
	75	3800	3200	2700	2400	2200	2000	3300	2900	2500	2300	2100	1900
240x63	40	4700	4300	4000	3500	3100	2900	4100	3900	3700	3500	3100	2900
	75	4400	3900	3500	3100	2800	2600	4000	3600	3200	2900	2700	2500
300x63	40	5700	5200	4900	4600	4300	4000	4900	4700	4400	4300	4100	3900
	75	5300	4700	4300	4000	3800	3600	4700	4400	4100	3800	3600	3400
360x63	40	6500	6000	5700	5400	5100	4900	5700	5400	5200	5000	4800	4600
	75	6200	5600	5100	4800	4500	4300	5500	5100	4800	4500	4300	4100
400x63	40	7000	6600	6200	5900	5600	5400	6200	5900	5600	5400	5300	5100
	75	6700	6100	5600	5300	5000	4700	6000	5600	5200	5000	4700	4600
450x63	40	7700	7200	6900	6500	6300	6000	6700	6500	6200	6000	5800	5600
	75	7300	6700	6200	5900	5500	5300	6500	6100	5800	5500	5300	5100
300x75	40	5900	5400	5100	4800	4600	4400	5100	4900	4700	4500	4300	4100
	75	5600	5000	4600	4200	4000	3800	5000	4600	4300	4000	3800	3700
400x75	40	7300	6800	6500	6200	5900	5700	6400	6100	5900	5700	5500	5300
	75	7000	6400	5900	5500	5200	5000	6200	5800	5500	5200	5000	4800

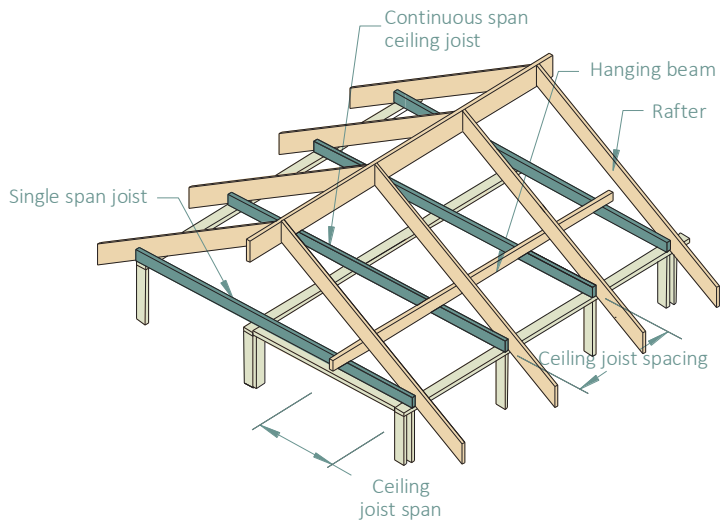
NOTES:

1. D = member depth, B = member breadth, NS = not suitable.
2. The above table was based on a maximum ceiling mass of 20 kg/m²
3. Minimum bearing length = 70 mm at end supports. Subscript values indicate the minimum additional bearing length
4. Top edge of strutting/hanging beams with D/B > 3 shall be laterally restrained as per detail on page 9
5. Not all sizes of SmartLVL in this table are stocked in each state. Please check with your supplier before ordering.

Ceiling joists

AS 4055 wind classification N1-N4 and C1-C3

Ceiling mass 20 kg/m²



EXAMPLE:

wind speed = N4
ceiling mass = 20 kg/m²
ceiling Joist span = 4500 mm (single span)
ceiling Joist spacing = 450 mm

Enter single span table at 450 mm in joist spacing column,
read down to a span equal to or greater than 4500 mm

ADOPT:

SmartLVL 13 - 150x45

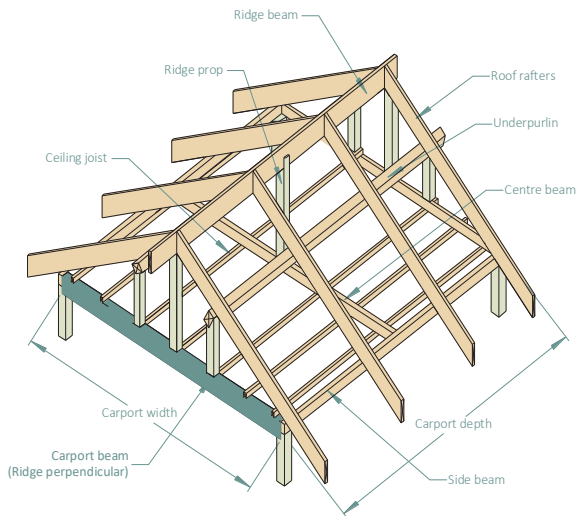
Ceiling joist spacing (mm)	450	600	900	1200	450	600	900	1200
Member size DxB (mm)	Maximum recommended single span (mm)				Maximum recommended continuous span (mm)			
90x45	2200	2200	2200	2200	2600	2600	2600	2600
130x45	3800	3900	3600	3300	4500	4500	4500	4100
150x45	4800	4600	4100	3800	5600	5600	5400	4700
170x45	5300	5000	4600	4300	6600	6300	5900	5400
200x45	5900	5600	5200	4900	7400	7000	6600	6200
240x45	6600	6300	5900	5600	8300	7900	7400	7000
300x45	7600	7300	6900	6500	9500	9200	8600	8200
360x45	8500	8200	7700	7400	10700	10300	9700	9300
90x63	2600	2600	2600	2600	3100	3100	3100	3100
130x63	4600	4300	3900	3600	5400	5400	5200	4900
150x63	5100	4900	4500	4200	6400	6100	5700	5400
170x63	5500	5300	5000	4700	7000	6700	6200	5900
200x63	6100	5900	5500	5300	7700	7400	7000	6600
240x63	6900	6600	6200	6000	8700	8300	7900	7500
300x63	7900	7600	7200	6900	9900	9600	9100	8700
360x63	8800	8500	8100	7800	11000	10700	10200	9800
400x63	9300	9100	8700	8300	11800	11400	10900	10500
450x63	10000	9700	9300	9000	12000	12000	11800	11300
300x75	8000	7800	7400	7100	10100	9800	9300	8900
400x75	9500	9200	8900	8500	11900	11600	11100	10700

NOTES:

1. D = member depth, B = member breadth
2. Do not walk on joists during construction unless a construction plank is in place or overbatten, minimum of 35 x 70 F5
3. Minimum end/internal bearing length of 70 mm
4. Not all sizes of SmartLVL in this table are stocked in each state. Please check with your supplier before ordering.

Carport beam - Ridge perpendicular AS 4055 classification N1 - N4 and C1 - C3

Ceiling mass - 20 kg/m²



EXAMPLE:

wind speed = N3
sheet roof - 20 kg/m²
Carport side depth 5300 mm
Carport beam span 4800 mm

Enter span table at carport depth of 5400 mm, and read down to a span equal to or greater than 4800 mm for a 20 kg/m² roof

ADOPT:

SmartLVL 13 - 2/200x45

N1– N4

Size DxB (mm)	Roof mass (kg/m ²)	Carport depth (side)				
		5200	5400	5600	5800	6000
		Maximum recommended carport beam span (mm)				
2/200x45	20	4900	4800	4800	4700	4700
	70	4100	4100	4000	4000	4000
2/240x45	20	5500	5500	5400	5400	5400
	70	4700	4600	4600	4600	4500
2/300x45	20	6400	6400	6300	6300	6300
	70	5500	5500	5400	5400	5300
2/360x45	20	7300	7200	7200	7100	7100
	70	6300	6200	6200	6100	6100
2/400x45	20	7800	7700	7700	7700	7600
	70	6800	6700	6600	6600	6500
200x63	20	4500	4500	4400	4400	4400
	70	3800	3700	3700	3700	3700
240x63	20	5100	5100	5100	5000	5000
	70	4300	4300	4200	4200	4200
300x63	20	6000	6000	5900	5900	5800
	70	5100	5000	5000	5000	4900
360x63	20	6800	6800	6700	6700	6600
	70	5800	5800	5700	5700	5600
400x63	20	7300	7300	7200	7200	7100
	70	6300	6200	6200	6100	6100
450x63	20	7900	7900	7800	7800	7700
	70	6800	6800	6700	6700	6600
300x75	20	6200	6200	6100	6100	6000
	70	5300	5200	5200	5200	5100
400x75	20	7600	7500	7500	7400	7400
	70	6500	6400	6400	6300	6300

C1– C3

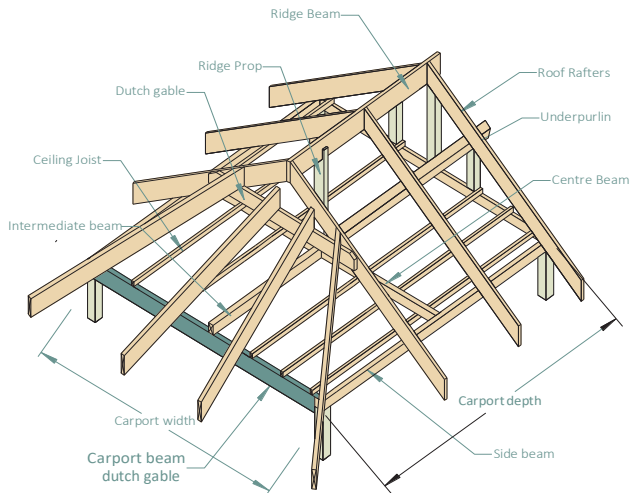
Size DxB (mm)	Roof mass (kg/m ²)	Carport depth (side)				
		5200	5400	5600	5800	6000
		Maximum recommended carport beam span (mm)				
2/200x45	20	4900	4800	4800	4700	4700
	70	4100	4100	4000	4000	4000
2/240x45	20	5500	5500	5400	5400	5400
	70	4700	4600	4600	4600	4500
2/300x45	20	6400	6400	6300	6300	6300
	70	5500	5500	5400	5400	5300
2/360x45	20	7300	7200	7200	7100	7100
	70	6300	6200	6200	6100	6100
2/400x45	20	7800	7700	7700	7700	7600
	70	6800	6700	6600	6600	6500
200x63	20	4500	4500	4400	4400	4400
	70	3800	3700	3700	3700	3700
240x63	20	5100	5100	5100	5000	5000
	70	4300	4300	4200	4200	4200
300x63	20	6000	6000	5900	5900	5800
	70	5100	5000	5000	5000	4900
360x63	20	6800	6800	6700	6700	6600
	70	5800	5800	5700	5700	5600
400x63	20	7300	7300	7200	7200	7100
	70	6300	6200	6200	6100	6100
450x63	20	7900	7900	7800	7800	7700
	70	6800	6800	6700	6700	6600
300x75	20	6200	6200	6100	6100	6000
	70	5300	5200	5200	5200	5100
400x75	20	7600	7500	7500	7400	7400
	70	6500	6400	6400	6300	6300

NOTES:

1. D = member depth, B = member breadth, NS = not suitable.
2. The above table was based on a maximum ceiling mass of 20 kg/m²
3. Minimum bearing length = 70 mm at end supports
4. Not all sizes in this table are stocked in each state. Please check with your supplier before ordering

Carport beam - Hip and Dutch Gable over opening AS 4055 classification N1 – N4 and C1-C3

Ceiling mass - 20 kg/m²



EXAMPLE:

wind speed = N3
sheet roof - 20 kg/m²
Carport side depth 5300 mm
Carport beam span 4800 mm

Enter span table at carport depth of 5400 mm, and read down to a span equal to or greater than 4800 mm for a 20 kg/m² roof

ADOPT:

SmartLVL 13 - 2/200x45

N1– N4

Size DxB (mm)	Roof mass (kg/m ²)	Carport depth (side)				
		5200	5400	5600	5800	6000
		Maximum recommended carport beam span (mm)				
2/200x45	20	4900	4900	4800	4800	4800
	70	4300	4300	4200	4200	4200
2/240x45	20	5500	5500	5500	5400	5400
	70	4900	4900	4800	4800	4800
2/300x45	20	6500	6400	6400	6300	6300
	70	5700	5700	5700	5600	5600
2/360x45	20	7300	7200	7200	7100	7100
	70	6500	6500	6400	6400	6300
2/400x45	20	7800	7700	7700	7700	7600
	70	7000	7000	6900	6900	6800
200x63	20	4600	4500	4500	4500	4400
	70	4000	3900	3900	3900	3800
240x63	20	5200	5100	5100	5100	5000
	70	4500	4500	4500	4400	4400
300x63	20	6100	6000	6000	5900	5900
	70	5300	5300	5200	5200	5200
360x63	20	6900	6800	6800	6700	6700
	70	6100	6000	6000	5900	5900
400x63	20	7400	7300	7300	7200	7200
	70	6500	6500	6400	6400	6300
450x63	20	8000	7900	7900	7800	7800
	70	7100	7000	7000	6900	6900
300x75	20	6200	6200	6200	6100	6100
	70	5500	5500	5400	5400	5400
400x75	20	7600	7500	7500	7400	7400
	70	6800	6700	6700	6600	6600

C1– C3

Size DxB (mm)	Roof mass (kg/m ²)	Carport depth (side)				
		5200	5400	5600	5800	6000
		Maximum recommended carport beam span (mm)				
2/200x45	20	4900	4900	4800	4800	4800
	70	4300	4300	4200	4200	4200
2/240x45	20	5500	5500	5500	5400	5400
	70	4900	4900	4800	4800	4800
2/300x45	20	6500	6400	6400	6300	6300
	70	5700	5700	5700	5600	5600
2/360x45	20	7300	7200	7200	7100	7100
	70	6500	6500	6400	6400	6300
2/400x45	20	7800	7700	7700	7700	7600
	70	7000	7000	6900	6900	6800
200x63	20	4600	4500	4500	4500	4400
	70	4000	3900	3900	3900	3800
240x63	20	5200	5100	5100	5100	5000
	70	4500	4500	4500	4400	4400
300x63	20	6100	6000	6000	5900	5900
	70	5300	5300	5200	5200	5200
360x63	20	6900	6800	6800	6700	6700
	70	6100	6000	6000	5900	5900
400x63	20	7400	7300	7300	7200	7200
	70	6500	6500	6400	6400	6300
450x63	20	8000	7900	7900	7800	7800
	70	7100	7000	7000	6900	6900
300x75	20	6200	6200	6200	6100	6100
	70	5500	5500	5400	5400	5400
400x75	20	7600	7500	7500	7400	7400
	70	6800	6700	6700	6600	6600

NOTES:

1. D = member depth, B = member breadth, NS = not suitable.
2. The above table was based on a maximum ceiling mass of 20 kg/m²
3. Minimum bearing length = 70 mm at end supports
4. Not all sizes in this table are stocked in each state. Please check with your supplier before ordering

Supplementary information

Typical Western Australian specific applications



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Strutting/counter beam supporting underpurlins & hanging beam—Sheet roof AS 4055 classification N1 - N3

Roof and ceiling mass 35 kg/m²

EXAMPLE:

wind speed = N2

total of underpurlin span 'A' = 5000 mm

total of rafter span 'B' = 4200 mm

roof area supported = (A/2) x (B/2)

= (5000/2) x (4200/2)

= 5250000 mm² (Convert to m²)

= 5250000/1000000 = 5.25 m²

total of hanging beam span 'X' = 4500 mm

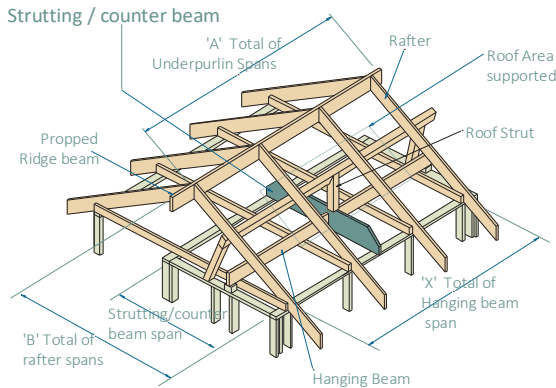
effective beam spacing = 'X' / 2 = 4500 / 2 = 2250 mm

strutting counter beam span = 4500 mm

Enter column at 2500 mm effective beam spacing, 6 m² roof area supported and read down to a span greater than or equal to 4500 mm

ADOPT:

SmartLVL 13 - 300x45



Roof area supported = A/2xB/2 counter/strutting beam spacing = X/2

Effective beam spacing (mm)	1500						2000						2500						3000					
Roof area supported (m ²)	4	6	8	10	12	14	4	6	8	10	12	14	4	6	8	10	12	14	4	6	8	10	12	14
Size DxB (mm)	Maximum beam span (mm)																							
150x45	2800	2500	2200	NS	NS	NS	2700	2400	2200	NS	NS	NS	2700	2400	2100	NS	NS	NS	2600	2300	2100	NS	NS	NS
200x45	3900	3600	3300	3000	2800	NS	3800	3500	3200	3000	2700	NS	3700	3400	3100	2900	2700	NS	3600	3300	3100	2900	2700	NS
240x45	4600	4200	4000	3800	3600	3400	4400	4100	3900	3700	3500	3300	4300	4100	3800	3700	3500	3300	4200	4000	3800	3600	3400	3200
300x45	5500	5100	4900	4600	4400	4200	5300	5000	4800	4500	4400	4200	5200	4900	4700	4500	4300	4100	5100	4800	4600	4400	4200	4100
360x45	6400	6000	5700	5400	5200	5000	6100	5800	5600	5300	5100	5000	6000	5700	5400	5200	5100	4900	5800	5600	5300	5200	5000	4800
150x63	3300	2900	2600	2300	2200	NS	3100	2800	2500	2300	2100	NS	3100	2700	2500	2300	2100	NS	3000	2700	2400	2200	2100	NS
200x63	4300	4000	3700	3500	3300	3100	4200	3900	3600	3400	3200	3000	4100	3800	3600	3400	3200	3000	4000	3700	3500	3300	3100	2900
240x63	5000	4600	4400	4200	4000	3800	4800	4500	4300	4100	3900	3800	4700	4400	4200	4000	3900	3700	4600	4400	4200	4000	3800	3700
300x63	6000	5600	5300	5100	4900	4700	5800	5500	5200	5000	4800	4600	5600	5300	5100	4900	4700	4600	5500	5200	5000	4800	4700	4500
360x63	6900	6500	6200	6000	5700	5500	6600	6300	6100	5800	5600	5500	6500	6200	5900	5700	5500	5400	6300	6000	5800	5600	5500	5300
400x63	7400	7100	6800	6500	6300	6100	7200	6900	6600	6400	6200	6000	7000	6700	6500	6300	6100	5900	6800	6600	6300	6100	6000	5800
450x63	8100	7800	7500	7200	6900	6700	7800	7500	7300	7000	6800	6600	7600	7300	7100	6900	6700	6500	7400	7200	7000	6800	6600	6400
400x75	7700	7400	7100	6800	6600	6400	7500	7200	6900	6700	6500	6300	7200	7000	6700	6500	6300	6200	7100	6800	6600	6400	6200	6100

Effective beam spacing (mm)	3500						4000						4500						5000					
Roof area supported (m ²)	4	6	8	10	12	14	4	6	8	10	12	14	4	6	8	10	12	14	4	6	8	10	12	14
Size DxB (mm)	Maximum beam span (mm)																							
150x45	2500	2300	2100	NS	NS	NS	2500	2200	2000	NS	NS	NS	2400	2200	2000	NS	NS	NS	2400	2200	2000	NS	NS	NS
200x45	3600	3300	3000	2800	2600	NS	3500	3200	3000	2800	2600	NS	3400	3100	2900	2700	2600	NS	3300	3100	2900	2700	2600	NS
240x45	4100	3900	3700	3600	3400	3200	4100	3900	3700	3500	3300	3200	4000	3800	3600	3500	3300	3100	3900	3700	3600	3400	3200	3100
300x45	4900	4700	4500	4300	4200	4100	4800	4600	4400	4300	4100	4000	4800	4600	4400	4200	4100	4000	4700	4500	4300	4200	4100	3900
360x45	5700	5500	5300	5100	4900	4800	5600	5400	5200	5000	4900	4700	5500	5300	5100	4900	4800	4700	5400	5200	5000	4900	4700	4600
150x63	2900	2600	2400	2200	2100	NS	2800	2600	2400	2200	2100	NS	2800	2500	2300	2200	2000	NS	2700	2500	2300	2100	2000	NS
200x63	3900	3700	3500	3300	3100	2900	3800	3600	3400	3200	3000	2900	3800	3600	3400	3200	3000	2800	3700	3500	3300	3100	3000	2800
240x63	4500	4300	4100	3900	3800	3700	4400	4200	4000	3900	3700	3600	4300	4100	4000	3800	3700	3600	4300	4100	3900	3800	3700	3600
300x63	5400	5100	4900	4800	4600	4500	5300	5000	4900	4700	4600	4400	5200	5000	4800	4600	4500	4400	5100	4900	4700	4600	4500	4300
360x63	6100	5900	5700	5500	5400	5200	6000	5800	5600	5500	5300	5200	5900	5700	5600	5400	5300	5100	5800	5600	5500	5300	5200	5100
400x63	6600	6400	6200	6000	5900	5700	6500	6300	6100	6000	5800	5700	6400	6200	6000	5900	5700	5600	6300	6100	5900	5800	5700	5500
450x63	7200	7000	6800	6700	6500	6300	7100	6900	6700	6500	6400	6200	7000	6800	6600	6500	6300	6200	6900	6700	6500	6400	6200	6100
400x75	6900	6700	6500	6300	6200	6000	6800	6600	6400	6200	6100	5900	6700	6500	6300	6100	6000	5900	6500	6400	6200	6100	5900	5800

Notes:

(i) D = member depth, B = member breadth, NS = not suitable.

(ii) The above table was based on a maximum combined roof and ceiling mass of 35 kg/m²

(iii) Minimum bearing length = 70 mm at end supports.

Strutting/counter beam supporting underpurlins & hanging beam—Sheet roof AS 4055 classification N4, C1-C3

Roof and ceiling mass 35 kg/m²

EXAMPLE:

wind speed = N2

total of underpurlin span 'A' = 5000 mm

total of rafter span 'B' = 4200 mm

roof area supported = (A/2) x (B/2)

= (5000/2) x (4200/2)

= 5250000 mm² (Convert to m²)

= 5250000/1000000 = 5.25 m²

total of hanging beam span 'X' = 4500 mm

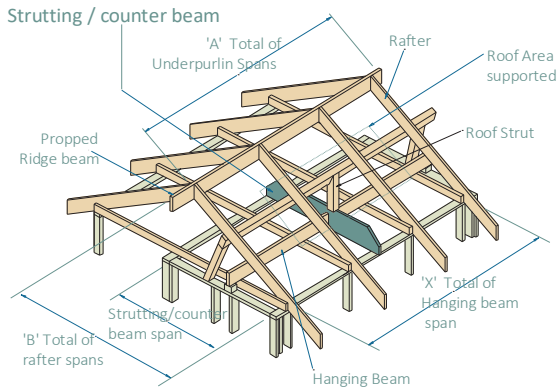
effective beam spacing = 'X' / 2 = 4500 / 2 = 2250 mm

strutting counter beam span = 4500 mm

Enter column at 2500 mm effective beam spacing, 6 m² roof area supported and read down to a span greater than or equal to 4500 mm

ADOPT:

SmartLVL 13 - 300x45



Roof area supported = A/2xB/2 counter/strutting beam spacing = X/2

Effective beam spacing (mm)	1500						2000						2500						3000					
Roof area supported (m ²)	4	6	8	10	12	14	4	6	8	10	12	14	4	6	8	10	12	14	4	6	8	10	12	14
Size DxB (mm)	Maximum beam span (mm)																							
150x45	1600	1100	NS	NS	NS	NS	1600	1100	NS	NS	NS	NS	1600	1100	NS	NS	NS	NS	1600	1100	NS	NS	NS	NS
200x45	2800	1900	1400	1100	NS	NS	2800	1900	1400	1100	NS	NS	2900	1900	1400	1100	NS	NS	2900	1900	1400	1100	NS	NS
240x45	4100	2700	2000	1600	1300	1100	4100	2700	2000	1600	1300	1100	4100	2700	2000	1600	1300	1100	4200	2700	2000	1600	1300	1100
300x45	5500	4100	3100	2400	2000	1700	5300	4200	3100	2400	2000	1700	5200	4200	3100	2400	2000	1700	5100	4200	3100	2400	2000	1700
360x45	6400	5900	4300	3400	2900	2400	6100	5800	4400	3500	2900	2400	6000	5700	4400	3500	2900	2400	5800	5600	4400	3500	2900	2400
150x63	2300	1600	1100	NS	NS	NS	2300	1600	1100	NS	NS	NS	2300	1600	1100	NS	NS	NS	2400	1600	1200	NS	NS	NS
200x63	4000	2700	2000	1600	1300	1100	4100	2700	2000	1600	1300	1100	4100	2700	2000	1600	1300	1100	4000	2700	2000	1600	1300	1100
240x63	5000	3800	2800	2200	1900	1600	4800	3900	2800	2300	1900	1600	4700	3900	2900	2300	1900	1600	4600	3900	2900	2300	1900	1600
300x63	6000	5600	4300	3400	2800	2400	5800	5500	4400	3400	2800	2400	5600	5300	4400	3500	2900	2400	5500	5200	4400	3500	2900	2400
360x63	6900	6500	6100	4900	4000	3400	6600	6300	6100	4900	4000	3400	6400	6200	5900	4900	4000	3400	6300	6000	5800	4900	4100	3500
400x63	7400	7100	6800	5900	4900	4100	7200	6900	6600	5900	4900	4200	7000	6700	6500	6000	4900	4200	6800	6600	6300	6000	4900	4200
450x63	8100	7800	7500	7200	6100	5200	7800	7500	7300	7000	6200	5200	7600	7300	7100	6900	6200	5200	7400	7200	7000	6800	6200	5300
400x75	7700	7400	7100	6800	5800	4900	7400	7200	6900	6700	5900	5000	7200	7000	6700	6500	5900	5000	7000	6800	6600	6400	5900	5000

Effective beam spacing (mm)	3500						4000						4500						5000					
Roof area supported (m ²)	4	6	8	10	12	14	4	6	8	10	12	14	4	6	8	10	12	14	4	6	8	10	12	14
Size DxB (mm)	Maximum beam span (mm)																							
150x45	1600	1100	NS	NS	NS	NS	1700	1100	NS	NS	NS	NS	1700	1100	NS	NS	NS	NS	1700	1100	NS	NS	NS	NS
200x45	2900	1900	1400	1100	NS	NS	2900	1900	1400	1100	NS	NS	3000	1900	1400	1100	NS	NS	3000	1900	1400	1100	NS	NS
240x45	4100	2800	2000	1600	1300	1100	4100	2800	2000	1600	1300	1100	4000	2800	2000	1600	1300	1100	3900	2800	2000	1600	1300	1100
300x45	4900	4300	3100	2500	2000	1700	4800	4300	3100	2500	2000	1700	4800	4300	3100	2500	2000	1700	4700	4400	3100	2500	2000	1700
360x45	5700	5500	4500	3500	2900	2400	5600	5400	4500	3500	2900	2500	5500	5300	4500	3500	2900	2500	5400	5200	4500	3500	2900	2500
150x63	2400	1600	1200	NS	NS	NS	2400	1600	1200	NS	NS	NS	2400	1600	1200	NS	NS	NS	2400	1600	1200	NS	NS	NS
200x63	3900	2700	2000	1600	1300	1100	3800	2800	2000	1600	1300	1100	3800	2800	2000	1600	1300	1100	3700	2800	2000	1600	1300	1100
240x63	4500	4000	2900	2300	1900	1600	4400	4000	2900	2300	1900	1600	4300	4000	2900	2300	1900	1600	4300	4000	2900	2300	1900	1600
300x63	5400	5100	4400	3500	2900	2400	5300	5000	4500	3500	2900	2400	5200	5000	4500	3500	2900	2400	5100	4900	4500	3500	2900	2500
360x63	6200	5900	5700	5000	4100	3500	6000	5800	5600	5000	4100	3500	5900	5700	5600	5000	4100	3500	5800	5600	5500	5100	4100	3500
400x63	6600	6400	6200	6000	5000	4200	6500	6300	6100	6000	5000	4200	6400	6200	6000	5900	5000	4200	6300	6100	5900	5800	5000	4200
450x63	7200	7000	6800	6700	6300	5300	7100	6900	6700	6500	6300	5300	7000	6800	6600	6500	6300	5300	6800	6700	6500	6400	6200	5300
400x75	6900	6700	6500	6300	6000	5000	6800	6600	6400	6200	6000	5000	6600	6500	6300	6100	6000	5100	6500	6400	6200	6100	5900	5100

Notes:

- (i) D = member depth, B = member breadth, NS = not suitable.
- (ii) The above table was based on a maximum combined roof and ceiling mass of 35 kg/m²
- (iii) Minimum bearing length = 70 mm at end supports.

SmartSplay® 13 roof void beams

Introduction

The need to chamfer the ends of roof beams to avoid interference with roof cladding requires consideration by designers.

Where the slope of rafters is such that the depth of the beam must be reduced by more than two-thirds, special provision shall be made for additional support.

Figure 7.3 from AS 1684 (reproduced opposite) gives a “deemed to comply” solution to the reinforcement of the roof beam by the addition of a Jack Joist (trimmer) to the underside of the roof beam. The additional requirement is for the roof beam to be bolted to the rafter and the jack joist fastened to the roof beam with a timber cleat or metal strap. The standard however does not give guidance on the size of any timber cleats or metal straps.

The introduction of LVL with its inherent strength properties and length availability combined with existing claw nail plate technology allows the prefabrication of SmartSplay roof-void beams with the jack joist (trimmer) in the above diagram nailed together prior to installation.

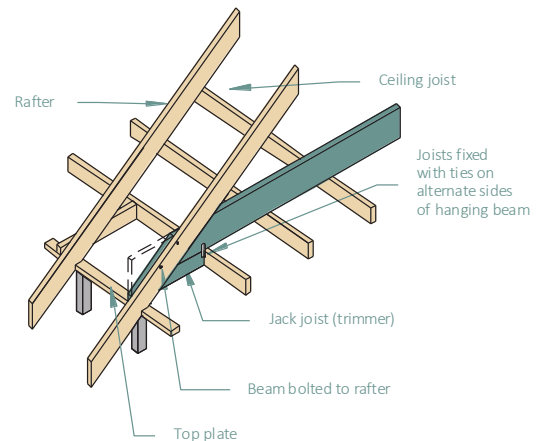
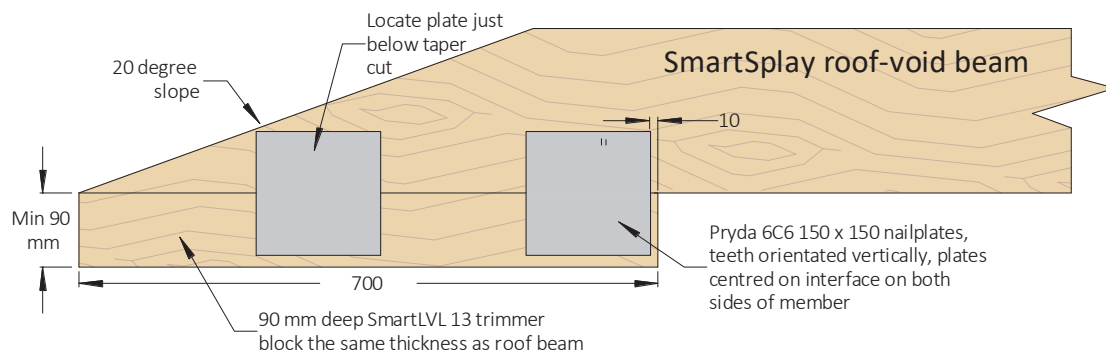


Figure 7.3 AS 1684.2

SmartSplay® 13 roof void beam



The SmartSplay 13 roof void beam is available from SmartFrame stockists in length multiples of 300 mm.

Basis of tables

The following tables have been prepared for the common applications for pre-fabricated SmartSplay 13 Roof-void beams in the Western Australian domestic residential market. The mechanical properties of the SmartLVL Roof-void beam have been developed using standard engineering principles and full scale prototype tests in accordance with Appendix D of AS 1720.1 - Acceptance testing of timber structures and elements.

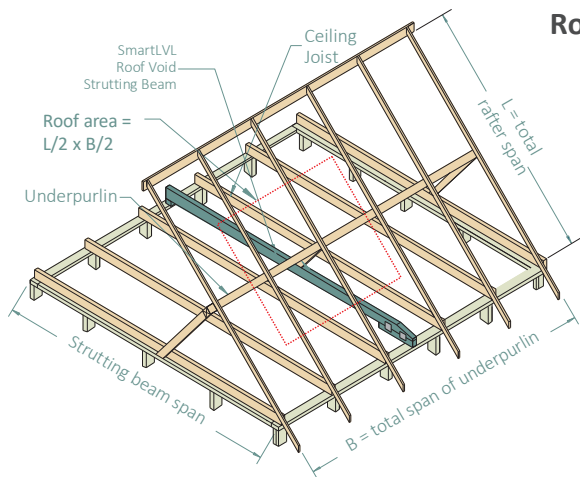
Construction detailing

The roof construction detailing of the pre-fabricated SmartSplay roof-void beam are the same as for non-chamfered roof beams, and must be installed and restrained in accordance with AS 1684 and good building practice. Restraint examples suitable for SmartSplay roof-void beams are shown on page 5.

Limitations of use

The tables for the SmartSplay 13 Roof-void beams are specific to the use clearly shown. The use of a SmartSplay 13 Roof-void beam in any other application (e.g. floor joists) is outside the scope of this Design Guide. SmartSplay 13 Roof-void beams may have applications in other areas but prospective users should contact Tilling Timber on 1300 668 690 or techsupport@tilling.com.au for further engineering advice.

Single SmartSplay strutting beams supporting underpurlins ONLY AS 4055 wind classification N1-N4



Roof Mass 35 kg/m²

EXAMPLE:

single span
sheet roof
strutting beam span = 4500 mm
total of underpurlin span B = 4.5 m
total of rafter span L = 4.0 m
roof area supported = $L/2 \times B/2 = 4.0/2 \times 4.5/2 = 4.5 \text{ m}^2$

Enter table at 5 m² roof area supported column and read down to span equal to or greater than 4500 mm in the 20 kg/m² row

ADOPT

SmartSplay 13 Roof-void beam 240x45

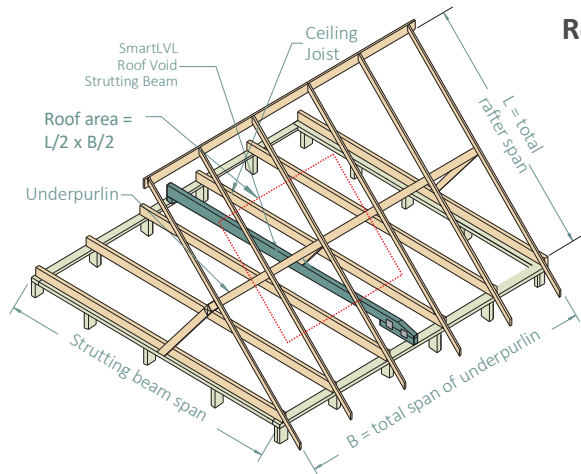
Roof area supported (m ²)	Roof mass (kg/m ²)	2	3	4	5	6	7	8	10
Size Dx B (mm)		Maximum recommended roof strutting beam span (mm)							
150x45	20	3800	3500	3100	2800	2500	2400	2200	2000
	60	2900	2400	2000	1800	1700	1500	1400	1200
170x45	20	4500	4200	3700	3300	3100	2800	2700	2400
	60	3400	2800	2500	2200	2000	1900	1700	1300
200x45	20	5500	5200	4600	4200	3900	3600	3400	3000
	60	4300	3600	3100	2800	2600	2400	2200	1600
240x45	20	6600	6300	5900	5400	5000	4700	4400	4000
	60	5500	4700	4100	3700	3400	3100	2900	1900
300x45	20	6600	6600	6600	6600	6500	6200	6000	5500
	60	6600	6200	5600	5100	4700	4400	3600	2400
360x45	20	6600	6600	6600	6600	6600	6600	6600	6600
	60	6600	6600	6600	6400	6000	5700	4300	2900
400x45	20	6600	6600	6600	6600	6600	6600	6600	6600
	60	6600	6600	6600	6600	6600	6400	4800	3200
150x63	20	4400	4000	3600	3200	3000	2800	2600	2300
	60	3300	2800	2400	2200	2000	1800	1700	1200
170x63	20	5200	4800	4300	3900	3600	3300	3100	2800
	60	4000	3300	2900	2600	2400	2200	2000	1300
200x63	20	6200	5800	5300	4800	4500	4200	4000	3600
	60	4900	4200	3700	3300	3000	2800	2400	1600
240x63	20	6600	6600	6400	6100	5700	5400	5100	4600
	60	6200	5400	4800	4300	4000	3700	2900	1900
300x63	20	6600	6600	6600	6600	6600	6600	6600	6100
	60	6600	6600	6300	5900	5500	4900	3400	2300
360x63	20	6600	6600	6600	6600	6600	6600	6600	6600
	60	6600	6600	6600	6600	6600	5700	4100	2800
400x63	20	6600	6600	6600	6600	6600	6600	6600	6600
	60	6600	6600	6600	6600	6600	6200	4600	3100
450x63	20	6600	6600	6600	6600	6600	6600	6600	6600
	60	6600	6600	6600	6600	6600	6600	6600	6600
300x75	20	6600	6600	6600	6600	6600	6600	6600	6100
	60	6600	6600	6600	6200	5900	4900	3500	2300
400x75	20	6600	6600	6600	6600	6600	6600	6600	6600
	60	6600	6600	6600	6600	6600	6100	4500	3100

NOTES

Roof void chamfer on one end only

- Minimum end bearing length = 65 mm
- Top edge of strutting beams with D/B > 3 shall be laterally restrained as per details on page 9
- A minimum initial clearance of 25 mm at mid span to ceiling framing members should be provided

Double SmartSplay strutting beams supporting underpurlins ONLY AS 4055 wind classification N1-N4



Roof Mass 35 kg/m²

EXAMPLE:

single span
sheet roof
strutting beam span = 4500 mm
total of underpurlin span B = 4.5 m
total of rafter span L = 4.0 m
roof area supported = $L/2 \times B/2 = 4.0/2 \times 4.5/2 = 4.5 \text{ m}^2$

Enter table at 5 m² roof area supported column and read down to span equal to or greater than 4500 mm in the 20 kg/m² row

ADOPT

SmartSplay 13 Roof-void beam 240x45

Roof area supported (m ²)	Roof mass (kg/m ²)	2	3	4	5	6	7	8	10
Size Dx B (mm)		Maximum recommended roof strutting beam span (mm)							
150x45	20	3600	3400	3000	2700	2400	2300	2100	1900
	60	2700	2300	2000	1800	1600	1500	1400	1200
170x45	20	4300	4000	3500	3200	2900	2700	2600	2300
	60	3300	2700	2400	2100	1900	1800	1700	1500
200x45	20	5300	5000	4400	4000	3700	3500	3200	2900
	60	4100	3500	3000	2700	2500	2300	2100	1900
240x45	20	6400	6100	5600	5200	4800	4500	4200	3800
	60	5300	4500	3900	3500	3200	3000	2800	2500
300x45	20	6600	6600	6600	6500	6200	6000	5800	5200
	60	6600	6000	5400	4900	4500	4200	3900	3500
360x45	20	6600	6600	6600	6600	6600	6600	6600	6400
	60	6600	6600	6500	6100	5800	5500	5100	4600
400x45	20	6600	6600	6600	6600	6600	6600	6600	6600
	60	6600	6600	6600	6600	6400	6100	5900	5400
150x63	20	4300	3900	3400	3100	2900	2700	2500	2200
	60	3200	2700	2300	2100	1900	1800	1600	1500
170x63	20	5000	4600	4100	3700	3400	3200	3000	2700
	60	3800	3200	2800	2500	2300	2100	2000	1800
200x63	20	5900	5600	5100	4600	4300	4000	3800	3400
	60	4700	4000	3500	3200	2900	2700	2500	2300
240x63	20	6600	6600	6200	5800	5500	5200	4900	4400
	60	5900	5200	4600	4100	3800	3500	3300	3000
300x63	20	6600	6600	6600	6600	6600	6500	6300	5900
	60	6600	6500	6100	5700	5200	4900	4600	4100
360x63	20	6600	6600	6600	6600	6600	6600	6600	6600
	60	6600	6600	6600	6600	6400	6100	5900	5400
400x63	20	6600	6600	6600	6600	6600	6600	6600	6600
	60	6600	6600	6600	6600	6600	6600	6500	6100
450x63	20	6600	6600	6600	6600	6600	6600	6600	6600
	60	6600	6600	6600	6600	6600	6600	6600	6600
300x75	20	6600	6600	6600	6600	6600	6600	6600	6200
	60	6600	6600	6300	6000	5600	5300	5000	4500
400x75	20	6600	6600	6600	6600	6600	6600	6600	6600
	60	6600	6600	6600	6600	6600	6600	6600	6400

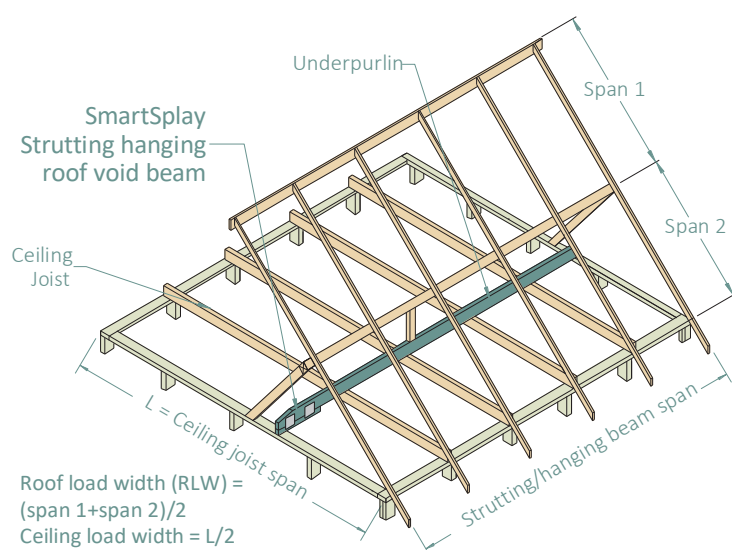
NOTES

Roof void chamfer on one end only

- Minimum end bearing length = 65 mm
- Top edge of strutting beams with D/B >3 shall be laterally restrained as per details on page 9
- A minimum initial clearance of 25 mm at mid span to ceiling framing members should be provided

Single SmartSplay strutting/hanging beams supporting underpurlins & ceiling joists

AS 4055 wind classification N1 - N3



EXAMPLE:

single span
sheet roof
strutting / hanging beam span = 3500 mm
total ceiling joist span A = 6000 mm
ceiling load width = A / 2 = 3000 mm
span 1 = 3 m
span 2 = 4 m
roof load width = (3+4) / 2 = 3.5 m

Enter table at 3000 mm ceiling load width, 3.6 m roof load width and read down to span equal to or greater than 3500 mm in the 40 kg/m² row

ADOPT

SmartSplay 13 Roof-void beam 240x45

Ceiling load width (mm)	Roof mass (kg/m ²)	2400				3000				4200			
Roof load width (m)		1.8	2.4	3.0	3.6	1.8	2.4	3.0	3.6	1.8	2.4	3.0	3.6
Size DxB (mm)		Maximum recommended strutting/hanging beam span (mm)											
150x45	40	2700	2500	2400	2200	2600	2400	2300	2100	2300	2200	2100	2000
	75	2300	2100	2000	NS	2300	2100	NS	NS	2100	2000	NS	NS
170x45	40	3100	2900	2800	2600	3000	2800	2700	2500	2700	2600	2500	2400
	75	2800	2500	2300	2200	2600	2400	2300	2100	2400	2300	2100	2000
200x45	40	3700	3600	3400	3200	3600	3400	3200	3100	3200	3100	3000	2900
	75	3400	3100	2900	2700	3200	3000	2800	2700	3000	2800	2600	2500
240x45	40	4300	4200	4000	3900	4100	4000	3900	3800	3800	3700	3700	3600
	75	4000	3800	3700	3500	3900	3700	3600	3400	3600	3500	3300	3200
300x45	40	5200	5000	4900	4700	5000	4800	4700	4600	4600	4500	4400	4300
	75	4900	4600	4500	4300	4700	4500	4300	4200	4400	4200	4100	4000
360x45	40	6000	5800	5700	5500	5700	5600	5500	5300	5300	5200	5100	5000
	75	5700	5400	5200	5100	5400	5300	5100	4900	5100	4900	4800	4700
150x63	40	3100	2900	2700	2600	2900	2700	2600	2500	2600	2500	2400	2300
	75	2700	2500	2300	2100	2600	2400	2200	2100	2400	2200	2100	2000
170x63	40	3600	3400	3200	3000	3400	3200	3000	2900	3000	2900	2800	2700
	75	3200	2900	2700	2500	3000	2800	2600	2500	2800	2600	2500	2300
200x63	40	4100	3900	3800	3700	3900	3800	3700	3600	3600	3500	3400	3300
	75	3800	3600	3400	3200	3600	3400	3200	3100	3400	3200	3000	2900
240x63	40	4700	4600	4400	4300	4500	4400	4300	4200	4200	4100	4000	3900
	75	4400	4200	4000	3900	4300	4100	3900	3800	4000	3800	3700	3600
300x63	40	5600	5500	5300	5200	5400	5300	5100	5000	5000	4900	4800	4700
	75	5300	5100	4900	4700	5100	4900	4800	4600	4800	4600	4500	4400
360x63	40	6500	6300	6200	6000	6200	6100	5900	5800	5700	5600	5500	5400
	75	6200	5900	5700	5500	5900	5700	5600	5400	5500	5400	5200	5100
400x63	40	6600	6600	6600	6600	6600	6600	6500	6300	6100	6100	6000	5900
	75	6600	6500	6300	6100	6400	6200	6100	5900	6000	5900	5700	5600
450x63	40	6600	6600	6600	6600	6600	6600	6600	6600	6600	6600	6600	6500
	75	6600	6600	6600	6600	6600	6600	6600	6500	6600	6400	6300	6200
300x75	40	5900	5700	5600	5400	5600	5500	5400	5200	5200	5100	5000	4900
	75	5500	5300	5100	5000	5300	5200	5000	4800	5000	4900	4700	4600
400x75	40	6600	6600	6600	6600	6600	6600	6600	6600	6100	6100	6200	6200
	75	6600	6600	6500	6300	6600	6500	6300	6200	6200	6100	6000	5900

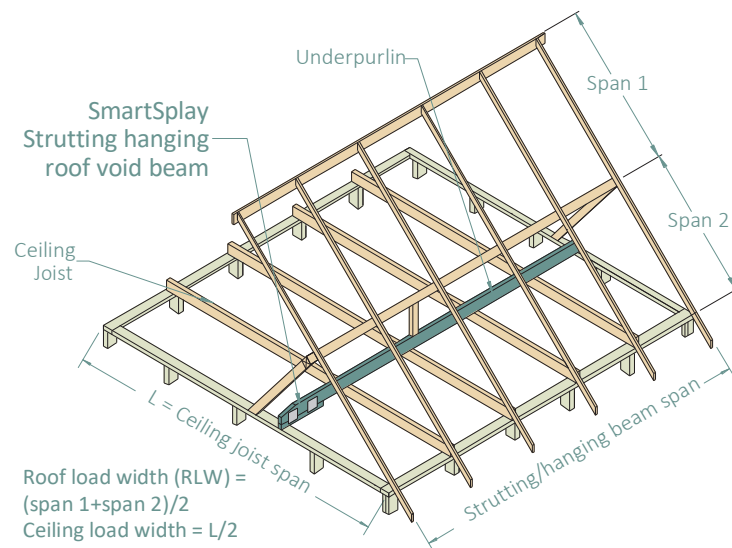
NOTES

Roof void chamfer on one end only

- Minimum end bearing length = 65 mm.
- Top edge of strutting beams with D/B > 3 shall be laterally restrained as per details on page 9

Double SmartSplay strutting/hanging beams supporting underpurlins & ceiling joists

AS 4055 wind classification N1 - N3



EXAMPLE:

single span
sheet roof
strutting / hanging beam span = 3500 mm
total ceiling joist span A = 6000 mm
ceiling load width = A / 2 = 3000 mm
span 1 = 3 m
span 2 = 4 m
roof load width = (3+4) / 2 = 3.5 m

Enter table at 3000 mm ceiling load width, 3.6 m roof load width and read down to span equal to or greater than 3500 mm in the 40 kg/m² row

ADOPT

SmartSplay 13 Roof-void beam 240x45

Ceiling load width (mm)	Roof mass (kg/m ²)	2400				3000				4200			
Roof load width (m)		1.8	2.4	3.0	3.6	1.8	2.4	3.0	3.6	1.8	2.4	3.0	3.6
Size DxB (mm)		Maximum recommended strutting/hanging beam span (mm)											
150x45	40	2600	2400	2300	2100	2500	2300	2200	2100	2200	2100	2000	NS
	75	2300	2000	NS	NS	2200	2000	NS	NS	2000	NS	NS	NS
170x45	40	3000	2800	2700	2500	2900	2700	2600	2400	2600	2500	2400	2300
	75	2700	2400	2200	2100	2500	2300	2200	2000	2400	2200	2100	2000
200x45	40	3600	3400	3300	3100	3400	3300	3100	3000	3100	3000	2900	2800
	75	3300	3000	2800	2600	3100	2900	2700	2500	2900	2700	2500	2400
240x45	40	4200	4000	3900	3800	4000	3900	3800	3700	3700	3600	3500	3400
	75	3900	3700	3500	3400	3700	3600	3400	3300	3500	3400	3200	3100
300x45	40	5000	4900	4700	4600	4800	4700	4500	4400	4400	4300	4200	4200
	75	4700	4500	4300	4100	4500	4300	4200	4000	4200	4100	4000	3800
360x45	40	5800	5600	5500	5300	5500	5400	5300	5200	5100	5000	4900	4800
	75	5500	5200	5000	4900	5300	5100	4900	4700	4900	4800	4600	4500
150x63	40	3000	2800	2600	2500	2800	2600	2500	2400	2500	2400	2300	2200
	75	2600	2400	2200	2000	2500	2300	2100	2000	2300	2200	2000	NS
170x63	40	3400	3200	3100	2900	3200	3100	2900	2800	2900	2800	2700	2600
	75	3000	2800	2600	2400	2900	2700	2500	2400	2700	2500	2400	2300
200x63	40	3900	3800	3600	3500	3800	3600	3500	3400	3500	3400	3300	3200
	75	3600	3400	3200	3000	3500	3300	3100	3000	3300	3100	2900	2800
240x63	40	4600	4400	4300	4100	4400	4200	4100	4000	4000	3900	3900	3800
	75	4200	4000	3900	3700	4100	3900	3800	3600	3800	3700	3600	3500
300x63	40	5400	5300	5100	5000	5200	5100	4900	4800	4800	4700	4600	4500
	75	5100	4900	4700	4600	4900	4800	4600	4400	4600	4500	4300	4200
360x63	40	6300	6100	6000	5800	6000	5900	5700	5600	5500	5400	5300	5300
	75	5900	5700	5500	5300	5700	5500	5400	5200	5300	5200	5100	4900
400x63	40	6600	6600	6500	6300	6500	6400	6200	6100	6000	5900	5800	5700
	75	6500	6200	6000	5800	6200	6000	5900	5700	5800	5700	5500	5400
450x63	40	6600	6600	6600	6600	6600	6600	6600	6600	6600	6500	6400	6300
	75	6600	6600	6600	6500	6600	6600	6400	6300	6400	6200	6100	5900
300x75	40	5700	5500	5400	5200	5400	5300	5200	5100	5000	4900	4800	4700
	75	5300	5100	4900	4800	5200	5000	4800	4700	4800	4700	4600	4400
400x75	40	6600	6600	6600	6600	6600	6600	6500	6400	6200	6100	6100	6000
	75	6600	6500	6300	6100	6500	6300	6100	6000	6100	5900	5800	5600

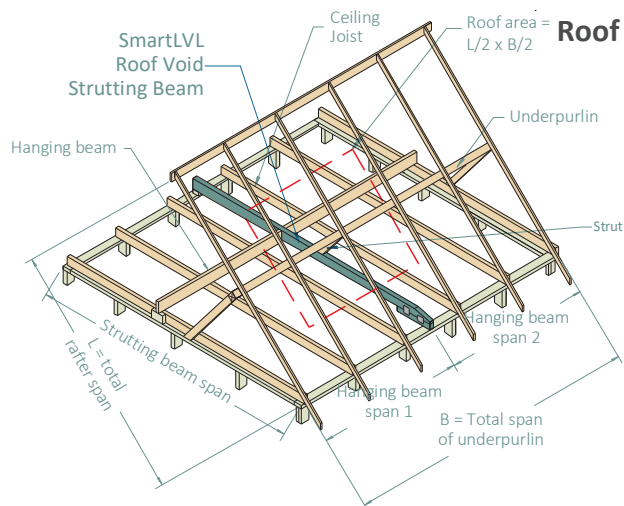
NOTES

Roof void chamfer on one end only

- Minimum end bearing length = 65 mm.
- Top edge of strutting beams with D/B > 3 shall be laterally restrained as per details on page 9

Single splay strutting/counter beams supporting underpurlins and hanging beams

AS 4055 wind classification N1 - N3



Roof Mass 35 kg/m²

EXAMPLE:

single span
sheet roof
strutting/counter beam span = 3500 mm
total of underpurlin span B = 4.5 m
total of rafter span L = 4.0 m
total of hanging beam span = H1 + H2 = 4500 mm
roof area supported = $L/2 \times B/2 = (4/2) \times (4.5/2) = 4.25 \text{ m}^2$
average hanging beam span = $(H1 + H2)/2 = 4500/2 = 2250 \text{ mm}$

Enter table at 2500 mm average hanging beam span column, 6 m² roof area supported and read down to span equal to or greater than 3500 mm

ADOPT

SmartSplay 13 Roof-void beam 240x45

Effective beam spacing (mm)	1500					2000					2500					3000				
Roof area supported (m ²)	4	6	8	10	12	4	6	8	10	12	4	6	8	10	12	4	6	8	10	12
Size DxB (mm)	Maximum beam span (mm)																			
150x45	2700	2400	2100	1900	1800	2600	2300	2100	1900	1700	2600	2300	2000	1900	1700	2500	2200	2000	1800	1700
200x45	3800	3500	3100	2900	2700	3700	3400	3100	2800	2600	3600	3300	3000	2800	2600	3500	3200	2900	2700	2600
240x45	4400	4100	3900	3600	3400	4300	4000	3800	3600	3400	4200	3900	3700	3500	3300	4100	3900	3700	3500	3300
300x45	5300	5000	4700	4500	4300	5200	4900	4600	4400	4200	5000	4800	4500	4300	4200	4900	4700	4500	4300	4100
360x45	6200	5800	5500	5300	5100	6000	5700	5400	5200	5000	5800	5500	5300	5100	4900	5700	5400	5200	5000	4800
150x63	3100	2700	2400	2200	2100	3000	2700	2400	2200	2000	2900	2600	2400	2200	2000	2900	2600	2300	2100	2000
200x63	4200	3800	3600	3300	3100	4000	3800	3500	3300	3100	3900	3700	3500	3200	3000	3900	3600	3400	3200	3000
240x63	4800	4500	4200	4000	3800	4700	4400	4200	4000	3800	4600	4300	4100	3900	3800	4500	4200	4000	3900	3700
300x63	5800	5400	5200	4900	4700	5600	5300	5100	4800	4700	5500	5200	5000	4800	4600	5300	5100	4900	4700	4500
360x63	6700	6300	6000	5800	5600	6400	6100	5900	5700	5500	6300	6000	5800	5600	5400	6100	5900	5700	5500	5300
400x63	7200	6900	6600	6300	6100	7000	6700	6400	6200	6000	6800	6500	6300	6100	5900	6600	6400	6200	6000	5800
450x63	7800	7500	7200	7000	6700	7600	7300	7100	6800	6600	7400	7100	6900	6700	6500	7200	7000	6800	6600	6400
300x75	6000	5700	5400	5200	5000	5800	5500	5300	5100	4900	5700	5400	5200	5000	4800	5500	5300	5100	4900	4700
400x75	7500	7100	6800	6600	6400	7200	6900	6700	6500	6300	7000	6800	6500	6300	6200	6900	6600	6400	6200	6100

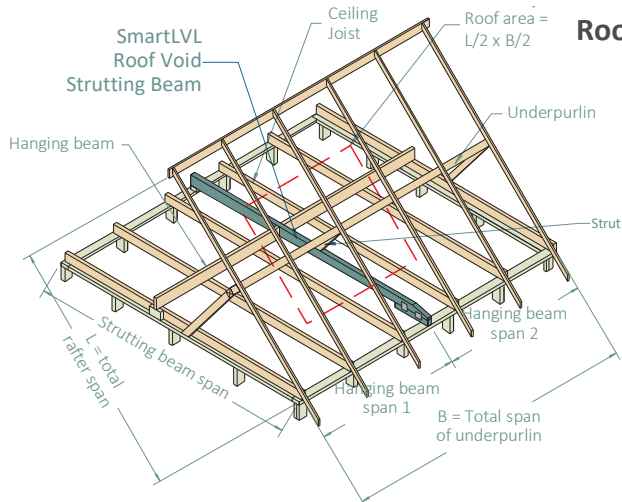
Effective beam spacing (mm)	3500					4000					4500					5000				
Roof area supported (m ²)	4	6	8	10	12	4	6	8	10	12	4	6	8	10	12	4	6	8	10	12
Size DxB (mm)	Maximum beam span (mm)																			
150x45	2800	2400	2100	1900	1800	2400	2100	2000	1800	1700	2300	2100	1900	1800	1700	2300	2100	1900	1800	1600
200x45	3800	3500	3200	2900	2700	3400	3100	2900	2700	2500	3300	3000	2800	2600	2500	3200	3000	2800	2600	2400
240x45	4500	4100	3900	3700	3500	3900	3700	3600	3400	3200	3900	3700	3500	3300	3100	3800	3600	3500	3300	3100
300x45	5400	5000	4700	4500	4300	4700	4500	4300	4200	4000	4600	4400	4300	4100	4000	4600	4400	4200	4100	3900
360x45	6300	5900	5600	5300	5100	5400	5200	5000	4900	4700	5300	5100	5000	4800	4700	5200	5100	4900	4700	4600
150x63	3200	2800	2500	2200	2100	2700	2500	2300	2100	2000	2700	2400	2200	2100	1900	2600	2400	2200	2100	1900
200x63	4200	3900	3600	3400	3100	3700	3500	3300	3100	2900	3700	3400	3200	3000	2900	3600	3400	3200	3000	2800
240x63	4900	4600	4300	4100	3900	4300	4100	3900	3800	3600	4200	4000	3900	3700	3600	4200	4000	3800	3700	3600
300x63	5900	5500	5200	5000	4800	5100	4900	4700	4600	4400	5000	4800	4700	4500	4400	4900	4800	4600	4500	4300
360x63	6800	6400	6100	5800	5600	5900	5700	5500	5300	5200	5800	5600	5400	5200	5100	5700	5500	5300	5200	5000
400x63	7300	6900	6600	6400	6100	6300	6100	6000	5800	5600	6200	6000	5900	5700	5600	6100	5900	5800	5600	5500
450x63	8000	7600	7300	7000	6800	6900	6700	6500	6400	6200	6800	6600	6400	6300	6100	6700	6500	6300	6200	6100
300x75	6100	5700	5500	5200	5000	5300	5100	4900	4800	4600	5200	5000	4900	4700	4600	5100	5000	4800	4700	4500
400x75	7600	7200	6900	6700	6400	6600	6400	6200	6000	5900	6500	6300	6100	6000	5800	6400	6200	6000	5900	5800

Notes:

- (i) D = member depth, B = member breadth, NS = not suitable.
- (ii) The above table was based on a maximum combined roof and ceiling mass of 35 kg/m²
- (iii) Minimum bearing length = 70 mm at end supports.

Double splay strutting/counter beams supporting underpurlins and hanging beams

AS 4055 wind classification N1 - N3



Roof Mass 35 kg/m²

EXAMPLE:

single span
sheet roof
strutting/counter beam span = 3500 mm
total of underpurlin span B = 4.5 m
total of rafter span L = 4.0 m
total of hanging beam span = H1 + H2 = 4500 mm
roof area supported = $L/2 \times B/2 = (4/2) \times (4.5/2) = 4.25 \text{ m}^2$
average hanging beam span = $(H1 + H2)/2 = 4500/2 = 2250 \text{ mm}$

Enter table at 2500 mm average hanging beam span
column, 6 m² roof area supported and read down to span
equal to or greater than 3500 mm

ADOPT

SmartSplay 13 Roof-void beam 240x45

Effective beam spacing (mm)	1500					2000					2500					3000				
Roof area supported (m ²)	4	6	8	10	12	4	6	8	10	12	4	6	8	10	12	4	6	8	10	12
Size DxB (mm)	Maximum beam span (mm)																			
150x45	2600	2300	2000	1800	1700	2500	2200	2000	1800	1700	2500	2200	2000	1800	1600	2400	2100	1900	1800	1600
200x45	3700	3300	3000	2800	2600	3600	3200	2900	2700	2500	3500	3200	2900	2700	2500	3400	3100	2800	2600	2500
240x45	4300	4000	3700	3500	3300	4200	3900	3600	3500	3200	4100	3800	3600	3400	3200	4000	3700	3500	3400	3200
300x45	5100	4800	4500	4300	4100	5000	4700	4400	4200	4100	4900	4600	4400	4200	4000	4700	4500	4300	4100	4000
360x45	6000	5600	5300	5100	4900	5800	5500	5200	5000	4800	5600	5300	5100	4900	4700	5500	5200	5000	4800	4700
150x63	3000	2600	2400	2100	2000	2900	2600	2300	2100	2000	2800	2500	2300	2100	1900	2800	2500	2200	2100	1900
200x63	4000	3700	3500	3200	3000	3900	3600	3400	3100	2900	3800	3600	3300	3100	2900	3700	3500	3300	3000	2900
240x63	4700	4300	4100	3900	3700	4500	4200	4000	3800	3600	4400	4200	3900	3800	3600	4300	4100	3900	3700	3600
300x63	5600	5200	5000	4700	4500	5400	5100	4900	4700	4500	5300	5000	4800	4600	4400	5200	4900	4700	4500	4400
360x63	6400	6100	5800	5600	5300	6200	5900	5700	5500	5300	6100	5800	5600	5400	5200	5900	5700	5500	5300	5100
400x63	7000	6600	6300	6100	5900	6700	6400	6200	6000	5800	6600	6300	6100	5900	5700	6400	6200	6000	5800	5600
450x63	7600	7300	7000	6700	6500	7400	7100	6800	6600	6400	7200	6900	6700	6500	6300	7000	6700	6500	6300	6200
300x75	5800	5500	5200	5000	4800	5600	5300	5100	4900	4700	5500	5200	5000	4800	4600	5400	5100	4900	4700	4600
400x75	7200	6900	6600	6400	6100	7000	6700	6500	6200	6000	6800	6600	6300	6100	5900	6600	6400	6200	6000	5800

Effective beam spacing (mm)	3500					4000					4500					5000				
Roof area supported (m ²)	4	6	8	10	12	4	6	8	10	12	4	6	8	10	12	4	6	8	10	12
Size DxB (mm)	Maximum beam span (mm)																			
150x45	2400	2100	1900	1700	1600	2300	2100	1900	1700	1600	2300	2000	1900	1700	1600	2200	2000	1800	1700	1600
200x45	3300	3000	2800	2600	2400	3200	3000	2700	2600	2400	3200	2900	2700	2500	2400	3100	2900	2700	2500	2400
240x45	3900	3700	3500	3300	3100	3800	3600	3400	3200	3100	3700	3600	3400	3200	3000	3700	3500	3300	3200	3000
300x45	4600	4400	4200	4100	3900	4600	4300	4200	4000	3900	4500	4300	4100	4000	3800	4400	4200	4100	3900	3800
360x45	5400	5100	4900	4800	4600	5200	5000	4900	4700	4500	5200	5000	4800	4600	4500	5100	4900	4700	4600	4400
150x63	2700	2400	2200	2000	1900	2600	2400	2200	2000	1900	2600	2300	2200	2000	1900	2500	2300	2100	2000	1800
200x63	3700	3400	3200	3000	2800	3600	3400	3200	3000	2800	3500	3300	3100	2900	2800	3500	3300	3100	2900	2700
240x63	4200	4000	3800	3700	3500	4200	4000	3800	3600	3500	4100	3900	3700	3600	3500	4000	3800	3700	3600	3400
300x63	5000	4800	4600	4500	4300	4900	4700	4600	4400	4300	4900	4700	4500	4300	4200	4800	4600	4400	4300	4200
360x63	5800	5600	5400	5200	5000	5700	5500	5300	5100	5000	5600	5400	5200	5100	4900	5500	5300	5100	5000	4900
400x63	6300	6000	5800	5700	5500	6100	5900	5800	5600	5400	6000	5800	5700	5500	5400	5900	5800	5600	5400	5300
450x63	6800	6600	6400	6200	6100	6700	6500	6300	6100	6000	6600	6400	6200	6100	5900	6500	6300	6100	6000	5800
300x75	5300	5000	4800	4700	4500	5200	4900	4800	4600	4500	5100	4900	4700	4600	4400	5000	4800	4600	4500	4400
400x75	6500	6300	6100	5900	5800	6400	6200	6000	5800	5700	6300	6100	5900	5800	5600	6200	6000	5800	5700	5600

Notes:

- (i) D = member depth, B = member breadth, NS = not suitable.
- (ii) The above table was based on a maximum combined roof and ceiling mass of 35 kg/m²
- (iii) Minimum bearing length = 70 mm at end supports.

Simplified tables using Equivalent Load Area method (ELAM)

Equivalent load-area method (ELAM)

A system-level structural design methodology in which the design actions on a primary supporting member are determined from the total effective tributary roof area supported by that member, independent of the specific configuration, number, or hierarchy of intermediate framing members that transfer those actions.

Under equivalent load-area method, gravity actions originating from roof coverings, permanent construction, imposed actions, and environmental actions are assumed to be transferred through a compliant load path to the primary supporting member. The resulting design action effects in the primary member are taken as those arising from an equivalent uniformly distributed load derived from the associated tributary area.

The method is intended to provide a conservative and practical representation of structural actions in non-trussed roof systems where multiple beams, rafters, purlins, or similar members act collectively to convey loads to primary supports.

Applicability

The equivalent load-area method is applicable to the design of primary beams or supporting members in residential and light-commercial roof structures where all of the following conditions are satisfied:

- The roof system is non-trussed, or otherwise comprises multiple discrete framing members transferring actions to primary supports.
- Load transfer occurs predominantly through gravity action paths, without reliance on significant arching, tension-only mechanisms, or membrane action.
- Secondary and intermediate members (e.g. rafters, purlins, bearer beams) are proportioned and detailed in accordance with applicable standards to ensure reliable load transfer to the primary member.
- The tributary area contributing to the primary member can be clearly identified and reasonably defined.

Limitations

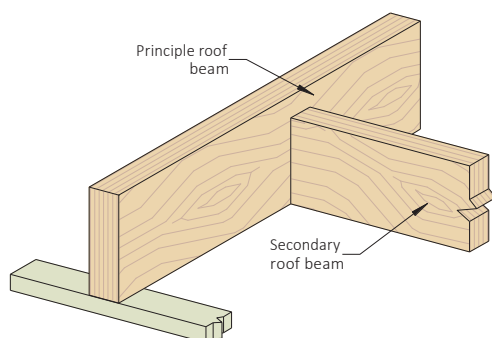
The equivalent load-area method shall not be used where any of the following conditions apply, unless supported by a more detailed structural analysis:

- Structures relying on significant load sharing, redundancy, or redistribution that cannot be conservatively represented by a tributary area approach.
- Roof systems incorporating non-linear behaviour, significant second-order effects, or members sensitive to differential stiffness or compatibility effects.
- Situations where concentrated loads, discontinuous supports, or irregular geometry govern the design actions in the primary member.
- Systems in which serviceability performance (e.g. vibration, differential deflection, or cracking of supported elements) is critical and cannot be adequately assessed using equivalent uniform loading.
- Structures subject to exceptional actions or abnormal load paths not contemplated by standard residential design assumptions.

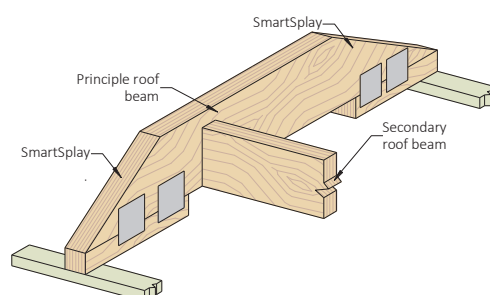
Design responsibility and use of span tables

Span tables derived using the Equivalent Load Area Method:

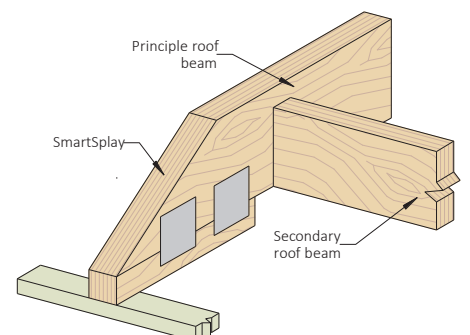
- Represent upper-bound or enveloping solutions for the defined tributary areas and support conditions;
- Do not relieve the designer of responsibility to confirm that the structure as a whole provides a continuous and adequate load path; and
- The use of such tables does not eliminate the need for engineering judgement, particularly where site-specific conditions differ from the assumptions stated in this guide.
- Assumes that support mechanism between the supported and supporting beams has been fully engineered to both support all the expected loads and to provide both lateral and torsional support to both elements



Roof strutting beam - No SmartSplay



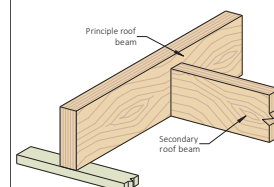
Roof strutting beam - Double SmartSplay



Roof strutting beam - Single SmartSplay

Strutting beam - sheet roof AS 4055 classification N1 - N3

Width of roof (mm)	1500	2000	2500	3000	3500	4000	4500	5000
Maximum beam span (mm)	SmartLVL strutting beams							
3000	170x45	200x45	200x45	200x45	240x45	240x45	240x45	240x45
3300	200x45	200x45	240x45	240x45	240x45	240x45	300x45	300x45
3600	200x45	240x45	240x45	240x45	300x45	300x45	300x45	300x45
3900	240x45	240x45	300x45	300x45	300x45	300x45	300x45	360x45
4200	240x45	300x45	300x45	300x45	300x45	360x45	360x45	360x45
4500	300x45	300x45	300x45	360x45	360x45	360x45	360x45	360x45
4800	300x45	300x45	360x45	360x45	360x45	360x45	360x63	360x63
5100	300x45	360x45	360x45	360x45	360x45	360x63	360x63	400x63
5400	300x45	360x45	360x45	360x63	360x63	360x63	400x63	400x63
5700	360x45	360x45	360x63	360x63	400x63	400x63	400x63	450x63
6000	360x45	360x63	360x63	400x63	400x63	450x63	450x63	450x63
6300	360x63	360x63	400x63	400x63	450x63	450x63	450x63	450x75
6600	360x63	400x63	450x63	450x63	450x63	450x75	NS	NS
6900	400x63	450x63	450x63	450x75	450x75	NS	NS	NS
7200	450x63	450x63	450x75	NS	NS	NS	NS	NS



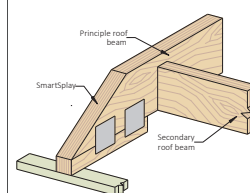
Roof strutting beam -
No SmartSplay

Table assumptions

- Span tables derived using the Equivalent Load Area Method (ELAM) as described on page xxx.
- Minimum bearing length at support = 70 mm
- “NS” indicates that no standard SmartLVL 13 section sizes are suitable for this span
- All sections with a span/depth ratio ≥ 3 are laterally and torsionally restrained at all supports and strutting locations.
- All connections between primary and secondary beams are assumed to provide lateral and torsional restraint to each member
- A minimum depth dimension of 100 mm or one-third the beam depth, whichever is greater, is required at the ends of strutting beams chamfered to avoid interference with the roof claddings as per clause 7.9.2 of AS 1684.2.

Single SmartSplay® strutting beam - sheet roof AS 4055 classification N1 - N3

Width of roof (mm)	1500	2000	2500	3000	3500	4000	4500	5000
Maximum beam span (mm)	SmartLVL strutting beams							
3000	200x45	200x45	200x45	240x45	240x45	240x45	300x45	300x45
3300	200x45	240x45	240x45	240x45	300x45	300x45	300x45	300x45
3600	240x45	240x45	300x45	300x45	300x45	300x45	300x45	360x45
3900	240x45	300x45	300x45	300x45	300x45	360x45	360x45	360x45
4200	240x45	300x45	300x45	300x45	360x45	360x45	360x45	360x45
4500	300x45	300x45	360x45	360x45	360x45	360x45	360x63	360x63
4800	300x45	300x45	360x45	360x45	360x45	360x63	360x63	400x63
5100	300x45	360x45	360x45	360x63	360x63	360x63	400x63	400x63
5400	360x45	360x45	360x63	360x63	400x63	400x63	400x63	450x63
5700	360x45	360x45	360x63	400x63	400x63	400x63	450x63	450x63
6000	360x45	360x63	400x63	400x63	450x63	450x63	450x63	NS
6300	360x63	400x63	400x63	450x63	450x63	450x63	450x75	NS
6600	400x63	400x63	450x63	450x63	450x75	NS	NS	NS
6900	400x63	450x63	450x63	450x75	NS	NS	NS	NS
7200	450x63	450x63	NS	NS	NS	NS	NS	NS



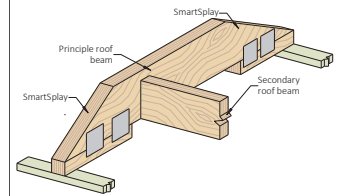
Roof strutting beam -
Single SmartSplay

Table assumptions

- Span tables derived using the Equivalent Load Area Method (ELAM) as described on page xxx.
- Minimum bearing length at support = 70 mm
- “NS” indicates that no standard SmartLVL 13 section sizes are suitable for this span
- All sections with a span/depth ratio ≥ 3 are laterally and torsionally restrained at all supports and strutting locations.
- All connections between primary and secondary beams are assumed to provide lateral and torsional restraint to each member

Double SmartSplay Strutting beam - sheet roof AS 4055 classification N1 - N3

Width of roof (mm)	1500	2000	2500	3000	3500	4000	4500	5000
Maximum beam span (mm)	SmartLVL strutting beams							
3000	200x45	200x45	200x45	240x45	240x45	240x45	240x45	300x45
3300	200x45	240x45	240x45	240x45	300x45	300x45	300x45	300x45
3600	240x45	240x45	240x45	300x45	300x45	300x45	300x45	300x45
3900	240x45	300x45	300x45	300x45	300x45	360x45	360x45	360x45
4200	300x45	300x45	300x45	300x45	360x45	360x45	360x45	360x45
4500	300x45	300x45	360x45	360x45	360x45	360x45	360x63	360x63
4800	300x45	360x45	360x45	360x45	360x45	360x63	360x63	400x63
5100	300x45	360x45	360x45	360x63	360x63	360x63	400x63	400x63
5400	360x45	360x45	360x63	360x63	400x63	400x63	400x63	450x63
5700	360x45	360x63	360x63	400x63	400x63	450x63	450x63	450x63
6000	360x63	360x63	400x63	400x63	450x63	450x63	450x63	NS
6300	360x63	400x63	450x63	450x63	450x63	450x75	NS	NS
6600	400x63	450x63	450x63	450x75	NS	NS	NS	NS
6900	450x63	450x63	450x75	NS	NS	NS	NS	NS
7200	450x63	450x75	NS	NS	NS	NS	NS	NS



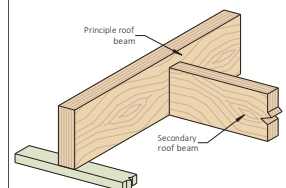
Roof strutting beam
- Double SmartSplay

Table assumptions

- Span tables derived using the Equivalent Load Area Method (ELAM) as described on page xxx.
- Minimum bearing length at support = 70 mm
- “NS” indicates that no standard SmartLVL 13 section sizes are suitable for this span
- All sections with a span/depth ratio ≥ 3 are laterally and torsionally restrained at all supports and strutting locations.
- All connections between primary and secondary beams are assumed to provide lateral and torsional restraint to each member

Strutting beam - Tile roof AS 4055 classification N1 - N3

Width of roof (mm)	1500	2000	2500	3000	3500	4000	4500	5000
Maximum beam span (mm)	SmartLVL strutting beams							
3000	170x45	200x45	200x45	200x45	240x45	240x45	240x45	240x45
3300	200x45	200x45	240x45	240x45	240x45	240x45	300x45	300x45
3600	200x45	240x45	240x45	240x45	300x45	300x45	300x45	300x45
3900	240x45	240x45	300x45	300x45	300x45	300x45	300x45	360x45
4200	240x45	300x45	300x45	300x45	300x45	360x45	360x45	360x45
4500	300x45	300x45	300x45	360x45	360x45	360x45	360x45	360x45
4800	300x45	300x45	360x45	360x45	360x45	360x45	360x63	360x63
5100	300x45	360x45	360x45	360x45	360x45	360x63	360x63	400x63
5400	300x45	360x45	360x45	360x63	360x63	360x63	400x63	400x63
5700	360x45	360x45	360x63	360x63	400x63	400x63	400x63	450x63
6000	360x45	360x63	360x63	400x63	400x63	450x63	450x63	450x63
6300	360x63	360x63	400x63	400x63	450x63	450x63	450x63	450x75
6600	360x63	400x63	450x63	450x63	450x63	450x75	NS	NS
6900	400x63	450x63	450x63	450x75	450x75	NS	NS	NS
7200	450x63	450x63	450x75	NS	NS	NS	NS	NS



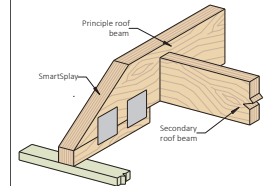
Roof strutting beam -
No SmartSplay

Table assumptions

- Span tables derived using the Equivalent Load Area Method (ELAM) as described on page xxx.
- Minimum bearing length at support = 70 mm
- “NS” indicates that no standard SmartLVL 13 section sizes are suitable for this span
- All sections with a span/depth ratio ≥ 3 are laterally and torsionally restrained at all supports and strutting locations.
- All connections between primary and secondary beams are assumed to provide lateral and torsional restraint to each member
- A minimum depth dimension of 100 mm or one-third the beam depth, whichever is greater, is required at the ends of strutting beams chamfered to avoid interference with the roof claddings as per clause 7.9.2 of AS 1684.2.

Single SmartSplay® strutting beam - Tile roof AS 4055 classification N1 - N3

Width of roof (mm)	1500	2000	2500	3000	3500	4000	4500	5000
Maximum beam span (mm)	SmartLVL strutting beams							
3000	240x45	240x45	240x45	300x45	300x45	300x45	300x45	360x45
3300	240x45	300x45	300x45	300x45	300x45	360x45	360x45	360x45
3600	300x45	300x45	300x45	360x45	360x45	360x45	360x45	360x63
3900	300x45	300x45	360x45	360x45	360x45	360x63	360x63	360x63
4200	300x45	360x45	360x45	360x63	360x63	360x63	400x63	NS
4500	360x45	360x45	360x63	360x63	400x63	400x63	400x63	NS
4800	360x45	360x63	360x63	400x63	400x63	450x63	NS	NS
5100	360x45	360x63	400x63	400x63	450x63	NS	NS	NS
5400	360x63	400x63	400x63	450x63	450x63	NS	NS	NS
5700	400x63	400x63	450x63	450x63	NS	NS	NS	NS
6000	400x63	450x63	450x63	NS	NS	NS	NS	NS



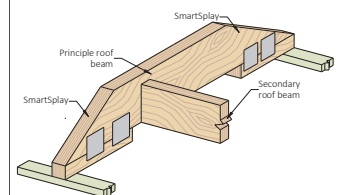
Roof strutting beam -
Single SmartSplay

Table assumptions

- Span tables derived using the Equivalent Load Area Method (ELAM) as described on page xxx.
- Minimum bearing length at support = 70 mm
- “NS” indicates that no standard SmartLVL 13 section sizes are suitable for this span
- All sections with a span/depth ratio ≥ 3 are laterally and torsionally restrained at all supports and strutting locations.
- All connections between primary and secondary beams are assumed to provide lateral and torsional restraint to each member

Double SmartSplay Strutting beam - Tile roof AS 4055 classification N1 - N3

Width of roof (mm)	1500	2000	2500	3000	3500	4000	4500	5000
Maximum beam span (mm)	SmartLVL strutting beams							
3000	240x45	240x45	300x45	300x45	300x45	300x45	300x45	360x45
3300	240x45	300x45	300x45	300x45	360x45	360x45	360x45	360x45
3600	300x45	300x45	300x45	360x45	360x45	360x45	360x63	360x63
3900	300x45	360x45	360x45	360x45	360x63	360x63	360x63	400x63
4200	300x45	360x45	360x45	360x63	360x63	400x63	400x63	NS
4500	360x45	360x45	360x63	360x63	400x63	400x63	NS	NS
4800	360x45	360x63	400x63	400x63	450x63	450x63	NS	NS
5100	360x63	400x63	400x63	450x63	450x63	NS	NS	NS
5400	360x63	400x63	450x63	450x63	NS	NS	NS	NS
5700	400x63	450x63	450x63	NS	NS	NS	NS	NS
6000	450x63	450x63	NS	NS	NS	NS	NS	NS



Roof strutting beam
- Double SmartSplay

Table assumptions

- Span tables derived using the Equivalent Load Area Method (ELAM) as described on page xxx.
- Minimum bearing length at support = 70 mm
- “NS” indicates that no standard SmartLVL 13 section sizes are suitable for this span
- All sections with a span/depth ratio ≥ 3 are laterally and torsionally restrained at all supports and strutting locations.
- All connections between primary and secondary beams are assumed to provide lateral and torsional restraint to each member

SmartFrame Warranty

All SmartFrame Engineered Wood Products (EWP) are covered by our SmartFrame warranty against material and workmanship defects and are guaranteed to perform as specified when stored, installed, and finished in accordance with SmartFrame installation instructions.



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