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SMARTLAMGL13S
information

SMART LAM GL13S

DESIGN GUIDE EDITION 1

2026

SMARTFRAME[®]
BY TILLING

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SmartFrame Product Warranty

Tilling Timber warrants that its SmartFrame Engineered Wood products will be free from manufacturing defects in workmanship and material.

In addition, provided the product is correctly installed and used, Tilling Timber warrants the adequacy of its design for the normal and expected life of the structure.

This warranty is backed by the full resources of Tilling Timber and by underwritten product liability insurance.

Tilling Timber Pty Ltd
31-45 Orchard Street
Kilsyth Vic 3137
Ph: +61 (0)3 9725 0222 Fax: +61 (0)3 9725 6569
Email: techsupport@tilling.com.au

Scope of this publication

This Design Guide and Load Tables assist in the selection of SmartLam GL13S for some of the common structural elements 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.

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 have structural engineers within the SmartFrame Design Centre who can be contacted for advice on matters concerning the use of its SmartFrame engineered timber products in timber construction via the technical support Helpline on 1300 668 690 or e-mail at techsupport@tilling.com.au.

Substitution of other products

All load tables in this document are designed using the characteristic properties of GL13S defined in table 7.1 of AS 1720.1, manufactured to AS/NZS 1328 by quality producers and distributed by Tilling Timber Pty Ltd.

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Certification

As a professional engineer, qualified and experienced in timber engineering, I certify that the use of the SmartLam GL13S members as shown in these tables, and installed in accordance with the provisions of this Design Guide, complies to the Building Code of Australia. These Span Tables have been prepared in accordance with standard engineering principles, the relevant test reports and Australian standards, ie:

- AS 1720.3 Residential timber-framed construction
- AS 1720.1 Timber structures - design methods
- AS 4055 wind loads for houses
- AS/NZS 4063 Characterisation of structural timber
- AS/NZS 1328 Glue laminated structural timber - performance requirements and minimum production requirements.
- GLTAA Unified design criteria



Ray Schneider RPEng, RPEQ, RPEV, IEAust
Principal Structural Engineer – SmartFrame

SmartLam® GL13S

Introduction

Tilling Timber offer multiple GL13S options, with both a softwood and hardwood glulam beams available.

SmartLam GL13S beams are manufactured for Tilling Timber by 3rd party audited quality glulam manufacturers to AS/NZS 1328. SmartLam GL13S Glulam beams are engineered timber products with high strength, dimensional stability, great load carrying capacity and superior fire resistance.

All timber used for laminating is carefully selected from production and graded according to specification. After trimming to the desired size, all stock is kiln dried to 12% average moisture content, to ensure efficient bonding in the gluing operations. The laminations are finger jointed by machine, with glue being cured by cold press system and controlled temperature.

Benefits of SmartLam GL13S

Cost Effectiveness - SmartLam GL13S beams high strength to weight ratio allows you to design for maximum loads over large spans with the smallest possible end sections.

Product Quality - All SmartLam GL13S beams are manufactures in accordance with AS 1328 Glue Laminated Structural Timber and the Glued Laminated Timber Association (GLTAA) Industry standard GLTAA-4-91.

Fire safety - Extensive fire test data shows that large end section timber performs well in fire situations due to the formation of a protective layer of char which usually occurs at a temperature

around 250° C. This charred area inhibits the effects of the fire on

the inner portion of the timber component, hence it maintains structural load support for measurable periods of time as the fire progresses.

Conversely, steel loses its strength rapidly as the temperature is raised. At about 550°C, it has lost about 50% of its original bending strength, and by 750°C it has lost 90%. Timber does not loose strength in the same way, with the loss of section size through charring the major reason for any strength reduction.

Fast easy erection - Timber is a user friendly building material, requiring no special tools other than those a normal builder would use, and with SmartLam GL13S beams, installation is fast, easy and efficient.

Environmental responsibility - SmartLam GL13S beams are made from timber from sustainable managed forests, a natural resource that is friendly to the environment.

Low maintenance - In most applications, SmartLam GL13S beams will require little or no maintenance other than that which you would ordinarily carry out to any structural material.

Natural beauty - The natural beauty of timber is desired and highly appropriate in many architectural applications. Appearance Grade B SmartLam GL13S beams allow you to build timber's natural warmth and beauty into your designs.

Serviceability Criteria

The deflection limits (serviceability) applied in these tables and reproduced in Table 1 below, are in accordance the Glued

Laminated Timber Association of Australia (GLTAA) Unified Design Criteria and in some circumstances, differ for those listed in AS 1720.3 -2016.

Table 1: GLTAA Serviceability Criteria

Member type	Long term		Short term	
	$j_2 \times DL$	$j_2 \times (DL+0.5 \text{ kPa})$	LL	Serviceability WL
Bearers (floor loads only)		L/300 or 12 mm	L/360 or 18 mm	
Bearers (with roof loads)		L/300 or 12 mm	L/360 or 18 mm	L/150
Joists		L/300 or 15 mm	L/360 or 9 mm	
Lintels (with roof loads only)	L/300 or 9 mm		L/250 or 9 mm	L/150
Lintels (with roof and floor)		L/300 or 9 mm	L/360 or 9 mm	L/200
Strutting, hanging, and counter beams	L/300 or 15 mm		L/270 or 15 mm	L/150
Hanging/Strutting, Counter/Strutting beams	L/300 or 12 mm		L/300 or 12 mm	L/150
Roof beams, rafters, hips	L/300 or 20 mm		L/250	L/150
Patio or verandah beams	L/400 or 10 mm		L/250 or 12 mm	L/200

Where:

1. DL = Dead load, LL = Live load, WL = Wind load,
2. j_2 = Creep modification factor Clause 2.4.1.2 AS 1720.1

Ordering SmartLam GL13S

SmartLam GL13S glulam can be purchased with different appearance grades.

AS/NZS 1328.2 defines 3 appearance grades:

- Appearance Grade A - Sanded with any voids filled - intended for applications where appearance is important and clear or painted finishes are used
- Appearance Grade B - intended for applications where appearance is important but where a planed finish is acceptable
- Appearance Grade C - intended for applications where appearance is unimportant

SmartLam GL13S B grade

"C" indicates pre-camber
"S" indicates no-pre-camber (straight)

Appearance grade

Stock SmartLam GL13S will be supplied without pre-camber (straight) in B grade finish unless otherwise specifically requested.

Protection and handling

Care should be taken during delivery to avoid marking and to avoid damage. Unloading of trucks should be done by hand or with a crane, do not drop or dump members. During unloading with lifting equipment, use fabric or plastic belts or other slings which will not mark the wood. If chains or cables are used, provide protective blocking or padding. Guard against soiling, dirt, footprints, abrasions, or injury to sharp edges or corners.

Installation

Preparatory work

Carefully unload and handle the laminated members at job site to prevent surface marking and damage. If laminated timber is to be stored before erection, place it on blocks well off the ground with individual members separated by strips so that air may circulate around all four sides. The top and the sides of storage pile shall be covered with moisture resistant covering. Wrapping shall be left intact, but individual wrappings shall be slit or punctured on the lower side to permit the drainage of water that may have accumulated. Before erection, the assembly should be checked for any damage from water or handling, prescribed camber, and accuracy of anchorage connections.

Laminated beams can be nailed into place in the same way as solid timber beams. Alternatively, a range of plates are available for end fixing. For larger beams, special purpose, engineer designed end fixing should be used.

Deflection

All structural members deflect downwards when dead loads are applied, and therefore it is important to allow for this deflection structurally and/or aesthetically in the selection of the beam sizes. The "Deflection Limits" table on page 1 details deflection limits for various applications

Verticality

SmartLam GL13S members must not be installed out of plumb more than height/500.

Notches

Large notches and holes in Glulam beams should normally be avoided as they cause abrupt changes in cross section and disrupt the stress flow in the structure. This gives rise to tension perpendicular to the grain and shear stresses around the holes and notches. For this reason, notches seriously reduce the strength of a beam, particularly if located in the tension zone of a beam. Unless specific allowance has been made in the design, no notches shall be made without first obtaining the advice of an engineer. Design rules are set out in AS 1720.1 Timber Engineering Code and should be followed closely when considering notching anywhere in a Glulam beam.

Holes for services

Horizontal Holes - Like notches, holes in a Glulam beam remove wood fibre, reduce the net area of the beam at the hole location, and introduce stress concentrations. For this reason, horizontal holes in Glulam beams are limited in size and location to maintain the structural integrity of the beam. Figure 2 below shows the zones of a uniformly loaded, simply supported beam where field drilling of holes may be considered.

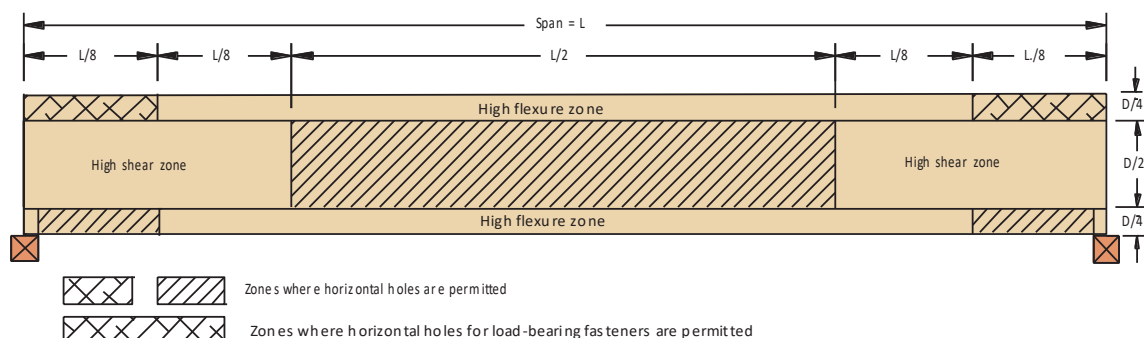
Field drilled horizontal holes should be for access only and should not be used as attachment points for brackets or other load bearing hardware unless specifically designed as such by the Engineer/Designer.

Regardless of the hole location, the net section of the beam remaining should be checked for flexure and horizontal shear.

Vertical holes - As a rule of thumb, vertical holes drilled through the depth of a Glulam beam cause a reduction in capacity at that location directly proportional to the ratio of $1\frac{1}{2}$ times the diameter of the hole. For example, a 25 mm hole drilled in a 150 mm wide beam would reduce the capacity of the beam at that section by $\frac{1}{4}$. For this reason, where it is necessary to drill vertical holes through a Glulam member, the holes should be positioned in areas of the member that are stressed to less than 50% of the design in bending.

Holes for support of heavy equipment - Heavy equipment or piping suspended from Glulam should be attached so that the load is applied to the top of the member to avoid tension perpendicular to the grain stresses. Any horizontal holes required for support of significant weight, such as suspended heating and cooling units or main water lines, must be located above the neutral axis of the member and in a zone stressed to less than 50% of the design flexural stresses.

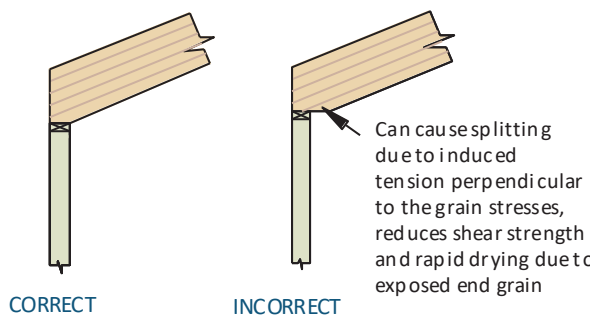
Figure 2 - Zones where horizontal holes are permitted in a uniformly loaded simply supported beam



Installation

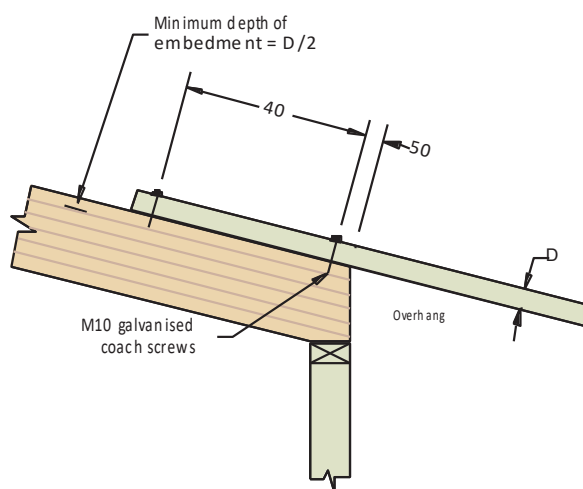
Birdsmouthing

Figure 3 - Birds mouthing details for SmartLam GL13S



Eaves overhang

Figure 4 - Eaves overhang details for SmartLam GL13S



Note:

Refer to AS 1684 Residential timber-framed construction code for overhang member size.

Allowable Eaves overhangs

1. Non Cyclonic Areas

- Beams for flat or similar roofs - Not Birds mouthed: Eaves overhang shall not exceed 40% of the actual beam span.
- Beams with conventional pitched roofs - Birds mouthed to one third their depth:
 - Sheet roof - 20% of actual beam span
 - Tiled roof - 30% of actual beam span

2. Cyclonic Areas

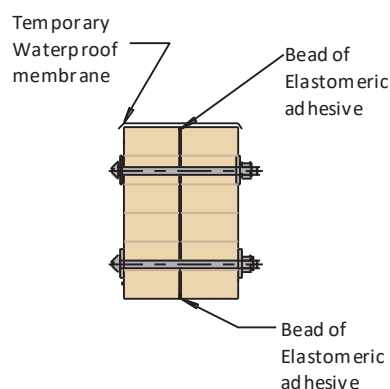
Recommendations as per above, but reduced as follows:

- Non Birds mouthed - 25% of actual beam span
- Birds mouthed-
 - Sheet roof - 10% of actual beam span
 - Tiled roof - 20% of actual beam span

Multiple SmartLam GL13S section beams

Vertical laminations may be achieved by adopting the principle described in clause 2.3 of AS 1684, however, due to the thickness of SmartLam GL13S, nails are NOT suitable for combining SmartLam GL13S beams.

Experience with Glulam beams indicates that multiple member laminations individual components may cup as a result of the ingress of moisture between laminates during construction. The suggested method of vertical lamination shown below provides a greater level of fixity between individual components, and combined with the use of a temporary waterproof membrane and an elastomeric adhesive prevents moisture penetration between the laminates.

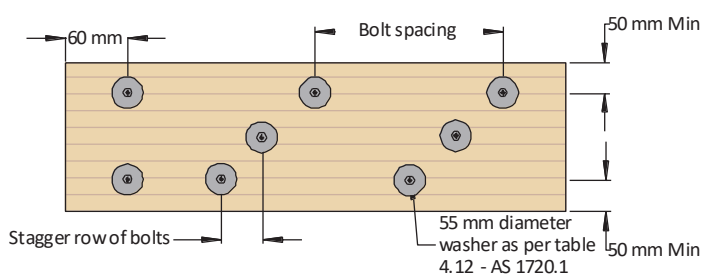


Recommended "during construction" protection from weather for multiple SmartLams.

Combination 1
2 pieces of
65 or 85 mm



Combination 2
3 pieces of
65 or 85 mm



Top loaded beams (Symmetrical loading)

The edges of the individual sections must be carefully aligned to each other so that the composite beam is flat, allowing the applied loads to be equally shared. It is recommended that there be 2 rows of galvanised M12 bolts at 600 mm centres.

Side loaded beams (Non – symmetrical loading)

When a load is applied to one side of a built-up SmartLam GL13S or an unbalanced load is applied to both sides, the elements of the built up beam shall be attached such that the applied load is distributed equally to all elements. Like the minimum connection

Installation (cont'd)

shown above, the connection is made with bolts, with the allowable floor load width supported by either outside member shown in the table below.

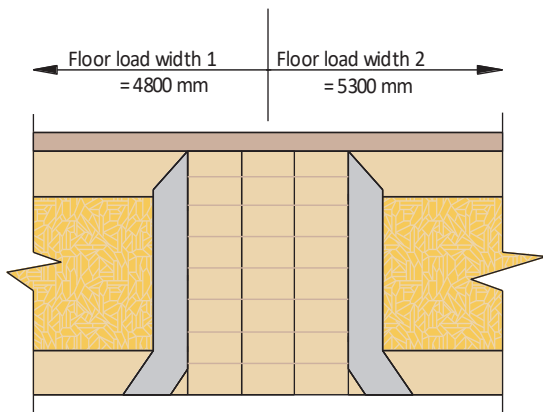
Maximum floor load width supported by either outside member (mm)

Combination (see details below)	12 mm Φ bolts	
	2 rows at 600 ctrs	2 rows at 300 ctrs
Combination 1	10100	20200
Combination 2	16150	20200

Notes:

1. Table values are for 40 kg/m² floors.
2. Bolts are to be grade 4.6 commercial bolts conforming to AS 1111. Bolt holes are to be a maximum of 13 mm diameter and are to be located NOT less than 50 mm from either edge.
3. All bolts shall be fitted with a washer at each end, of a size NOT less than that given in AS 1720.1 table 4.12.

How to use the maximum uniform side load table



Example:

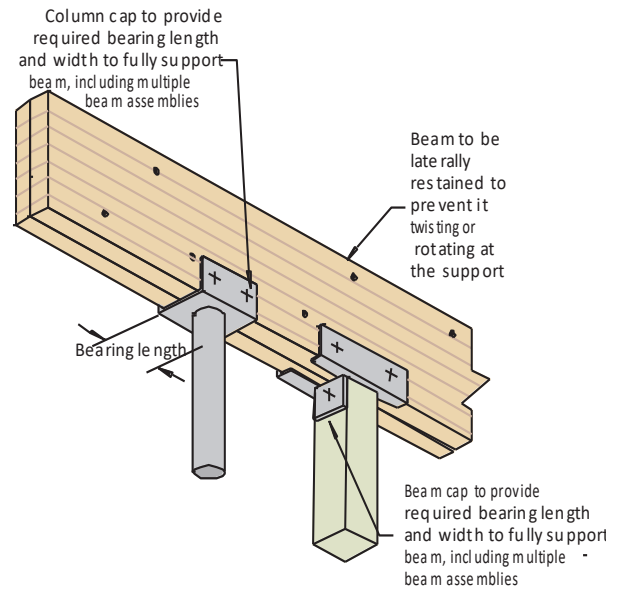
Beam of 2 SmartLam GL13S loaded on both side (Combination 1)

FLW 1 = 4800 mm, FLW 2 = 5300 mm

Total FLW = 4800 + 5300 = 10100 mm.

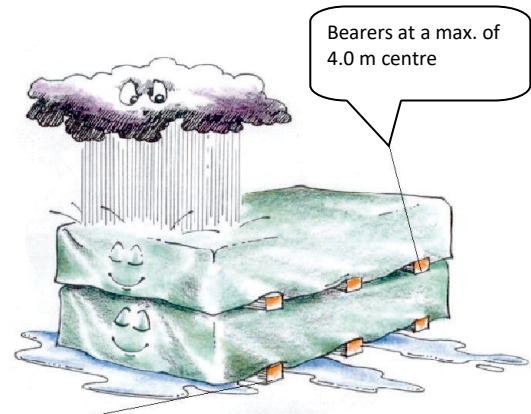
1. Use SmartFrame software or these SmartLam GL13S safe load tables to size the two member section to support the FLW of 5100 mm.
2. Choose the larger of the side FLW's carried by the beam, in this case 5300 mm.
3. Enter the table at the "Combination 1" row and scan across to a table value greater than 5300 mm. The first value in the row at 10200 mm is greater than the 5300 mm required.
4. Thus adopt 2 rows of 12 mm Φ x bolts at 600 mm centres

Steel and Timber fixing to SmartLam GL13S



Storage and handling of SmartLam GL13S

1. Store SmartLam GL13S flat on a hard, dry surface
2. If surface isn't paved, the ground should be covered with a polythene film
3. Keep covered with waterproof material that allows bundles to "breathe"
4. Use bearers (bolsters) between the ground and the first bundle (4 metre max spacing)
5. Use 100 x 50 timber flat between bundles at same spacing as bolsters
6. Take great care to rewrap remaining material after opening bundles
7. Timber "grows" in thickness and depth when allowed to get wet....KEEP DRY!
8. Timber products with high MC has short term reduction in Characteristic Strengths KEEP DRY!
9. Under NO circumstances is stored SmartLam GL13S to be in contact with the ground.



Use bearers to keep stacked material away from damp surfaces. Align bearer vertically

SmartLam GL13S 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

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

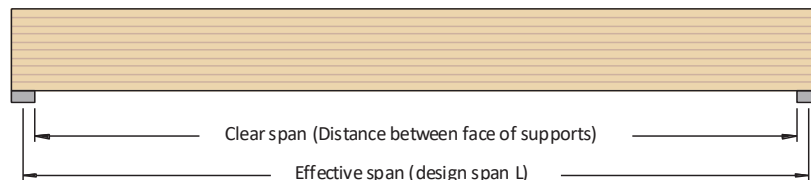
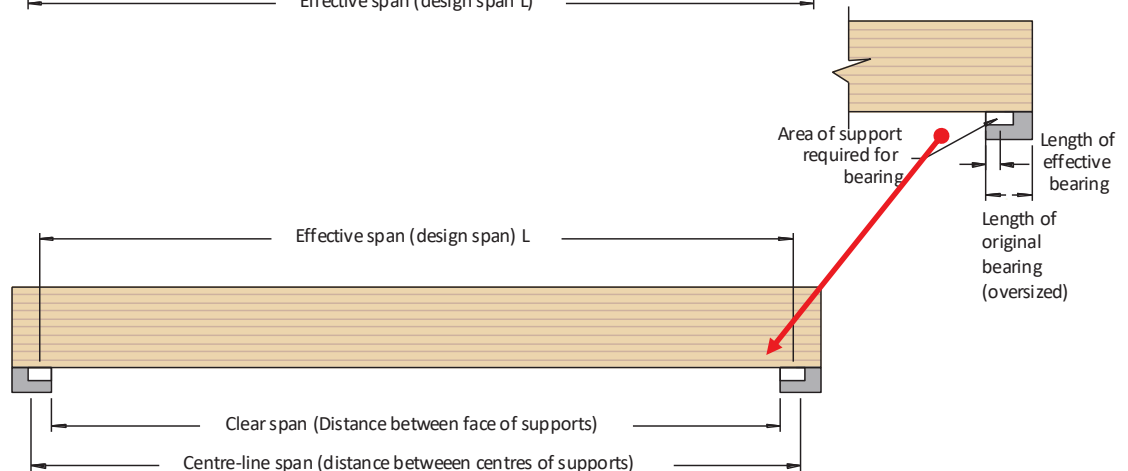


Diagram (b) shows beam where bearings at each end have been oversized. (This is frequently the case for beams that bear onto brickwork or concrete walls where the thickness of the wall is in excess of the area required to give the beam bearing capacity). To find the correct effective span:

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



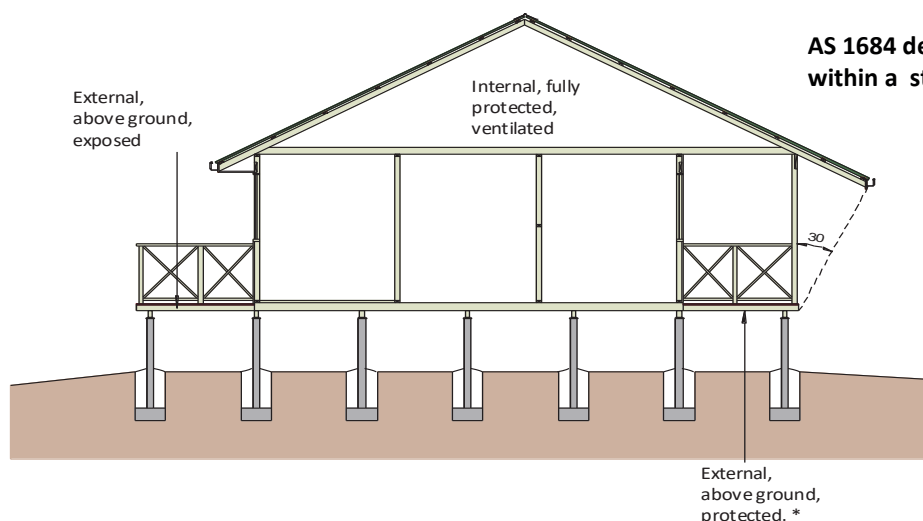
span difference	effective span	resultant span description
10% Max	main span	continuous
10 – 30%	1.1 x main span	continuous
Above 30% difference	main span	single

$$\text{span difference} = \frac{(\text{major span} - \text{minor span})}{(\text{major span} + \text{minor span})} \times 100$$

The span to use in the case of unequal continuous spans is the "resultant span description" as shown in the table above. (Note: It is recommended for the most accurate designs, that the SmartFrame software be used.)

SmartLam durability and weather exposure

AS 1684 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).

SmartLam durability and weather exposure

SmartLam GL13S are manufactured from kiln dried timber (MC less than 15%), and therefore need to be protected from moisture cycling that can occur from:

- Exposure to direct sun and rain (including during construction)
- Contact or close exposure with moisture laden porous material (e.g. Concrete blocks)
- Exposure to extreme environments such as dry heating systems (e.g. slow combustion wood heaters), air conditioning, large north or west facing windows or moisture laden environments such as pool enclosures.

SmartLam GL13S protection methods

1. During Construction (pre-water proof roof)

SmartLam GL13S is supplied WITHOUT any short term construction sealer. However if SmartLam GL13S is expected to be exposed for an extended period or become wet, it is recommended that the beam be sealed with a construction sealer that is compatible with the final paint or varnish finish, or wrapped in plastic to provide protection (plastic must allow for drainage and air circulation to breath).

Examples:

- If the SmartLam GL13S is installed inside a building without direct exposure to air-conditioning such as in wall cavity, NO protection to the beam is required.
- If the SmartLam GL13S is installed inside a building with direct exposure to air conditioning or dry heat then a sealer is required.
- If the SmartLam GL13S is under the eaves and protected from direct rain and sun, it is recommended that the construction sealer be lightly sanded and a finish coat of compatible premium quality paint be applied. (In accordance with paint manufacturer's specifications).
- If the SmartLam GL13S is exposed to the sun or weather refer to "Exterior Applications" below.

Treatment options

SmartLam GL13S may be ordered untreated or with preservative treatment to the H2 and H3 hazard class for protection against insect attack and biological decay respectively. (All Pine based GL13S is preservative treated against the European House borer Beetle)

Treatment for a service at a higher hazard class satisfies all requirements for service at a lower hazard class. Products treated to H3 therefore meet or exceed the requirements for H1 and H2 applications.

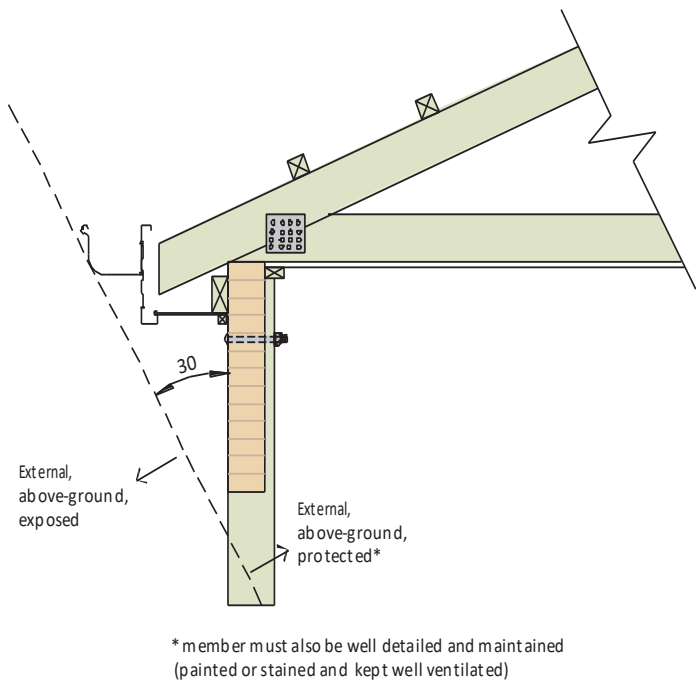
Table 1 of Appendix A in AS/NZS 1604.5 is a guide to hazard classifications for various end-use applications. This table is for guidance only, and only lists limited application.

Example applications

1. Covered alfresco and garage beams

Alfresco beams constructed to comply with the diagram adjacent are classified in AS 1684 as **External, above-ground, protected** and can be an untreated Class 4 durability timber.

SmartLam GL13S beams treated to H2 or above are ideal for alfresco and garage beam applications



A SmartLam GL13S in this application must be correctly painted with a premium quality protective finish See **3. Painting treated SmartLam GL13S** below.

2. External, above ground, EXPOSED

Untreated SmartLam GL13S beams must NOT be used in **external, above ground , EXPOSED** applications without the following:

- H3 treated to AS/NZS 1604.5
- Correctly detailed (e.g. End caps, good drainage and ventilation). See "Design & Construction detailing tips" below
- Correctly painted as per covered alfresco beam example above

It is important that an inspection and maintenance programme, based on exposure level and the paint manufacturer's recommendations be prepared.

3. Painting treated SmartLam GL13S

(a) General

To provide the longest service life of the SmartLam GL13S, it is recommended the SmartLam GL13S are 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 paints colours should be limited 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

- The wood must be dry and clean prior to applying any fin-

Durability and weather exposure (Cont'd)

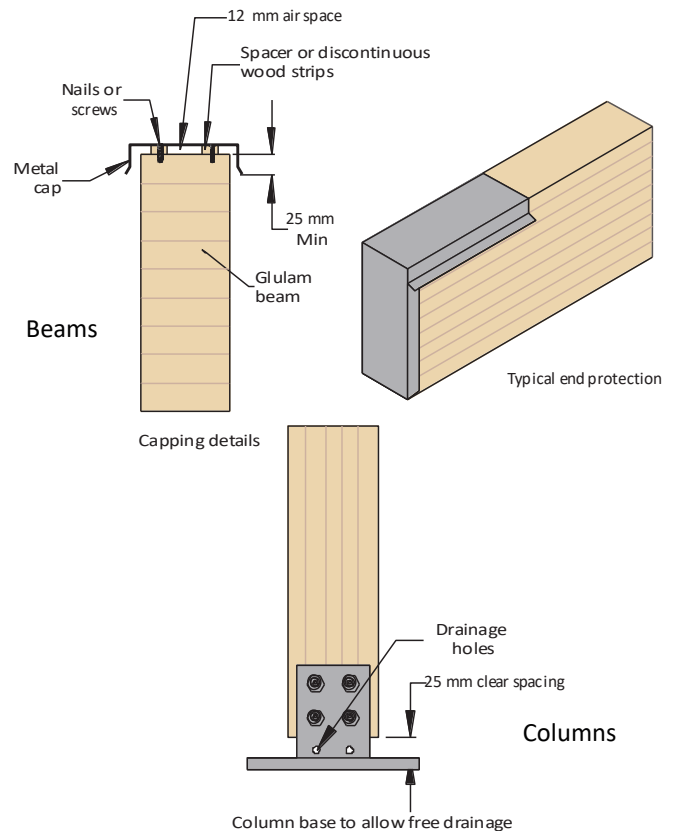
ish coating. If initial cleaning of the treated wood is needed, it is recommended that the project be cleaned with a deck cleaning product and allow to fully dry

2. At this time, a clear water repellent can 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.
4. A water based stain can be applied to the clean, dry wood in 45-70 days from treatment date.
5. Depending on the treatment method used, if the wood is left uncoated and without UV protection:
6.
 - 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.

3. Design & Construction detailing tips

- i. The use of building overhangs and other structures which protect the beams from excessive moisture movement and sun exposure.
- ii. Shielding of the beam from free moisture or direct sun. The use of metal, fibro or plastic shields on the exposed faces or ends of beams is highly recommended to help maintain the beam in an unstressed dry condition.
- iii. 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.
- iv. The use of arrised or round edges on beams to reduce the likelihood of coating failures on sharp edges.
- v. The use of drip edges or other devices which provide a path for free moisture flow away from the timber beam. Refer to detail below opposite.
- vi. 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.
- vii. Allow for thermal expansion/contraction in the joint design.



Fire ratings (resistance)

The Fire Resistance Level (FRL) of an object is expressed as the number of minutes for which the specimen fulfils the requirements of each of the three criteria, being:

- i. Structural adequacy
- ii. Integrity; and
- iii. Insulation, and expressed in that order under test conditions.

In a fire, SmartLam GL13S beams have an inherent fire rating. As timber burns, a layer of charcoal forms enclosing a core of timber which is yet unaffected by the fire. This timber core maintains its structural capacity. Hence, dependant upon the loss of material to the charcoal layer, the SmartLam GL13S beam can carry the dead load of the structure for a period of time.

The Structural Adequacy Resistance to fire can be established by reference to AS 1720.4.

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

Where d = timber density at a moisture content of 12%, in kg/m³. For Softwood SmartLam GL13S this equates to a char rate of 0.54 mm per minute, for the Hardwood SmartLam GL13S, 0.50 mm per hour

The Structural Adequacy Fire resistance period can be determined by performing a series of successive iterations of time. The calculated value is reached when the effective residual section is no longer capable of resisting the design loads.

NOTE: this calculation is for the structural adequacy component of the FRL ONLY. More information on the determination of the FRL go to www.woodsolutions.com.au.

Checking in SmartLam GL13S

One of the advantages of glued laminated timber construction is that while seasoning checks may occur for the same reasons that they do in sawn members, checking in glued laminated timber will generally occur to a much lesser degree because of careful control of the moisture content of timber used for laminating. Checks in wood are separations along the fibres normally occurring across the rings of annual growth resulting from stresses developed during changes in moisture content. Checks in glued laminate timber may appear as openings parallel to the grain on the sides of members.

As wood loses moisture to the surrounding atmosphere, the outer fibres of the member lose moisture at a more rapid rate than do the inner fibres. As outer fibres try to shrink, they are restrained by the inner portion of the member that has higher moisture content. The more rapid the rate of drying, the greater will be the differential in shrinkage between the outer and inner fibres resulting in higher shrinkage stresses.

These resultant stresses perpendicular to the grain of the wood can cause characteristic wood seasoning checks. The influence of checks on the structural performance of glued laminated timber members is generally minor. Checking can be minimized by careful installation practices that avoid prolonged exposure of the members during construction.

Identification of checking

Checks occur as transverse separations or openings that are nearly parallel to the grain direction in glued laminated timber and generally follow the grain direction around knots and along sloping grain. Differences in the shrinkage rate of individual laminations used in glued laminated timber tend to concentrate shrinkage stresses at or near glue lines, resulting in checks.

Checks are often confused with delamination that occurs when the glue bond is not adequate. The presence of wood fibre separation in these openings is the key distinguishing characteristic of seasoning checks. Openings due to inadequate adhesive bonding may appear as smooth wood surface separations, possibly darkened by the adhesive film, or as glossy surface areas of adhesive with an absence of torn wood fibres.

Checking often occurs along the first glue line adjacent to the outer lamination that may dry more rapidly because a larger surface area of that lamination is exposed to the air. This condition is sometimes aggravated when the outer lamination tends to cup, creating tension perpendicular to grain stresses along or near the first glue line.

Significance of checking

In general, checks have little effect on the strength of glued laminated members. Glued laminated members are made from laminations that are thin enough to season readily in kiln drying schedules without developing checks. Checks usually appear on the wide faces of the timber and do not materially affect the shear strength of the laminations. In cases where members are designed for loading parallel to the wide face of the laminations, checks may affect the shear strength of the beam their effect may be evaluated in the same manner as for sawn timber. Seasoning checks in bending members affect only the horizontal shear capacity.

In establishing allowable horizontal shear values, normal checking due to seasoning has been considered.

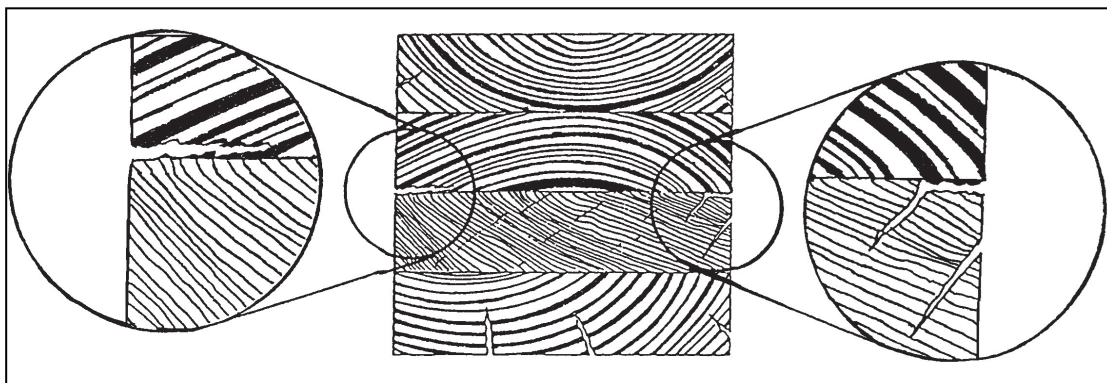
Checks are usually not of structural importance unless they are significant in depth, occur in the mid-height of the member near the supports, and the design of the member is governed by shear. If these conditions exist, the reduction in shear strength is directly proportional to the ratio of the depth of checks to the width of the bending member. Checks in columns are not of structural importance unless the check develops into a split, thereby increasing the l/d ratio of the column.

Additional information

While checking is not considered to be of structural significance, the reason for the checking and the means by which further checking may be minimized should be determined.

If there is concern regarding structural adequacy, advice can be obtained from engineers from the SmartFrame Design Centre or a structural engineer experienced and qualified in glued laminated timber technology should evaluate the significance of the checking.

The SmartFrame **Technical Note - "Evaluation of Checking in Glued Laminated Timber (Glulam)"** gives detailed analysis of the modification to structural capacity as a result of severe checking.



Designing with SmartLam GL13S

The design information contained within this Design Guide is for the properties of SmartLam GL 17 only. Other manufacturers' LVL may have different properties and therefore cannot be designed using this information.

1. Product Specification

Lamella:	Thickness:	30-45 mm
	Species:	Slash pine (Pinus elliottii) Radiata pine (Pinus Radiata)
	Strength Group	SD4
	Joints:	Finger joint
Dimensional tolerances:	Length:	± 10 mm
	Depth:	≤ 100 mm ± 1 mm ≥ 100 ≤ 302 mm ± 3 mm ≥ 301 ≤ 600 mm ± 4 mm ≥ 601 ± 6 mm
	Thickness:	- 0, +4 mm at 12% moisture content
Adhesive:	Complies with AS/NZS 4364:2010	
Treatment options:	Untreated, H2, and H3 treatment to AS 1604.5	

2. Limit State Design Characteristic Properties

Timber Strength Properties: ⁽¹⁾		
Bending	f _b	33 MPa
Tension Parallel to grain	f _t	16 MPa
Tension Perpendicular to grain	f _{tp}	0.5 MPa
Compression Parallel to grain	f _c	26 MPa
Compression Perpendicular to grain - Edge	f _p	8.6 MPa
Shear	f _s	4.2 MPa
Average Elastic Modulus	E	13,300 MPa
Average Modulus of Rigidity	G	900 MPa
Average Density		550 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 SmartLam GL 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 Ø *		
0.95	0.85	0.75

* AS 1720.1:2010 Table 2.1

4. Duration of load

The duration of load factor k₁ for strength is defined within clause

Duration	Service class / exposure classification		
	1, 2	3	Severe/ Adverse
Short term ≤ 1 Day	1.0	1.0	1.0
Long term > 12 months	1.5	2.0	3.0*

Notes:

- * Any beams to be used in service class 3 are outside the scope of these span tables, therefore specialist design advice should be sought from an engineer.
- In general, the size of this beam can conservatively be obtained by the following method:
 - Obtain the beam size for service class 1 & 2
 - Obtain the EI_{xx} from the "Section Properties" table for this beam
 - Obtain from the "Section Properties" table a beam size with an EI_{xx} => 2/1.5 x EI_{xx} of the original beam
 - Follow the recommendations of the GLTAA Technical Data Sheet No 2: "Glulam in weather exposed applications"
- Service Classes 1,2 & 3 are defined in AS 1328

5. Partial seasoning factor

SmartLam GL 17 is a seasoned timber product, generally k₄ equals 1. Where the glulam 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 k₄ 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 k₇ 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 glulam compared to solid timber, the load sharing factor k₉ = 1.0 as defined in clause 7.4.3 of AS 1720.1

8. Stability

The stability factor k₁₂ is defined within section 7 of AS 1720.1 beams. The methods for calculating k₁₂ 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., k₆ 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 k₆ of 0.9.

SmartLam GL13S section properties

Nominal size DxB mm	Beam mass kg/m	Nominal section area 10 ³ mm ²	Major axis			Minor axis	
			Z _{xx} 10 ³ mm ³	I _{xx} 10 ⁶ mm ⁴	EI _{xx} 10 ⁹ Nmm ²	Z _{yy} 10 ³ mm ²	I _{yy} 10 ⁶ mm ⁴
126 x 55	3.8	6.9	146	9	122	63.5	1.7
168 x 55	5.1	9.2	259	22	289	84.7	2.3
210 x 55	6.4	11.6	404	42	565	105.9	2.9
252 x 55	7.6	13.9	582	73	976	127.1	3.5
294 x 55	8.9	16.2	792	116	1549	148.2	4.1
336 x 55	10.2	18.5	1035	174	2312	169.4	4.7
378 x 55	11.4	20.8	1310	248	3292	190.6	5.2
420 x 55	12.7	23.1	1617	340	4516	211.8	5.8
462 x 55	14.0	25.4	1957	452	6011	232.9	6.4
504 x 55	15.2	27.7	2328	587	7804	254.1	7.0
546 x 55	16.5	30.0	2733	746	9922	275.3	7.6
588 x 55	17.8	32.3	3169	932	12393	296.5	8.2
630 x 55	19.1	34.7	3638	1146	15242	317.6	8.7
126 x 65	4.5	8.2	172	11	144	88.7	2.9
168 x 65	6.0	10.9	306	26	342	118.3	3.8
210 x 65	7.5	13.7	478	50	667	147.9	4.8
252 x 65	9.0	16.4	688	87	1153	177.5	5.8
294 x 65	10.5	19.1	936	138	1831	207.0	6.7
336 x 65	12.0	21.8	1223	205	2733	236.6	7.7
378 x 65	13.5	24.6	1548	293	3891	266.2	8.7
420 x 65	15.0	27.3	1911	401	5337	295.8	9.6
462 x 65	16.5	30.0	2312	534	7104	325.3	10.6
504 x 65	18.0	32.8	2752	693	9223	354.9	11.5
546 x 65	19.5	35.5	3230	882	11726	384.5	12.5
588 x 65	21.0	38.2	3746	1101	14646	414.1	13.5
630 x 65	22.5	41.0	4300	1354	18014	443.6	14.4
126 x 85	5.9	10.7	225	14	188	151.7	6.4
168 x 85	7.9	14.3	400	34	447	202.3	8.6
210 x 85	9.8	17.9	625	66	872	252.9	10.7
252 x 85	11.8	21.4	900	113	1508	303.5	12.9
294 x 85	13.7	25.0	1225	180	2394	354.0	15.0
336 x 85	15.7	28.6	1599	269	3574	404.6	17.2
378 x 85	17.7	32.1	2024	383	5088	455.2	19.3
420 x 85	19.6	35.7	2499	525	6980	505.8	21.5
462 x 85	21.6	39.3	3024	698	9290	556.3	23.6
504 x 85	23.6	42.8	3599	907	12061	606.9	25.8
546 x 85	25.5	46.4	4223	1153	15334	657.5	27.9
588 x 85	27.5	50.0	4898	1440	19152	708.1	30.1
630 x 85	29.5	53.6	5623	1771	23557	758.6	32.2

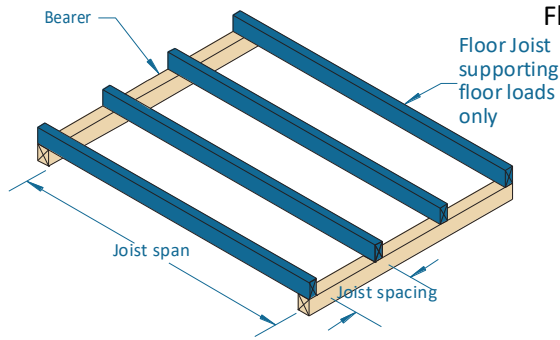
SmartLam GL13S section properties

Nominal Size DxB mm	Beam mass kg/m	Nominal section area 10 ³ mm ²	Major axis			Minor Axis	
			Zxx 10 ³ mm ²	Ixx 10 ⁶ mm ⁴	Elxx 10 ⁹ Nmm ²	Zyy 10 ³ mm ²	Iyy 10 ⁶ mm ⁴
126 x 115	8.0	14.5	304	19	255	277.7	16.0
168 x 115	10.6	19.3	541	45	604	370.3	21.3
210 x 115	13.3	24.2	845	89	1180	462.9	26.6
252 x 115	15.9	29.0	1217	153	2040	555.5	31.9
294 x 115	18.6	33.8	1657	244	3239	648.0	37.3
336 x 115	21.3	38.6	2164	364	4835	740.6	42.6
378 x 115	23.9	43.5	2739	518	6884	833.2	47.9
420 x 115	26.6	48.3	3381	710	9443	925.8	53.2
462 x 115	29.2	53.1	4091	945	12569	1018.3	58.6
504 x 115	31.9	58.0	4869	1227	16318	1110.9	63.9
546 x 115	34.5	62.8	5714	1560	20747	1203.5	69.2
588 x 115	37.2	67.6	6627	1948	25912	1296.1	74.5
630 x 115	39.8	72.5	7607	2396	31871	1388.6	79.8
126 x 135	9.4	17.0	357	23	299	382.7	25.8
168 x 135	12.5	22.7	635	53	709	510.3	34.4
210 x 135	15.6	28.4	992	104	1386	637.9	43.1
252 x 135	18.7	34.0	1429	180	2394	765.5	51.7
294 x 135	21.8	39.7	1945	286	3802	893.0	60.3
336 x 135	24.9	45.4	2540	427	5676	1020.6	68.9
378 x 135	28.1	51.0	3215	608	8081	1148.2	77.5
420 x 135	31.2	56.7	3969	833	11085	1275.8	86.1
462 x 135	34.3	62.4	4802	1109	14755	1403.3	94.7
504 x 135	37.4	68.0	5715	1440	19156	1530.9	103.3
546 x 135	40.5	73.7	6708	1831	24355	1658.5	111.9
588 x 135	43.7	79.4	7779	2287	30418	1786.1	120.6
630 x 135	46.8	85.1	8930	2813	37413	1913.6	129.2

NOTES:

- Due to the large range of SmartLam GL13S beams available, only the common sizes are stock items. Users wishing to purchase a SmartLam GL13S should contact their merchant to determine whether their selected size is a stock item or needs extra time to be made to order.

Floor joists supporting floor loads only



Floor mass - 40 kg/m²

EXAMPLE:

domestic floor loads
single span
joist spacing = 450 mm
joist span = 6000 mm

Enter single span table at 450 mm in joist spacing column, read down to a span equal to or greater than 6000 mm

ADOPT: SmartLam GL13S - 294 x 55

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

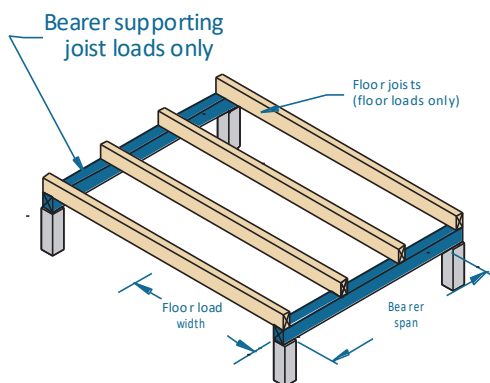
Joist spacing (mm)	300	450	600	300	450	600
Member size (GL13S) DxB (mm)	Maximum recommended joist span (mm)					
	Single span			Continuous span		
126x55	3400	2800	2500	4300	3300	2900
168x55	4500	3900	3500	5300	4700	4100
210x55	5300	4800	4400	6300	5700	5200
252x55	6000	5500	5200	7200	6500	6100
294x55	6700	6200	5800	8100	7300	6800
336x55	7400	6800	6400	9000	8100	7500
378x55	8000	7400	6900	8200	8800	8200
420x55	8600	8000	7500	11200	9600	8900
126x65	3600	2900	2700	4500	3500	3100
168x65	4700	4100	3700	5500	5000	4300
210x65	5500	5000	4700	6600	5900	5500
252x65	6200	5700	5400	7500	6800	6300
294x65	6900	6400	6000	8500	7600	7100
336x65	7600	7000	6600	9300	8500	7900
378x65	8300	7700	7200	8600	9200	8600
420x65	8900	8200	7800	11600	10000	9300
126x85	3900	3300	3000	4800	4000	3500
168x85	4900	4500	4100	5900	5400	4800
210x85	5800	5300	5000	7000	6300	5900
252x85	6600	6100	5700	8000	7300	6800
294x85	7300	6800	6400	9100	8200	7600
336x85	8000	7400	7000	8400	9000	8400
378x85	8700	8100	7600	9200	9800	9200
420x85	9300	8600	8200	10500	9900	9900
462x85	9900	9200	8700	11300	9900	9900
126x115	4200	3700	3300	5200	4500	3900
168x115	5300	4800	4500	6400	5800	5300
210x115	6100	5700	5300	7600	6800	6400
252x115	6900	6400	6100	8700	7900	7300
294x115	7700	7200	6800	8300	8800	8200
336x115	8400	7800	7400	11000	9800	9100
378x115	9100	8500	8100	10500	9900	9900
420x115	9700	9100	8700	11300	9900	9900
462x115	10200	9700	9200	12000	12000	12000

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 5
- D = member depth, B = member breadth, NS = not suitable.
- End bearing lengths = 42 mm at end supports and 58 mm at internal supports for continuous members.
- Not all sizes of SmartLam GL13S in this table are stocked in each state. Please check with your supplier before ordering

Single span floor bearers supporting floor loads only - Single span

Floor mass - 40 kg/m²



EXAMPLE:

single span bearer = 4000 mm
floor load width = 5800 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:

SmartLam GL 13S - 420 x 55
(add extra 20 mm bearing)

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 (GL13S) DxB (mm)	Maximum recommended Single span bearer span (mm)									
126x55	2200	1900	1700	1600	1500	1400	1300	1300	1200	1200
168x55	2900	2500	2300	2100	2000	1900	1800	1700	1600	1600
210x55	3600	3200	2900	2700	2500	2400	2200	2100	2100	2000
252x55	4100	3700	3500	3200	3000	2800	2700	2600	2500	2400
294x55	4600	4200	3900	3700	3500	3300	3200	3000	2900	2800
336x55	5100	4600	4300	4100	3900	3700	3600	3500	3300 ₅	3200 ₁₀
378x55	5600	5100	4700	4500	4200	4100	3900	3800 ₅	3700 ₁₀	3600 ₁₅
420x55	6100	5500	5100	4800	4600	4400	4300 ₅	4100 ₁₀	4000 ₁₅	3900 ₂₅
126x65	2300	2000	1800	1700	1600	1500	1400	1300	1300	1200
168x65	3100	2700	2400	2200	2100	2000	1900	1800	1700	1700
210x65	3800	3400	3000	2800	2600	2500	2400	2300	2200	2100
252x65	4300	3900	3600	3400	3200	3000	2900	2700	2600	2500
294x65	4800	4400	4100	3800	3700	3500	3300	3200	3100	3000
336x65	5300	4800	4500	4200	4100	3900	3800	3600	3500	3400
378x65	5800	5300	4900	4600	4400	4200	4100	4000	3900	3800 ₅
420x65	6300	5700	5300	5000	4800	4600	4400	4300	4200 ₁₀	4100 ₁₅
126x85	2500	2200	2000	1800	1700	1600	1500	1500	1400	1400
168x85	3400	2900	2700	2500	2300	2200	2100	2000	1900	1800
210x85	4000	3600	3300	3100	2900	2700	2600	2500	2400	2300
252x85	4600	4200	3900	3700	3500	3300	3100	3000	2900	2800
294x85	5100	4700	4300	4100	3900	3800	3600	3500	3400	3200
336x85	5700	5200	4800	4500	4300	4200	4000	3900	3800	3700
378x85	6200	5600	5200	5000	4700	4500	4400	4200	4100	4000
420x85	6700	6100	5700	5400	5100	4900	4700	4600	4500	4300
126x115	2800	2400	2200	2000	1900	1800	1700	1600	1600	1500
168x115	3700	3200	2900	2700	2500	2400	2300	2200	2100	2000
210x115	4300	3900	3600	3400	3200	3000	2900	2800	2600	2600
252x115	4900	4500	4200	3900	3800	3600	3500	3300	3200	3100
294x115	5500	5000	4700	4400	4200	4000	3900	3800	3700	3600
336x115	6100	5500	5200	4900	4700	4500	4300	4200	4100	4000
378x115	6600	6000	5600	5300	5100	4900	4700	4600	4400	4300
420x115	7100	6500	6100	5800	5500	5300	5100	4900	4800	4700

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 (GL13S) DxB (mm)	Maximum recommended Continuous span bearer span (mm)									
126x55	2900	2400	2100	1800	1700	1500	1400	1300	1300	1200
168x55	3900	3200	2800	2500	2200	2100	1900	1800	1700	1600
210x55	4600	4000	3500	3100	2800	2600	2400	2300 ₁₀	2100 ₁₅	2000 ₂₀
252x55	5200	4700	4100	3700	3400 ₅	3100 ₁₀	2900 ₂₀	2700 ₃₀	2600 ₃₅	2400 ₅₀
294x55	5900	5300	4800	4300 ₁₀	3900 ₂₀	3600 ₃₀	3400 ₄₅	3200 ₆₅	3000 ₇₀	2900 ₈₀
336x55	6500	5900	5400 ₁₅	4900 ₂₅	4500 ₄₀	4100 ₆₅	3900 ₇₅	3600 ₈₅	3400 ₉₅	3300 ₁₀₅
378x55	7100	6400	5900 ₂₅	5500 ₄₅	5000 ₇₀	4700 ₈₅	4300 ₉₅	4100 ₁₀₅	3900 ₁₂₀	3700 ₁₃₀
420x55	7600	6900 ₅	6400 ₃₅	6100 ₇₀	5600 ₈₅	5200 ₁₀₀	4800 ₁₁₅	4500 ₁₂₅	4300 ₁₄₀	4100 ₁₅₀
126x65	3100	2600	2200	2000	1800	1700	1600	1500	1400	1300
168x65	4000	3500	3000	2700	2400	2200	2100	2000	1800	1800
210x65	4700	4300	3800	3300	3000	2800	2600	2500	2300 ₅	2200 ₁₀
252x65	5400	4900	4500	4000	3700	3400 ₅	3100 ₁₅	3000 ₂₀	2800 ₂₅	2700 ₃₅
294x65	6100	5500	5100	4700	4300 ₁₅	3900 ₂₀	3700 ₃₀	3500 ₄₀	3300 ₅₅	3100 ₆₅
336x65	6700	6100	5700	5300 ₁₅	4900 ₃₀	4500 ₄₀	4200 ₆₀	3900 ₇₀	3700 ₈₀	3600 ₉₀
378x65	7300	6700	6200 ₁₀	5800 ₃₀	5500 ₅₀	5100 ₇₀	4700 ₈₀	4400 ₉₀	4200 ₁₀₀	4000 ₁₁₀
420x65	7900	7200	6700 ₁₅	6300 ₄₀	6000 ₇₀	5600 ₈₅	5200 ₁₀₀	4900 ₁₁₀	4700 ₁₂₀	4400 ₁₃₀
126x85	3400	3000	2600	2300	2100	1900	1800	1700	1600	1500
168x85	4300	3900	3400	3100	2800	2600	2400	2200	2100	2000
210x85	5100	4600	4300	3800	3500	3200	3000	2800	2700	2500
252x85	5800	5200	4900	4600	4200	3900	3600	3400 ₅	3200 ₁₀	3000 ₁₅
294x85	6500	5900	5500	5200	4900	4500 ₅	4200 ₁₅	3900 ₂₀	3700 ₂₅	3600 ₃₅
336x85	7200	6500	6000	5700	5500 ₁₀	5100 ₂₀	4800 ₃₀	4500 ₄₀	4300 ₅₅	4100 ₆₅
378x85	7800	7100	6600	6200 ₅	6000 ₂₀	5700 ₃₅	5400 ₅₅	5100 ₇₀	4800 ₇₅	4600 ₈₅
420x85	8400	7700	7100	6700 ₁₅	6400 ₃₀	6200 ₅₅	6000 ₇₅	5600 ₈₅	5300 ₉₅	5100 ₁₀₅
126x115	3700	3300	3000	2700	2400	2200	2100	2000	1800	1700
168x115	4600	4200	3900	3600	3200	3000	2800	2600	2500	2300
210x115	5400	4900	4600	4300	4000	3700	3500	3300	3100	2900
252x115	6200	5600	5200	5000	4700	4500	4200	3900	3700	3500
294x115	6900	6300	5900	5600	5300	5100	4900	4600 ₅	4300 ₁₀	4100 ₁₅
336x115	7600	7000	6500	6100	5900	5600	5400 ₁₀	5200 ₂₀	5000 ₂₅	4700 ₃₀
378x115	8300	7600	7100	6700	6400	6200 ₁₀	5900 ₂₀	5800 ₃₀	5600 ₄₅	5300 ₆₀
420x115	9000	8200	7600	7200	6900 ₅	6600 ₂₀	6400 ₃₀	6200 ₄₅	6100 ₇₀	5900 ₈₀
462x115	9600	8800	8200	7800	7400 ₁₅	7100 ₂₅	6900 ₄₀	6700 ₆₅	6500 ₈₀	6300 ₉₀

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, 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 centers at 600 mm max)
5. Not all sizes of SmartLam GL13S 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

Single span

Floor mass - 40 kg/m²

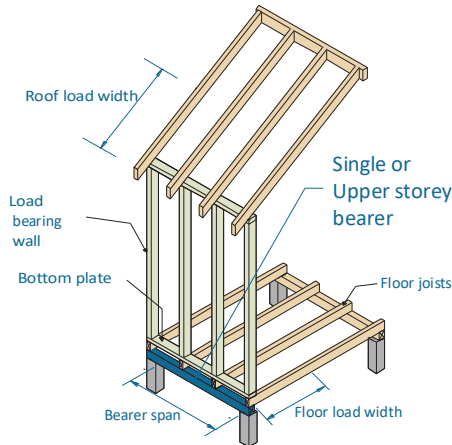
EXAMPLE:

sheet roof - 40 kg/m²
 floor load width = 3500 mm
 roof load width = 1950 mm
 bearer span = 3000 mm (single span)

Enter single span table at 4800 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:

SmartLam GL13S - 294 x 65



Floor load width (mm)	Roof mass (kg/m ²)	1200			2400			4800		
Roof load width (mm)		1500	4500	7500	1500	4500	7500	1500	4500	7500
Member size (GL13S) DxB (mm)		Maximum recommended Single span bearer span (mm)								
126x65	40	1900	1600	1500	1600	1500	1400	1400	1300	1200
	90	1700	1400	1200	1500	1300	1200	1300	1200	1100
168x65	40	2500	2200	2000	2200	2000	1900	1900	1700	1700
	90	2300	1900	1700	2100	1800	1600	1800	1600	1500
210x65	40	3100	2800	2500	2800	2500	2300	2300	2200	2100
	90	2900	2400	2100	2600	2200	2000	2200	2000	1900
252x65	40	3700	3300	3000	3300	3000	2800	2800	2600	2500
	90	3400	2800	2500	3100	2700	2400	2700	2400	2200
294x65	40	4100	3800	3500	3800	3500	3300	3300	3100	2900
	90	3900	3300	2900	3600	3100	2800	3200	2800	2600
336x65	40	4600	4200	3900	4200	3900	3700	3700	3500	3400
	90	4300	3700	3400	4000	3600	3200	3600	3200	3000 ₅
378x65	40	5000	4600	4300	4600	4300	4100	4000	3900	3700 ₅
	90	4700	4100	3700	4400	3900	3600	3900	3600 ₅	3400 ₁₅
420x65	40	5400	4900	4600	4900	4600	4400	4400 ₅	4200 ₅	4000 ₁₀
	90	5100	4400	4000	4700	4200	3900 ₅	4300 ₅	3900 ₁₅	3700 ₂₀
126x85	40	2000	1800	1600	1800	1600	1500	1500	1400	1400
	90	1900	1500	1400	1700	1400	1300	1500	1300	1200
168x85	40	2700	2400	2200	2400	2200	2000	2000	1900	1800
	90	2500	2100	1800	2300	1900	1700	2000	1800	1600
210x85	40	3400	3000	2800	3000	2800	2600	2500	2400	2300
	90	3100	2600	2300	2800	2400	2200	2500	2200	2000
252x85	40	3900	3600	3300	3600	3300	3100	3100	2900	2800
	90	3700	3100	2800	3400	2900	2600	2900	2700	2400
294x85	40	4400	4000	3800	4000	3800	3600	3600	3400	3200
	90	4200	3600	3200	3900	3400	3100	3400	3100	2900
336x85	40	4900	4500	4200	4500	4200	4000	3900	3800	3600
	90	4600	4000	3700	4300	3800	3500	3800	3500	3300
378x85	40	5300	4900	4600	4900	4600	4300	4300	4100	4000
	90	5000	4400	4000	4700	4200	3900	4200	3900	3700
420x85	40	5800	5300	4900	5300	4900	4700	4700	4500	4300
	90	5400	4700	4300	5100	4500	4200	4500	4200	4000 ₅
126x115	40	2200	2000	1800	2000	1800	1700	1700	1600	1500
	90	2100	1700	1500	1900	1600	1400	1600	1400	1300
168x115	40	3000	2700	2400	2700	2400	2300	2200	2100	2000
	90	2800	2300	2000	2500	2200	1900	2200	1900	1800
210x115	40	3700	3300	3000	3300	3000	2800	2800	2700	2500
	90	3500	2900	2500	3100	2700	2400	2700	2400	2300
252x115	40	4200	3900	3600	3900	3600	3400	3400	3200	3000
	90	4000	3400	3000	3700	3200	2900	3300	2900	2700

Floor bearers supporting single storey load bearing wall - sheet and tiled roof Single span (cont'd)

Floor load width (mm)	Roof mass (kg/m ²)	1200			2400			4800		
Roof load width (mm)		1500	4500	7500	1500	4500	7500	1500	4500	7500
Member size (GL13S) DxB (mm)		Maximum recommended single span bearer span (mm)								
294x115	40	4700	4300	4100	4400	4100	3900	3800	3700	3600
	90	4500	3900	3600	4200	3700	3400	3700	3400	3200
336x115	40	5200	4800	4500	4800	4500	4300	4300	4100	3900
	90	4900	4300	3900	4600	4100	3800	4100	3800	3600
378x115	40	5700	5200	4900	5200	4900	4700	4600	4500	4300
	90	5400	4700	4300	5000	4500	4200	4500	4200	3900
420x115	40	6200	5700	5300	5700	5300	5100	5000	4800	4700
	90	5800	5100	4700	5400	4900	4500	4900	4500	4300
210x135	40	3800	3500	3200	3500	3200	3000	3000	2800	2700
	90	3600	3000	2700	3300	2800	2600	2900	2600	2400
252x135	40	4400	4000	3800	4000	3800	3600	3600	3400	3200
	90	4100	3600	3200	3900	3400	3100	3400	3100	2900
294x135	40	4900	4500	4200	4500	4200	4000	4000	3800	3700
	90	4700	4000	3700	4300	3900	3600	3900	3600	3300
336x135	40	5400	5000	4700	5000	4700	4500	4400	4200	4100
	90	5100	4500	4100	4800	4300	4000	4300	4000	3800
378x135	40	5900	5400	5100	5500	5100	4900	4800	4600	4500
	90	5600	4900	4500	5200	4700	4300	4700	4400	4100
420x135	40	6400	5900	5500	5900	5500	5300	5200	5000	4800
	90	6000	5300	4800	5700	5100	4700	5100	4700	4400

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

Floor load width (mm)	Roof mass (kg/m ²)	1200			2400			4800		
Roof load width (mm)		1500	4500	7500	1500	4500	7500	1500	4500	7500
Member size (GL13S) DxB (mm)		Maximum recommended Continuous span bearer span (mm)								
126x65	40	2500	2200	1900	2000	1800	1700	1500	1400	1300
	90	2300	1800	1500	1900	1600	1400	1400	1300	1200
168x65	40	3400	3000	2600	2600	2400	2300	2000	1900	1800
	90	3100	2400	2000	2500	2200	1800	1900	1700	1600
210x65	40	4100	3700	3300	3300	3100	2900	2400	2300 ₅	2200 ₁₀
	90	3800	3000	2400	3200	2700	2300 ₅	2400	2200 ₁₀	2000 ₂₀
252x65	40	4600	4200	3900	4000	3700	3400	2900 ₂₀	2800 ₂₅	2700 ₃₀
	90	4400	3600	2900 ₂₀	3800	3300 ₁₀	2800 ₂₅	2900 ₂₅	2600 ₃₅	2400 ₅₀
294x65	40	5200	4800	4500 ₅	4600 ₅	4300 ₁₀	4000 ₂₀	3400 ₄₀	3300 ₅₀	3200 ₆₅
	90	4900	4200 ₁₅	3400 ₄₀	4400 ₁₀	3800 ₂₅	3300 ₅₅	3300 ₅₀	3100 ₇₀	2800 ₈₀
336x65	40	5800	5300	4900 ₁₅	5300 ₂₀	4900 ₂₅	4600 ₃₅	3900 ₇₀	3800 ₈₀	3600 ₈₅
	90	5400	4700 ₃₀	3900 ₇₀	5000 ₂₅	4300 ₅₀	3700 ₈₀	3800 ₇₅	3500 ₉₀	3200 ₁₀₅
378x65	40	6300	5800 ₅	5400 ₂₅	5800 ₃₀	5400 ₄₀	5100 ₆₅	4400 ₉₀	4200 ₁₀₀	4100 ₁₀₅
	90	5900	5200 ₄₅	4400 ₉₀	5500 ₃₅	4900 ₇₅	4200 ₁₀₀	4300 ₉₅	3900 ₁₁₀	3700 ₁₃₀
420x65	40	6800	6200 ₁₀	5800 ₃₅	6200 ₄₅	5800 ₆₅	5500 ₈₀	4900 ₁₁₀	4700 ₁₂₀	4500 ₁₂₅
	90	6400 ₅	5600 ₆₅	4900 ₁₁₀	6000 ₅₅	5300 ₉₀	4700 ₁₂₅	4800 ₁₁₅	4400 ₁₃₅	4100 ₁₅₅

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

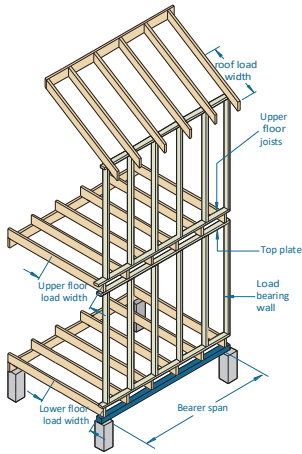
Continuous span

Floor load width (mm)	Roof mass (kg/m ²)	1200			2400			4800		
Roof load width (mm)		1500	4500	7500	1500	4500	7500	1500	4500	7500
Member size (GL13S) DxB (mm)		Maximum recommended Continuous span bearer span (mm)								
126x85	40	2800	2500	2200	2300	2100	2000	1700	1600	1500
	90	2600	2000	1700	2100	1800	1600	1600	1500	1400
168x85	40	3700	3300	3000	3000	2800	2600	2200	2100	2100
	90	3400	2700	2200	2900	2500	2100	2200	2000	1800
210x85	40	4300	4000	3700	3800	3500	3300	2800	2700	2600
	90	4100	3400	2800	3600	3100	2700	2700	2500	2300 ₅
252x85	40	5000	4500	4200	4500	4200	3900	3400 ₅	3200 ₁₀	3100 ₁₅
	90	4700	4100	3400 ₅	4300	3700	3200 ₁₀	3300 ₅	3000 ₁₅	2800 ₂₅
294x85	40	5600	5100	4800	5100	4800	4500 ₅	3900 ₂₀	3800 ₂₅	3600 ₃₀
	90	5200	4600	3900 ₂₀	4900	4300 ₁₀	3700 ₂₅	3800 ₂₅	3500 ₃₅	3200 ₅₅
336x85	40	6100	5600	5300	5600	5300 ₅	5000 ₁₅	4500 ₄₀	4300 ₅₀	4100 ₆₅
	90	5800	5000 ₁₀	4500 ₄₀	5400	4800 ₂₅	4300 ₅₅	4400 ₄₅	4000 ₇₀	3700 ₈₀
378x85	40	6700	6100	5800 ₅	6200 ₅	5800 ₁₅	5500 ₂₅	5000 ₇₀	4800 ₇₅	4600 ₈₀
	90	6300	5500 ₁₅	5000 ₇₀	5900 ₁₀	5300 ₃₅	4800 ₇₅	4900 ₇₀	4500 ₈₅	4200 ₁₀₀
420x85	40	7300	6600	6200 ₁₀	6700 ₁₅	6200 ₂₅	5900 ₃₅	5600 ₈₅	5400 ₉₅	5200 ₁₀₀
	90	6800	6000 ₂₅	5400 ₈₅	6400 ₂₀	5700 ₅₅	5300 ₉₅	5500 ₉₀	5000 ₁₀₅	4600 ₁₂₀
126x115	40	3100	2700	2500	2600	2400	2300	1900	1900	1800
	90	2800	2300	1900	2500	2100	1800	1900	1700	1600
168x115	40	3900	3600	3300	3500	3300	3000	2600	2500	2400
	90	3700	3100	2600	3300	2900	2500	2500	2300	2100
210x115	40	4700	4300	4000	4300	4000	3800	3300	3100	3000
	90	4400	3800	3300	4100	3600	3100	3200	2900	2700
252x115	40	5300	4900	4600	4900	4600	4300	3900	3800	3600
	90	5000	4400	3900	4700	4200	3700	3800	3500	3200 ₁₀
294x115	40	6000	5500	5100	5500	5100	4900	4600 ₅	4400 ₁₀	4200 ₁₅
	90	5600	4900	4500 ₅	5300	4700	4300 ₁₀	4400 ₅	4100 ₂₀	3800 ₂₅
336x115	40	6600	6100	5700	6100	5700	5400	5200 ₂₀	5000 ₂₅	4800 ₃₀
	90	6200	5400	5000 ₁₅	5800	5200	4800 ₂₀	5100 ₂₅	4600 ₃₅	4300 ₅₀
378x115	40	7200	6600	6200	6600	6200	5900	5800 ₃₅	5600 ₄₀	5400 ₅₅
	90	6800	5900	5400 ₂₅	6300	5700 ₁₀	5300 ₃₅	5700 ₄₀	5200 ₆₅	4800 ₇₅
420x115	40	7800	7100	6700	7100	6700	6400 ₁₀	6300 ₅₀	6100 ₆₅	5900 ₇₀
	90	7400	6400	5900 ₃₅	6800	6100 ₂₀	5700 ₅₅	6200 ₆₅	5700 ₇₅	5400 ₉₅
460x115	40	8300	7600	7200	7600	7200 ₁₀	6800 ₁₅	6800 ₇₀	6500 ₇₅	6300 ₈₅
	90	7900	6900 ₁₀	6300 ₅₅	7300 ₅	6600 ₂₅	6100 ₇₀	6600 ₇₅	6100 ₉₀	5800 ₁₀₅
210x135	40	4800	4400	4200	4400	4200	3900	3500	3400	3300
	90	4600	4000	3500	4200	3800	3400	3400	3100	2900
252x135	40	5500	5100	4800	5100	4800	4500	4200	4100	3900
	90	5200	4500	4200	4900	4400	4000	4100	3800	3500
294x135	40	6200	5700	5300	5700	5300	5100	4900	4700	4500 ₅
	90	5900	5100	4700	5500	4900	4500	4800	4400 ₁₀	4100 ₁₅
336x135	40	6900	6300	5900	6300	5900	5600	5600 ₁₀	5300 ₁₅	5200 ₂₀
	90	6500	5600	5200 ₅	6000	5400	5000 ₁₀	5400 ₁₀	5000 ₂₅	4700 ₃₅
378x135	40	7500	6900	6400	6900	6400	6100	6100 ₂₀	5800 ₂₅	5600 ₃₀
	90	7100	6200	5600 ₁₅	6600	5900	5500 ₂₀	5900 ₂₅	5500 ₃₅	5200 ₆₀
420x135	40	8100	7400	6900	7400	7000	6600	6600 ₃₀	6300 ₃₅	6100 ₄₅
	90	7600	6700	6100 ₂₀	7100	6400 ₅	5900 ₃₀	6400 ₃₅	5900 ₅₅	5600 ₇₅
460x135	40	8600	7900	7400	7900	7400	7100 ₅	7000 ₄₀	6800 ₅₀	6500 ₆₅
	90	8200	7100	6500 ₃₀	7600	6800 ₁₀	6300 ₄₀	6800 ₄₅	6300 ₇₀	6000 ₈₅

Floor bearers supporting two floors and roof - sheet and tiled roof

Single span

Floor mass - 40 kg/m²



EXAMPLE:

sheet roof - 40 kg/m²

lower floor load width = 3500 mm

upper floor load width = 1500 mm

roof load width = 1950 mm

bearer span = 3100 mm (single span)

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:

SmartLam GL13S - 336 x 66

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 (GL13S) Dx B (mm)	Roof mass (kg/m ²)	Maximum recommended single span bearer span (mm)											
126x65	40	1300	1200	1200	1200	1100	1100	1200	1100	1100	1100	1000	1000
	90	1200	1100	1000	1100	1000	1000	1100	1000	1000	1100	1000	NS
168x65	40	1700	1600	1600	1600	1500	1400	1600	1500	1400	1400	1400	1400
	90	1700	1500	1400	1500	1400	1300	1500	1400	1300	1400	1300	1200
210x65	40	2200	2100	2000	2000	1900	1800	2000	1900	1800	1800	1800	1700
	90	2100	1900	1700	1900	1800	1700	1900	1800	1600	1800	1700	1600
252x65	40	2600	2500	2400	2400	2300	2200	2400	2300	2200	2200	2100	2100
	90	2500	2300	2100	2300	2100	2000	2300	2100	2000	2100	2000	1900
294x65	40	3100	2900	2800	2800	2700	2600	2800	2600	2500	2600	2500	2400
	90	3000	2700	2500	2700	2500	2300	2700	2500	2300	2500	2300	2200 ₁₀
336x65	40	3400	3300	3200	3200	3100	2900	3200	3000	2900	2900 ₅	2800 ₅	2800 ₁₀
	90	3300	3000	2800	3100	2900	2700 ₁₀	3100	2800 ₅	2700 ₁₀	2900 ₅	2700 ₁₀	2500 ₂₀
378x65	40	3700	3600	3500	3500	3400	3300 ₅	3500	3400 ₅	3300 ₁₀	3300 ₁₀	3200 ₁₅	3100 ₂₀
	90	3600	3400	3200 ₁₀	3400	3200 ₁₀	3000 ₂₀	3400	3200 ₁₀	3000 ₂₀	3200 ₁₅	3000 ₂₀	2900 ₃₀
420x65	40	4100	3900	3800	3800	3700 ₅	3600 ₁₀	3800 ₅	3600 ₁₀	3500 ₁₅	3600 ₂₀	3500 ₂₀	3400 ₂₅
	90	3900	3600 ₅	3400 ₁₅	3700 ₅	3500 ₁₅	3300 ₂₅	3700 ₁₀	3500 ₂₀	3300 ₃₀	3500 ₂₀	3300 ₃₀	3200 ₄₀
126x85	40	1400	1300	1300	1300	1200	1200	1300	1200	1200	1200	1100	1100
	90	1400	1200	1100	1200	1100	1100	1200	1100	1100	1200	1100	1000
168x85	40	1900	1800	1700	1700	1700	1600	1700	1600	1600	1600	1500	1500
	90	1800	1600	1500	1700	1500	1400	1700	1500	1400	1600	1400	1400
210x85	40	2400	2300	2100	2200	2100	2000	2100	2100	2000	2000	1900	1900
	90	2300	2100	1900	2100	1900	1800	2100	1900	1800	2000	1800	1700
252x85	40	2900	2700	2600	2600	2500	2400	2600	2500	2400	2400	2300	2300
	90	2800	2500	2300	2500	2300	2200	2500	2300	2200	2400	2200	2100
294x85	40	3300	3200	3000	3100	2900	2800	3000	2900	2800	2800	2700	2600
	90	3200	2900	2700	3000	2700	2600	2900	2700	2500	2800	2600	2400
336x85	40	3700	3500	3400	3400	3300	3200	3400	3300	3200	3200	3100	3000
	90	3600	3300	3100	3300	3100	2900	3300	3100	2900	3100	2900	2800 ₅
378x85	40	4000	3800	3700	3700	3600	3500	3700	3600	3500	3500	3400	3300 ₅
	90	3900	3600	3400	3700	3400	3300 ₅	3600	3400	3200 ₅	3500	3300 ₅	3100 ₁₅
420x85	40	4300	4200	4000	4000	3900	3800	4000	3900	3800	3800	3700 ₅	3600 ₁₀
	90	4200	3900	3700	4000	3700	3500 ₁₀	3900	3700 ₅	3500 ₁₅	3700 ₅	3600 ₁₅	3400 ₂₀
126x115	40	1600	1500	1400	1400	1400	1300	1400	1300	1300	1300	1300	1200
	90	1500	1400	1200	1400	1300	1200	1400	1300	1200	1300	1200	1100
168x115	40	2100	2000	1900	1900	1800	1800	1900	1800	1700	1800	1700	1600
	90	2000	1800	1700	1900	1700	1600	1800	1700	1600	1700	1600	1500
210x115	40	2600	2500	2400	2400	2300	2200	2400	2300	2200	2200	2100	2100
	90	2500	2300	2100	2300	2100	2000	2300	2100	2000	2200	2000	1900
252x115	40	3200	3000	2900	2900	2800	2700	2900	2700	2600	2700	2600	2500
	90	3100	2800	2500	2800	2600	2400	2800	2600	2400	2600	2400	2300

Floor bearers supporting two floors and roof - sheet and tiled roof

Single span (Cont'd)

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 (GL13S) DxB (mm)	Roof mass (kg/m ²)	Maximum recommended single span bearer span (mm)											
294x115	40	3600	3400	3300	3300	3200	3100	3300	3200	3100	3100	3000	2900
	90	3500	3200	3000	3300	3000	2800	3200	3000	2800	3000	2800	2700
336x115	40	3900	3800	3700	3700	3600	3500	3700	3500	3400	3500	3400	3300
	90	3800	3600	3300	3600	3400	3200	3600	3400	3200	3400	3200	3100
378x115	40	4300	4100	4000	4000	3900	3800	4000	3900	3800	3800	3700	3600
	90	4200	3900	3700	3900	3700	3500	3900	3700	3500	3700	3500	3400
420x115	40	4700	4500	4300	4400	4200	4100	4300	4200	4100	4100	4000	3900
	90	4500	4200	4000	4300	4000	3800	4200	4000	3800	4000	3800	3700 ₅
462x115	40	5000	4800	4600	4700	4500	4400	4600	4500	4400	4400	4300	4200
	90	4900	4500	4300	4600	4300	4100	4600	4300	4100	4300	4100	3900 ₁₀
126x135	40	1700	1600	1500	1500	1400	1400	1500	1400	1400	1400	1300	1300
	90	1600	1400	1300	1500	1300	1300	1400	1300	1200	1400	1300	1200
168x135	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
210x135	40	2800	2600	2500	2500	2400	2300	2500	2400	2300	2300	2300	2200
	90	2700	2400	2200	2500	2300	2100	2400	2200	2100	2300	2100	2000
252x135	40	3300	3200	3000	3000	2900	2800	3000	2900	2800	2800	2700	2600
	90	3200	2900	2700	3000	2700	2500	2900	2700	2500	2700	2600	2400
294x135	40	3700	3600	3400	3500	3400	3300	3400	3300	3200	3300	3200	3100
	90	3600	3300	3100	3400	3200	3000	3400	3200	3000	3200	3000	2800
336x135	40	4100	3900	3800	3800	3700	3600	3800	3700	3600	3600	3500	3400
	90	4000	3700	3500	3800	3500	3400	3700	3500	3300	3500	3400	3200
378x135	40	4500	4300	4200	4200	4100	3900	4200	4000	3900	3900	3800	3800
	90	4400	4000	3800	4100	3900	3700	4100	3800	3600	3900	3700	3500
420x135	40	4800	4700	4500	4500	4400	4300	4500	4400	4200	4300	4200	4100
	90	4700	4400	4100	4400	4200	4000	4400	4100	4000	4200	4000	3800
462x135	40	5200	5000	4800	4900	4700	4600	4800	4700	4600	4600	4500	4400
	90	5100	4700	4400	4800	4500	4300	4700	4500	4200	4500	4300	4100

NOTES:

1. D = member depth, B = member breadth, NS = not suitable.
2. The above table was based on total upper floor mass of 40 kg/m², total ground floor mass of 40 kg/m², floor live load of 1.5 kPa, floor point load of 1.8 kN, wall mass of 32 kg/m², & permanent floor live load of 0.5 kPa.
3. The above table was based on a wall height of 5400 mm
4. 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.
5. Not all sizes of SmartLam GL13S in this table are stocked in each state. Please check with your supplier before ordering
6. Sizes in *Italics* are for a Natural Durability class 3 Hardwood GL13S

Floor bearers supporting two floors and roof - sheet and tiled roof

Continuous span

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 (GL13S) Dx B (mm)	Roof mass (kg/m ²)	Maximum recommended continuous span bearer span (mm)											
126x65	40	1600	1500	1400	1400	1300	1200	1300	1300	1200	1200	1100	1100
	90	1500	1300	1200	1300	1200	1100	1300	1200	1100	1200	1100	1000
168x65	40	2100	2000	1900	1900	1800	1700	1800	1700	1600	1600	1500	1500
	90	2000	1800	1600	1800	1600	1500 ₅	1700	1600	1400 ₅	1600	1400 ₅	1300 ₁₅
210x65	40	2700	2500	2300 ₅	2300 ₅	2200 ₁₀	2100 ₁₅	2200 ₁₀	2100 ₁₅	2000 ₂₀	2000 ₂₀	1900 ₂₅	1900 ₃₀
	90	2600	2200 ₁₀	2000 ₂₀	2200 ₁₀	2000 ₂₀	1800 ₃₀	2200 ₁₅	2000 ₂₅	1800 ₃₅	2000 ₂₅	1800 ₃₅	1700 ₄₅
252x65	40	3200 ₁₀	3000 ₁₅	2800 ₂₅	2800 ₂₅	2600 ₃₅	2500 ₄₀	2700 ₃₀	2600 ₃₅	2500 ₅₀	2400 ₅₀	2300 ₆₀	2200 ₇₀
	90	3100 ₁₅	2700 ₃₀	2400 ₅₀	2700 ₃₀	2400 ₅₀	2200 ₇₀	2600 ₃₅	2400 ₆₀	2200 ₇₅	2400 ₆₀	2200 ₇₀	2000 ₈₅
294x65	40	3800 ₂₅	3500 ₃₅	3300 ₅₀	3300 ₅₅	3100 ₆₅	2900 ₇₅	3100 ₆₅	3000 ₇₀	2900 ₈₀	2800 ₈₀	2700 ₈₅	2600 ₉₅
	90	3600 ₃₀	3100 ₆₅	2800 ₈₀	3200 ₆₅	2800 ₈₀	2600 ₉₅	3000 ₇₀	2800 ₈₅	2500 ₁₀₀	2800 ₈₅	2500 ₁₀₀	2400 ₁₁₅
336x65	40	4300 ₅₀	4000 ₆₅	3800 ₈₀	3700 ₈₀	3500 ₉₀	3400 ₁₀₀	3600 ₉₀	3400 ₉₅	3300 ₁₀₀	3200 ₁₀₅	3100 ₁₁₀	3000 ₁₂₀
	90	4100 ₆₅	3600 ₈₅	3200 ₁₀₅	3600 ₈₅	3200 ₁₀₅	3000 ₁₂₅	3500 ₉₀	3200 ₁₁₀	2900 ₁₂₅	3200 ₁₁₀	2900 ₁₂₅	2700 ₁₄₀
378x65	40	4700 ₇₀	4500 ₈₅	4200 ₁₀₀	4200 ₁₀₀	4000 ₁₁₀	3800 ₁₂₀	4000 ₁₁₀	3900 ₁₂₀	3700 ₁₂₅	3600 ₁₃₀	3500 ₁₃₅	3400 ₁₄₅
	90	4600 ₈₅	4000 ₁₀₅	3600 ₁₃₀	4100 ₁₁₀	3600 ₁₃₀	3300 ₁₅₀	3900 ₁₁₅	3600 ₁₃₅	3300 ₁₅₅	3600 ₁₃₅	3300 ₁₅₅	3000 ₁₇₅
420x65	40	5100 ₈₅	4900 ₁₀₅	4700 ₁₂₀	4700 ₁₂₀	4400 ₁₃₀	4200 ₁₄₅	4400 ₁₃₀	4300 ₁₄₀	4100 ₁₅₀	4000 ₁₅₅	3900 ₁₆₀	3800 ₁₇₅
	90	5000 ₉₅	4500 ₁₃₀	4000 ₁₅₅	4500 ₁₃₀	4000 ₁₅₀	3700 ₁₇₅	4300 ₁₃₅	4000 ₁₆₀	3600 ₁₈₀	3900 ₁₆₀	3600 ₁₈₀	3400 ₂₀₀
126x85	40	1800	1700	1600	1600	1500	1400	1500	1400	1400	1400	1300	1300
	90	1700	1500	1400	1500	1400	1200	1500	1300	1200	1300	1200	1100
168x85	40	2500	2300	2100	2100	2000	1900	2000	1900	1900	1800	1800	1700
	90	2300	2000	1800	2100	1800	1700	2000	1800	1600	1800	1600	1500
210x85	40	3100	2900	2700	2700	2500	2400	2500	2400	2300 ₅	2300 ₅	2200 ₁₀	2100 ₁₀
	90	2900	2600	2300 ₅	2600	2300 ₅	2100 ₁₅	2500	2200 ₁₀	2100 ₂₀	2200 ₁₀	2100 ₁₅	1900 ₂₅
252x85	40	3700	3400	3200 ₁₀	3200 ₁₀	3000 ₁₅	2900 ₂₀	3000 ₁₅	2900 ₂₀	2800 ₂₅	2800 ₃₀	2700 ₃₀	2600 ₃₅
	90	3500	3100 ₁₅	2800 ₃₀	3100 ₁₅	2800 ₂₅	2500 ₃₅	3000 ₂₀	2700 ₃₀	2500 ₄₅	2700 ₃₀	2500 ₄₀	2300 ₆₅
294x85	40	4200 ₁₀	4000 ₂₀	3800 ₂₅	3700 ₂₅	3500 ₃₅	3400 ₄₅	3600 ₃₅	3400 ₄₀	3300 ₅₀	3200 ₅₅	3100 ₆₅	3000 ₇₀
	90	4100 ₁₅	3600 ₃₅	3200 ₅₅	3600 ₃₀	3200 ₅₅	3000 ₇₅	3500 ₄₀	3200 ₆₅	2900 ₇₅	3200 ₆₅	2900 ₇₅	2700 ₉₀
336x85	40	4600 ₂₀	4400 ₃₀	4300 ₅₀	4300 ₅₅	4000 ₆₅	3800 ₇₅	4100 ₆₅	3900 ₇₀	3800 ₈₀	3700 ₈₀	3600 ₉₀	3400 ₉₅
	90	4500 ₃₀	4100 ₆₅	3700 ₈₀	4100 ₆₅	3700 ₈₀	3400 ₉₅	4000 ₇₀	3600 ₈₅	3300 ₁₀₀	3600 ₈₅	3300 ₁₀₀	3100 ₁₁₅
378x85	40	5000 ₃₀	4800 ₅₀	4700 ₇₀	4700 ₇₅	4500 ₈₅	4300 ₉₅	4600 ₈₅	4400 ₉₀	4200 ₁₀₀	4100 ₁₀₀	4000 ₁₁₀	3900 ₁₁₅
	90	4900 ₄₀	4500 ₈₅	4100 ₁₀₀	4600 ₈₀	4200 ₁₀₅	3800 ₁₂₀	4500 ₉₀	4100 ₁₁₀	3700 ₁₂₅	4100 ₁₁₀	3800 ₁₂₅	3500 ₁₄₀
420x85	40	5500 ₄₅	5200 ₇₀	5100 ₈₅	5100 ₈₅	4900 ₁₀₀	4800 ₁₁₅	5100 ₁₀₅	4900 ₁₁₀	4700 ₁₂₀	4600 ₁₂₅	4500 ₁₃₀	4300 ₁₄₀
	90	5300 ₆₅	4900 ₉₅	4600 ₁₂₅	5000 ₉₅	4600 ₁₂₀	4200 ₁₄₀	5000 ₁₁₀	4500 ₁₂₅	4100 ₁₄₅	4500 ₁₃₀	4200 ₁₄₅	3900 ₁₆₅
462x85	40	5900 ₆₅	5600 ₈₀	5400 ₉₅	5500 ₁₀₀	5300 ₁₁₅	5200 ₁₃₀	5400 ₁₁₅	5300 ₁₂₅	5100 ₁₄₀	5100 ₁₄₅	4900 ₁₅₀	4700 ₁₆₀
	90	5700 ₇₅	5300 ₁₁₀	5000 ₁₄₅	5400 ₁₁₀	5000 ₁₄₅	4600 ₁₆₅	5300 ₁₂₀	5000 ₁₅₀	4600 ₁₇₀	5000 ₁₅₀	4600 ₁₇₀	4300 ₁₉₀

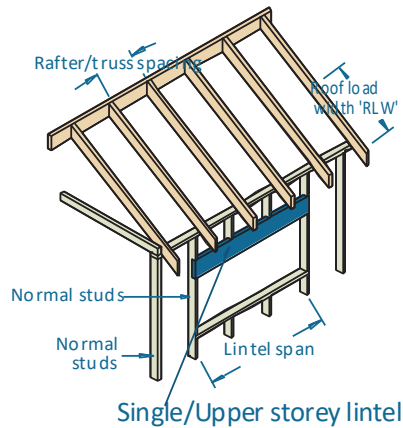
Floor bearers supporting two floors and roof - sheet and tiled roof Continuous span (Cont'd)

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 (GL13S) Dx B (mm)	Roof mass (kg/m ²)	Maximum recommended continuous span bearer span (mm)											
126x115	40	2100	2000	1900	1800	1700	1700	1800	1700	1600	1600	1500	1500
	90	2000	1800	1600	1800	1600	1500	1700	1600	1400	1600	1400	1300
168x115	40	2900	2700	2500	2500	2300	2200	2400	2300	2200	2100	2100	2000
	90	2700	2400	2100	2400	2100	2000	2300	2100	1900	2100	1900	1800
210x115	40	3500	3300	3100	3100	2900	2800	3000	2800	2700	2700	2600	2500
	90	3400	3000	2700	3000	2700	2500	2900	2600	2400	2600	2400	2200 ₁₀
252x115	40	4000	3800	3700	3700	3500	3400 ₅	3500	3400	3300 ₁₀	3200 ₁₀	3100 ₁₀	3000 ₁₅
	90	3900	3600	3200 ₁₀	3600	3200 ₁₀	2900 ₂₀	3500	3200 ₁₀	2900 ₂₀	3100 ₁₅	2900 ₂₀	2700 ₃₀
294x115	40	4500	4300	4200 ₅	4200 ₅	4100 ₁₅	3900 ₂₀	4100 ₁₅	4000 ₂₀	3800 ₂₅	3700 ₂₅	3600 ₃₀	3500 ₃₅
	90	4400	4100 ₁₅	3700 ₂₅	4100 ₁₀	3800 ₂₅	3400 ₄₀	4000 ₂₀	3700 ₃₀	3400 ₄₅	3700 ₃₀	3400 ₄₅	3200 ₆₅
336x115	40	5000	4800 ₅	4600 ₁₅	4600 ₂₀	4500 ₂₅	4400 ₃₅	4600 ₃₀	4500 ₃₅	4300 ₅₀	4300 ₅₅	4200 ₆₅	4000 ₇₀
	90	4800 ₅	4500 ₂₅	4200 ₅₀	4500 ₂₅	4300 ₅₀	3900 ₇₀	4500 ₃₀	4200 ₆₀	3900 ₇₅	4200 ₆₀	3900 ₇₅	3600 ₈₅
378x115	40	5400 ₅	5200 ₁₅	5000 ₂₅	5100 ₃₀	4900 ₄₀	4800 ₆₀	5000 ₄₅	4900 ₅₅	4700 ₇₀	4800 ₇₅	4700 ₈₀	4500 ₉₀
	90	5300 ₁₀	4900 ₃₅	4600 ₇₀	5000 ₃₅	4700 ₇₀	4400 ₉₀	4900 ₅₀	4600 ₈₀	4300 ₉₅	4700 ₈₀	4400 ₉₅	4000 ₁₀₅
420x115	40	5900 ₁₅	5600 ₂₅	5400 ₄₀	5500 ₄₀	5300 ₆₅	5200 ₇₅	5400 ₆₅	5300 ₇₀	5100 ₈₀	5200 ₉₀	5000 ₉₅	4900 ₁₀₅
	90	5700 ₂₀	5300 ₅₅	5000 ₈₅	5400 ₅₅	5100 ₈₅	4800 ₁₁₀	5300 ₇₀	5000 ₉₀	4800 ₁₁₅	5100 ₉₀	4800 ₁₁₅	4500 ₁₃₀
462x115	40	6300 ₂₀	6100 ₃₅	5800 ₆₀	5900 ₆₅	5700 ₇₅	5600 ₉₀	5800 ₈₀	5700 ₈₅	5500 ₉₅	5500 ₁₀₅	5400 ₁₁₀	5300 ₁₂₀
	90	6100 ₃₀	5700 ₇₀	5400 ₉₅	5800 ₇₀	5400 ₁₀₀	5200 ₁₂₀	5700 ₈₀	5400 ₁₀₅	5100 ₁₃₀	5500 ₁₀₅	5200 ₁₃₀	4900 ₁₅₀
126x135	40	2300	2100	2000	2000	1900	1800	1900	1800	1800	1700	1700	1600
	90	2200	1900	1700	1900	1700	1600	1900	1700	1500	1700	1600	1400
168x135	40	3000	2900	2700	2700	2500	2400	2600	2500	2400	2300	2200	2200
	90	2900	2600	2300	2600	2300	2100	2500	2300	2100	2300	2100	1900
210x135	40	3600	3500	3400	3400	3200	3000	3200	3100	3000	2900	2800	2700
	90	3500	3200	2900	3200	2900	2700	3100	2800	2600	2800	2600	2400
252x135	40	4200	4000	3900	3900	3800	3600	3800	3700	3500	3500	3400 ₅	3300 ₁₀
	90	4100	3800	3500	3800	3500	3200 ₁₀	3800	3400 ₅	3100 ₁₀	3400 ₅	3100 ₁₅	2900 ₂₀
294x135	40	4700	4500	4300	4400	4200 ₅	4100 ₁₀	4300 ₅	4200 ₅	4100 ₁₅	4100 ₂₀	3900 ₂₀	3800 ₂₅
	90	4600	4200	4000 ₁₅	4300	4000 ₁₅	3700 ₂₅	4200 ₅	4000 ₂₀	3700 ₃₀	4000 ₂₀	3700 ₃₀	3400 ₄₀
336x135	40	5200	5000	4800 ₅	4800 ₅	4700 ₁₀	4500 ₂₀	4800 ₁₅	4600 ₂₀	4500 ₂₅	4500 ₃₅	4400 ₄₀	4300 ₅₀
	90	5000	4700 ₁₀	4400 ₃₀	4700 ₁₀	4400 ₃₀	4200 ₅₅	4700 ₂₀	4400 ₃₅	4200 ₆₀	4500 ₃₅	4200 ₆₀	3900 ₇₀
378x135	40	5600	5400 ₅	5200 ₁₅	5300 ₁₅	5100 ₂₅	5000 ₃₅	5200 ₂₅	5100 ₃₀	4900 ₄₀	5000 ₅₀	4800 ₆₅	4700 ₇₀
	90	5500	5100 ₂₀	4800 ₄₅	5200 ₂₀	4900 ₄₅	4600 ₇₅	5100 ₃₀	4800 ₅₅	4600 ₈₀	4900 ₅₅	4600 ₈₀	4400 ₉₅
420x135	40	6100	5900 ₁₀	5700 ₂₀	5700 ₂₅	5500 ₃₅	5400 ₅₀	5700 ₃₅	5500 ₄₅	5300 ₆₅	5400 ₇₀	5200 ₇₅	5100 ₈₅
	90	6000 ₁₀	5500 ₃₀	5200 ₆₅	5600 ₃₀	5300 ₆₅	5000 ₈₅	5600 ₄₀	5200 ₇₀	5000 ₉₀	5300 ₇₀	5000 ₉₀	4800 ₁₁₀
462x135	40	6600 ₁₀	6300 ₂₀	6100 ₃₀	6100 ₃₅	5900 ₅₀	5800 ₇₀	6100 ₅₅	5900 ₆₅	5700 ₇₅	5800 ₈₀	5600 ₈₅	5500 ₉₅
	90	6400 ₁₅	5900 ₄₀	5600 ₇₅	6000 ₄₀	5600 ₇₅	5400 ₁₀₀	6000 ₆₅	5600 ₈₅	5300 ₁₀₅	5700 ₈₅	5400 ₁₀₅	5200 ₁₂₅

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 40 kg/m², floor live load of 1.5 kPa, floor point load of 1.8 kN, wall mass of 32 kg/m², & 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 SmartLam GL13S 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, N2, N3 & N4



EXAMPLE:

wind speed = N3
sheet roof - 40 kg/m²
roof load width = 3900 mm
rafter/truss spacing = 600 mm
lintel span = 3500 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

ADOPT:

SmartLam GL13S- 252 x 55

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 (GL13S) Dx B (mm)	Roof mass	Maximum recommended Lintel span (mm)									
	(kg/m ²)	Single span - Wind speed N1, N2, N3 & N4									
126x55	40	2900	2900	2300	2300	2000	2000	1800	1600	1600	1200
	90	2200	2200	1700	1700	1500	1400	1400	1200	1300	NS
168x55	40	3600	3600	3000	3000	2700	2700	2400	2400	2300	2100
	90	2900	2900	2300	2400	2000	2000	1800	1800	1700	1700
210x55	40	4200	4200	3600	3600	3300	3200	3000	3000	2800	2700
	90	3500	3500	2900	2900	2600	2600	2300	2300	2200	2100
252x55	40	4800	4800	4100	4100	3700	3700	3500	3400	3300	3300
	90	4000	4000	3400	3300	3000	3000	2800	2800	2600	2600
294x55	40	5400	5400	4600	4600	4200	4200	3900	3900	3700	3700
	90	4500	4500	3800	3800	3400	3400	3200	3200	3000	3000
336x55	40	6000	5900	5100	5100	4600	4600	4300	4300	4100	4100
	90	5000	4900	4200	4200	3800	3800	3500	3500	3400	3300
378x55	40	6500	6500	5600	5500	5100	5000	4700	4700	4500	4400
	90	5400	5400	4600	4600	4100	4100	3900	3800	3700	3600
126x65	40	3000	3000	2400	2500	2100	2100	1900	1800	1800	1500
	90	2300	2400	1800	1800	1600	1500	1500	1300	1400	1100
168x65	40	3700	3700	3200	3100	2800	2800	2600	2600	2400	2400
	90	3100	3100	2500	2500	2200	2100	2000	1900	1800	1800
210x65	40	4400	4400	3700	3700	3400	3400	3200	3100	3000	3000
	90	3600	3600	3100	3000	2700	2700	2500	2500	2300	2300
252x65	40	5000	5000	4300	4300	3900	3900	3600	3600	3400	3400
	90	4200	4200	3500	3500	3200	3200	3000	3000	2700	2800
294x65	40	5600	5600	4800	4800	4400	4300	4100	4100	3900	3800
	90	4700	4600	4000	3900	3600	3500	3300	3300	3100	3100
336x65	40	6200	6100	5300	5300	4800	4800	4500	4500	4300	4300
	90	5200	5200	4400	4400	4000	3900	3700	3700	3500	3500
126x85	40	3200	3200	2600	2700	2300	2400	2100	2100	1900	1900
	90	2600	2600	2000	2000	1700	1700	1600	1500	1500	1300
168x85	40	4000	3900	3400	3300	3100	3000	2800	2800	2600	2700
	90	3300	3200	2700	2700	2400	2400	2100	2100	2000	2000

Single span lintels in single/upper storey walls AS 4055 Classification N1, N2, N3 & N4 (Cont'd)

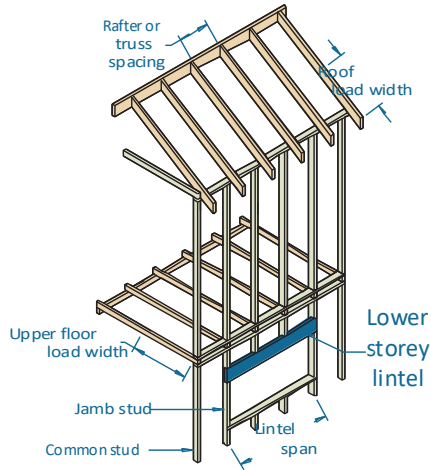
Roof load width (mm)		1500		3000		4500		6000		7500	
Rafter/truss spacing (mm)		600	1200	600	1200	600	1200	600	1200	600	1200
Member size (GL13S) Dx B (mm)	Roof mass	Maximum recommended Lintel span (mm)									
	(kg/m ²)	Single span - Wind speed N1, N2, N3 & N4									
210x85	40	4700	4600	4000	4000	3600	3600	3400	3300	3200	3200
	90	3900	3800	3300	3200	3000	3000	2700	2700	2500	2500
252x85	40	5300	5300	4600	4500	4100	4100	3900	3800	3700	3600
	90	4400	4400	3800	3700	3400	3400	3200	3100	3000	3000
294x85	40	5900	5900	5100	5100	4700	4600	4300	4300	4100	4100
	90	5000	5000	4200	4200	3800	3800	3600	3500	3400	3300
336x85	40	6500	6500	5600	5600	5100	5100	4800	4800	4600	4500
	90	5500	5500	4700	4600	4200	4200	3900	3900	3700	3700

NOTES:

1. D = member depth, B = member breadth, NS = not suitable.
2. Minimum bearing length = 75 mm at end supports. Subscript values indicate the minimum additional bearing length where required to be greater than 75 mm.
3. Restraint value for slenderness calculations is 600 mm.
4. Not all sizes of SmartLam GL13S 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, N2, N3 & N4



EXAMPLE:

wind speed = N3
 sheet roof - 40 kg/m²
 roof load width = 3900 mm
 floor load width = 1200 mm
 rafter/truss spacing = 600 mm
 lintel span = 3500 mm

Enter 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: SmartLam GL13S – 336 x 55

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 (GL13S) Dx B (mm)	Roof mass (kg/m ²)	Maximum recommended single span lintel span (mm)											
126x55	40	1700	1500	1400	1600	1400	1300	1500	1400	1300	1400	1300	1200
	90	1500	1400	1300	1400	1300	1200	1300	1200	1200	1200	1200	1100
168x55	40	2200	2000	1800	2100	1900	1800	2000	1800	1700	1900	1800	1700
	90	2100	1900	1800	1900	1700	1600	1700	1600	1600	1600	1600	1500
210x55	40	2700	2500	2300	2600	2400	2200	2500	2300	2200	2400	2200	2100
	90	2600	2400	2200	2300	2200	2100	2200	2100	2000	2000	2000	1900
252x55	40	3200	2900	2700	3000	2800	2700	2900	2700	2600	2800	2700	2500
	90	3000	2800	2700	2800	2600	2500	2600	2500	2400	2500	2400	2300
294x55	40	3500	3300	3100	3400	3200	3000	3300	3100	2900	3200	3000	2900
	90	3400	3200	3000	3100	3000	2800	3000	2800	2700	2800	2700	2600
336x55	40	3900	3600	3400	3800	3500	3300	3600	3400	3200	3500	3300	3200
	90	3700	3500	3300	3500	3300	3100	3300	3100	3000	3100	3000	2900 ₅
378x55	40	4300	4000	3700	4100	3800	3600	4000	3700	3500	3800	3600	3500
	90	4100	3800	3600	3800	3600	3400	3600	3400	3300	3400	3300	3200 ₁₀
420x55	40	4600	4300	4000	4400	4200	3900	4300	4000	3800	4200	3900	3800
	90	4400	4100	3900	4100	3900	3700	3900	3700	3600 ₁₀	3700	3600 ₁₀	3500 ₁₅
126x65	40	1700	1600	1400	1600	1500	1400	1600	1400	1400	1500	1400	1300
	90	1600	1500	1400	1500	1400	1300	1400	1300	1200	1300	1200	1200
168x65	40	2300	2100	1900	2200	2000	1900	2100	1900	1800	2000	1900	1800
	90	2200	2000	1900	2000	1800	1700	1800	1700	1600	1700	1600	1600
210x65	40	2900	2600	2400	2700	2500	2400	2600	2400	2300	2500	2400	2200
	90	2700	2500	2300	2500	2300	2200	2300	2200	2100	2200	2100	2000
252x65	40	3300	3000	2900	3100	2900	2800	3000	2900	2700	2900	2800	2700
	90	3100	2900	2800	2900	2800	2600	2700	2600	2500	2600	2500	2400
294x65	40	3700	3400	3200	3500	3300	3100	3400	3200	3100	3300	3100	3000
	90	3500	3300	3100	3300	3100	3000	3100	3000	2800	2900	2800	2800
336x65	40	4100	3800	3500	3900	3700	3500	3800	3600	3400	3700	3500	3300
	90	3900	3600	3400	3600	3400	3300	3400	3300	3200	3300	3100	3000
378x65	40	4500	4100	3900	4300	4000	3800	4100	3900	3700	4000	3800	3600
	90	4200	4000	3800	3900	3700	3600	3700	3600	3400	3600	3400	3300
420x65	40	4800	4500	4200	4600	4300	4100	4500	4200	4000	4300	4100	3900
	90	4600	4300	4100	4300	4100	3900	4000	3900	3700	3900	3700	3600 ₅

Single span lintels in lower storey walls

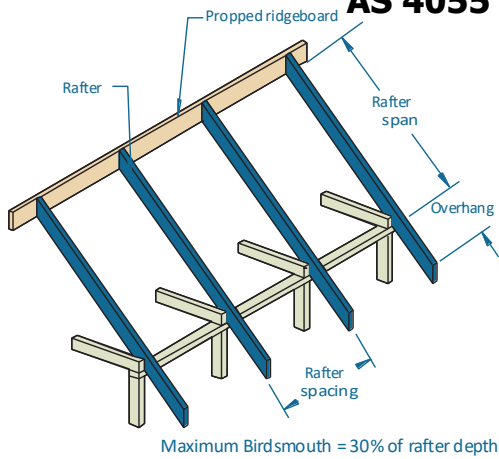
AS 4055 classification N1, N2, N3 & N4 (Cont'd)

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 (GL13S) DxB (mm)	Roof mass (kg/m ²)	Maximum recommended single span lintel span (mm)											
126x85	40	1900	1700	1600	1800	1600	1500	1700	1600	1500	1600	1500	1400
	90	1800	1600	1500	1600	1500	1400	1500	1400	1300	1400	1300	1300
168x85	40	2600	2300	2100	2400	2200	2100	2300	2100	2000	2200	2100	1900
	90	2400	2200	2000	2200	2000	1900	2000	1900	1800	1900	1800	1700
210x85	40	3100	2800	2700	2900	2700	2600	2800	2700	2500	2700	2600	2400
	90	2900	2700	2600	2700	2500	2400	2500	2400	2300	2400	2300	2200
252x85	40	3500	3200	3100	3400	3100	3000	3200	3100	2900	3100	3000	2800
	90	3300	3100	3000	3100	2900	2800	2900	2800	2700	2800	2700	2600
294x85	40	3900	3600	3400	3800	3500	3300	3600	3400	3300	3500	3400	3200
	90	3700	3500	3300	3500	3300	3200	3300	3200	3000	3100	3000	2900
336x85	40	4400	4000	3800	4200	3900	3700	4000	3800	3600	3900	3700	3500
	90	4100	3900	3700	3900	3700	3500	3600	3500	3400	3500	3400	3300
378x85	40	4800	4400	4100	4600	4300	4000	4400	4200	4000	4300	4100	3900
	90	4500	4200	4000	4200	4000	3800	4000	3800	3700	3800	3700	3600
420x85	40	5100	4800	4500	4900	4600	4400	4800	4500	4300	4600	4400	4200
	90	4900	4600	4400	4600	4300	4200	4300	4100	4000	4100	4000	3900

NOTES:

1. D = member depth, B = member breadth, NS = not suitable.
2. Total upper floor mass of 40 kg/m², floor live load of 1.5 kPa, floor point load of 1.8 kN.
3. Minimum bearing length = 35 mm at end supports. Subscript values indicate the minimum additional bearing length where required to be greater than 35 mm.
4. Restraint value for slenderness calculations is 600 mm.
5. Not all sizes of SmartLam GL13S 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, N2, N3 & N4



EXAMPLE:

wind speed = N3
sheet roof - 40 kg/m²
rafter spacing = 600
rafter span (Ssingle span) = 5800 mm

Enter span table at rafter spacing of 600 mm, and read down to a span equal to or greater than 5800 mm for a 40 kg/m² roof

ADOPT:

SmartLam GL13S –210 x 55

Rafter spacing (mm)		450	600	900	1200	450	600	900	1200
Member size (GL13S) Dx B (mm)	Roof mass (kg/m ²)	Maximum recommended rafter span (mm)							
		Single Span				Continuous Span			
126x55	30	4200	4100	3600	3300	5300	5300	5000	4500
	40	4100	3800	3300	3000	5300	5100	4500	4200
	75	3400	3100	2700	2500	4600	4200	3700	3400
	90	3200	2900	2600	2300	4400	4000	3500	3200
168x55	30	5800	5400	4800	4400	7300	6900	6400	6000
	40	5400	5000	4400	4100	6900	6500	6000	5500
	75	4500	4100	3600	3300	6100	5600	5000	4500
	90	4300	3900	3400	3100	5800	5300	4700	4300
210x55	30	6800	6400	5900	5500	8500	8100	7500	7000
	40	6400	6100	5500	5000	8100	7700	7100	6600
	75	5600	5100	4600	4200	7100	6700	6100	5700
	90	5300	4900	4300	3900	6900	6400	5800	5300
252x55	30	7600	7300	6800	6400	9600	9200	8500	8000
	40	7300	6900	6400	6000	9200	8700	8000	7500
	75	6500	6100	5400	5000	8200	7600	7000	6600
	90	6200	5800	5200	4700	7800	7400	6700	6300
294x55	30	8500	8100	7500	7100	10700	10200	9500	8900
	40	8100	7700	7100	6700	10200	9700	9000	8400
	75	7200	6800	6200	5800	9100	8500	7800	7300
	90	6900	6500	6000	5500	8800	8200	7500	7000 ₅
336x55	30	9200	8800	8200	7800	11600	11100	10400	9800
	40	8900	8400	7800	7400	11100	10600	9800	9300
	75	7900	7500	6900	6400	10000	9400	8600	8100 ₅
	90	7600	7200	6600	6200	9600	9000	8300	7800 ₁₀
378x55	30	10000	9600	8900	8500	12000	12000	11200	10700 ₅
	40	9600	9100	8500	8000	12000	11500	10700	10100 ₅
	75	8600	8100	7500	7000	10800	10200	9400	8800 ₁₀
	90	8300	7800	7200	6700	10400	9800	9000 ₅	8500 ₁₅
420x55	30	10600	10200	9600	9100	12000	12000	12000	11500 ₁₀
	40	10300	9800	9100	8600	12000	12000	11500	10800 ₁₀
	75	9300	8700	8100	7600	11600	11000	10100 ₅	9500 ₁₅
	90	8900	8400	7800	7300	11200	10600	9800 ₁₀	9100 ₂₀
126x65	30	4500	4300	3800	3500	5800	5800	5200	4800
	40	4300	4000	3500	3200	5800	5400	4800	4400
	75	3600	3300	2900	2600	4900	4500	3900	3600
	90	3400	3100	2700	2500	4600	4200	3700	3400
168x65	30	6000	5600	5000	4600	7600	7200	6600	6200
	40	5600	5200	4600	4300	7200	6800	6200	5800
	75	4700	4400	3800	3500	6300	5900	5200	4800
	90	4500	4100	3600	3300	6100	5600	5000	4500
210x65	30	7000	6600	6100	5800	8800	8300	7700	7300
	40	6600	6300	5800	5300	8400	7900	7300	6900
	75	5900	5400	4800	4400	7400	7000	6400	6000
	90	5600	5100	4500	4100	7100	6700	6100	5600
252x65	30	7800	7500	7000	6600	9900	9400	8800	8300
	40	7500	7100	6600	6200	9500	9000	8300	7800
	75	6700	6300	5700	5300	8400	7900	7300	6800
	90	6400	6100	5400	5000	8100	7600	7000	6500

Single/continuous span roof rafter with ceiling attached - AS 4055 classification N1, N2, N3 & N4 (Cont'd)

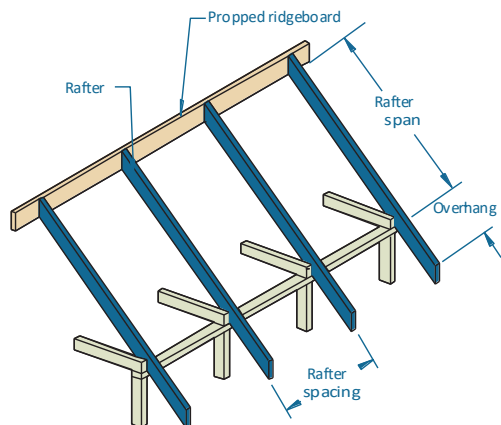
Rafter spacing (mm)		450	600	900	1200	450	600	900	1200
Member size (GL13S) DxB (mm)	Roof mass (kg/m ²)	Maximum recommended rafter span (mm)							
		Single Span				Continuous Span			
294x65	30	8700	8300	7800	7400	10900	10500	9800	9200
	40	8300	7900	7400	6900	10500	10000	9300	8700
	75	7500	7000	6500	6100	9400	8800	8100	7600
	90	7200	6800	6200	5800	9100	8500	7800	7300
336x65	30	9400	9100	8500	8100	11900	11400	10700	10100
	40	9100	8700	8100	7600	11400	10900	10100	9600
	75	8200	7700	7100	6700	10300	9700	9000	8400
	90	7900	7400	6900	6400	10000	9400	8600	8100 ₅
378x65	30	10200	9800	9200	8700	12000	12000	11600	11000
	40	9800	9400	8700	8300	12000	11800	11000	10400
	75	8900	8400	7800	7300	11200	10500	9700	9100 ₅
	90	8600	8100	7500	7000	10800	10200	9400	8800 ₁₀
420x65	30	10900	10500	9900	9400	12000	12000	12000	11900
	40	10500	10100	9400	8900	12000	12000	11900	11200
	75	9500	9000	8400	7800	12000	11300	10500	9900 ₅
	90	9200	8700	8000	7500	11600	11000	10100 ₅	9500 ₁₅
126x85	30	4900	4600	4100	3800	6500	6200	5600	5200
	40	4600	4300	3800	3500	6200	5800	5200	4800
	75	3900	3600	3100	2900	5300	4900	4300	3900
	90	3700	3400	3000	2700	5000	4600	4100	3700
168x85	30	6300	6000	5400	5000	7900	7500	7000	6600
	40	6000	5600	5000	4600	7500	7100	6600	6200
	75	5100	4700	4200	3800	6700	6300	5700	5200
	90	4900	4500	4000	3600	6400	6100	5400	4900
210x85	30	7300	6900	6500	6100	9200	8700	8100	7700
	40	7000	6600	6100	5700	8800	8300	7700	7300
	75	6200	5800	5200	4800	7800	7400	6800	6300
	90	6000	5500	4900	4500	7500	7100	6500	6100
252x85	30	8200	7800	7300	7000	10300	9900	9200	8800
	40	7900	7500	7000	6600	9900	9400	8700	8300
	75	7100	6700	6100	5700	8900	8400	7700	7200
	90	6800	6400	5900	5400	8600	8100	7400	7000
294x85	30	9000	8700	8100	7700	11300	10900	10200	9700
	40	8700	8300	7700	7300	10900	10400	9700	9200
	75	7800	7400	6900	6400	9900	9300	8600	8100
	90	7600	7200	6600	6200	9600	9000	8300	7800
336x85	30	9800	9400	8900	8500	12000	11900	11200	10700
	40	9500	9100	8500	8000	11900	11400	10600	10100
	75	8600	8100	7500	7100	10800	10200	9500	8900
	90	8300	7900	7300	6800	10500	9900	9100	8600
378x85	30	10500	10200	9600	9200	12000	12000	12000	11500
	40	10200	9800	9200	8700	12000	12000	11500	11000
	75	9300	8800	8200	7700	11700	11100	10300	9700
	90	9000	8500	7900	7400	11300	10700	9900	9300
420x85	30	11200	10900	10300	9800	12000	12000	12000	12000
	40	10900	10500	9800	9400	12000	12000	12000	11800
	75	10000	9500	8800	8300	12000	11900	11100	10400
	90	9600	9200	8500	8000	12000	11500	10700	10100 ₅

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 35 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 35 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 SmartLam GL13S 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, N2, N3 & N4



EXAMPLE:

wind speed = C3
 sheet roof - 40 kg/m²
 rafter/truss spacing = 600 mm
 rafter span (single span) = 5800 mm

Enter span table at rafter spacing of 600 mm, and read down to a span equal to or greater than 5800 mm for a 40 kg/m² roof

ADOPT:

SmartLam GL13S - 210 x 55

Rafter spacing (mm)		450	600	900	1200	450	600	900	1200
Member size (GL13S) DxB (mm)	Roof mass (kg/m ²)	Maximum recommended rafter span (mm)							
		Single Span				Continuous Span			
126x55	10	4300	4200	4100	3800	5400	5400	5100	4300
	20	4300	4200	4100	3800	5400	5400	5200	4400
	40	4100	3800	3400	3100	5400	5200	4600	4200
	60	3700	3400	3000	2700	5000	4600	4100	3700
168x55	10	6400	6300	5600	5100	8400	8400	6900	5900
	20	6300	6000	5400	5000	7900	7500	7000	6000
	40	5400	5000	4500	4100	7000	6600	6100	5600
	60	4900	4500	4000	3600	6400	6100	5400	4900
210x55	10	7900	7700	7000	6400	10000	9600	8700	7400
	20	7300	6900	6500	6100	9100	8700	8100	7600
	40	6500	6100	5500	5100	8200	7700	7100	6700
	60	6000	5500	4900	4500	7500	7100	6500	6100
252x55	10	8800	8600	8200	7600	11100	10800	10300	9000
	20	8200	7800	7300	7000	10300	9900	9200	8700
	40	7300	7000	6400	6000	9200	8700	8100	7600
	60	6800	6400	5900	5400	8600	8100	7400	6900
294x55	10	9700	9400	9000	8700	12000	11900	11300	10600
	20	9000	8700	8100	7700	11300	10900	10200	9700
	40	8200	7700	7200	6700	10300	9700	9000	8500
	60	7600	7200	6600	6200	9500	9000	8300	7800
336x55	10	10400	10200	9800	9400	12000	12000	12000	11900
	20	9800	9400	8900	8500	12000	11900	11200	10600
	40	8900	8500	7900	7400	11200	10600	9900	9300
	60	8300	7900	7300	6800	10500	9900	9100	8600
378x55	10	11200	11000	10500	10200	12000	12000	12000	12000
	20	10500	10200	9600	9200	12000	12000	12000	11500 ₅
	40	9600	9200	8500	8100	12000	11500	10700	10100 ₅
	60	9000	8500	7900	7400	11300	10700	9900	9300 ₅
420x55	10	11900	11700	11200	10800	12000	12000	12000	12000
	20	11200	10800	10300	9800	12000	12000	12000	12000 ₅
	40	10300	9800	9200	8700	12000	12000	11500	10900 ₁₀
	60	9700	9200	8500	8000	12000	11500	10700	10000 ₁₀
126x65	10	4600	4600	4400	4000	5900	5900	5600	4700
	20	4700	4600	4300	4000	5900	5900	5700	4800
	40	4300	4000	3600	3300	5900	5400	4800	4400
	60	3900	3600	3100	2900	5300	4800	4300	3900
168x65	10	6900	6800	5900	5400	8800	8600	7600	6400
	20	6400	6200	5700	5300	8100	7700	7200	6600
	40	5700	5300	4700	4300	7200	6800	6300	5900
	60	5100	4700	4200	3800	6700	6300	5700	5200
210x65	10	8000	7800	7400	6700	10100	9800	9400	8100
	20	7500	7100	6700	6300	9300	9000	8400	8000
	40	6700	6300	5800	5400	8400	8000	7400	6900
	60	6200	5800	5200	4700	7800	7300	6800	6300
252x65	10	9000	8700	8300	8000	11300	11000	10500	9800
	20	8400	8000	7500	7200	10500	10100	9500	9000
	40	7600	7200	6700	6300	9500	9000	8400	7900
	60	7000	6600	6100	5700	8900	8300	7700	7200

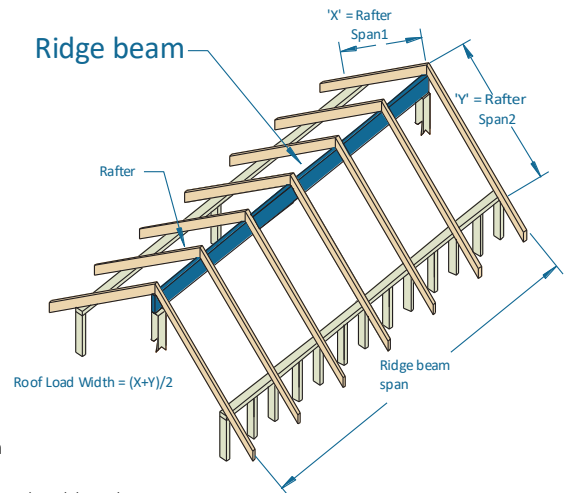
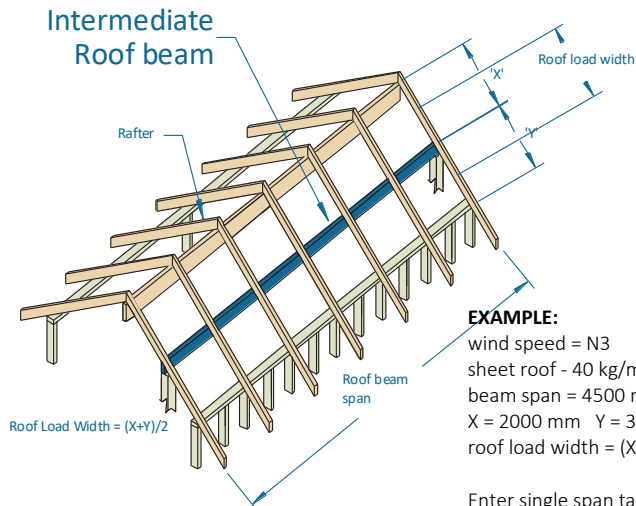
Single/continuous span roof rafter without ceiling attached AS 4055 classification N1, N2, N3 & N4 (Cont'd)

Rafter spacing (mm)		450	600	900	1200	450	600	900	1200
Member size (GL13S) Dx B (mm)	Roof mass (kg/m ²)	Maximum recommended rafter span (mm)							
		Single Span				Continuous Span			
294x65	10	9800	9600	9200	8900	12000	12000	11500	11100
	20	9200	8900	8300	8000	11500	11100	10500	10000
	40	8400	8000	7400	7000	10500	10000	9300	8800
	60	7800	7400	6800	6400	9800	9300	8600	8100
336x65	10	10600	10400	10000	9600	12000	12000	12000	12000
	20	10000	9600	9100	8700	12000	12000	11500	11000
	40	9100	8700	8100	7700	11500	11000	10200	9600
	60	8600	8100	7500	7100	10800	10200	9400	8900
378x65	10	11300	11100	10700	10400	12000	12000	12000	12000
	20	10700	10400	9800	9400	12000	12000	12000	11900
	40	9900	9400	8800	8300	12000	11900	11000	10500
	60	9300	8800	8200	7700	11600	11000	10200	9600
420x65	10	12000	11800	11400	11100	12000	12000	12000	12000
	20	11400	11100	10500	10100	12000	12000	12000	12000
	40	10500	10100	9400	9000	12000	12000	11900	11300
	60	9900	9400	8700	8300	12000	11900	11000	10400 ₅
126x85	10	5300	5200	4900	4400	6800	6800	6500	5500
	20	5300	5100	4600	4300	6800	6700	6200	5600
	40	4600	4300	3800	3500	6200	5900	5200	4800
	60	4200	3800	3400	3100	5700	5200	4600	4300
168x85	10	7200	7000	6500	5900	9100	8800	8400	7400
	20	6700	6400	6000	5600	8400	8100	7600	7200
	40	6000	5600	5100	4700	7600	7200	6600	6200
	60	5500	5100	4500	4100	7000	6600	6100	5600
210x85	10	8200	8100	7700	7400	10400	10100	9700	9300
	20	7700	7400	7000	6700	9700	9300	8800	8400
	40	7000	6700	6200	5800	8800	8400	7800	7300
	60	6500	6200	5600	5100	8200	7800	7200	6700
252x85	10	9200	8900	8600	8300	11500	11300	10800	10500
	20	8600	8300	7900	7500	10800	10500	9900	9500
	40	7900	7500	7000	6600	9900	9500	8800	8300
	60	7400	7000	6500	6100	9300	8800	8100	7600
294x85	10	10000	9800	9400	9200	12000	12000	11900	11500
	20	9500	9200	8700	8300	11900	11500	10900	10500
	40	8700	8300	7800	7400	11000	10500	9800	9300
	60	8200	7800	7200	6800	10300	9800	9100	8500
336x85	10	10700	10600	10200	9900	12000	12000	12000	12000
	20	10200	9900	9500	9100	12000	12000	11900	11400
	40	9500	9100	8500	8100	11900	11400	10700	10200
	60	8900	8500	7900	7500	11200	10700	9900	9400
378x85	10	11500	11300	11000	10700	12000	12000	12000	12000
	20	11000	10700	10200	9800	12000	12000	12000	12000
	40	10200	9800	9200	8800	12000	12000	11600	11000
	60	9700	9200	8600	8100	12000	11600	10800	10200
420x85	10	12000	12000	11600	11400	12000	12000	12000	12000
	20	11600	11400	10900	10500	12000	12000	12000	12000
	40	10900	10500	9900	9400	12000	12000	12000	11900
	60	10300	9900	9200	8700	12000	12000	11600	11000
395x85	10	11800	11600	11200	11000	12000	12000	12000	12000
	20	11200	11000	10500	10100	12000	12000	12000	12000
	40	10500	10100	9500	9000	12000	12000	11900	11300
	60	9900	9500	8800	8400	12000	11900	11100	10500
425x85	10	12000	12000	11800	11400	12000	12000	12000	12000
	20	11800	11400	11000	10600	12000	12000	12000	12000
	40	11000	10600	9900	9500	12000	12000	12000	11900
	60	10400	10000	9300	8800	12000	12000	11700	11100

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 35 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 35 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 SmartLam GL13S in this table are stocked in each state. Please check with your supplier before ordering

Ridge/Intermediate roof beam AS 4055 Classification N1, N2, N3 & N4



Enter single span table at 3000 roof load width column
and read down to span equal to or greater than 4500 mm

ADOPT: SmartLam GL13S - 294 x 55

Roof load width (mm)		1800	3000	4200	5400	6600	7800	1800	3000	4200	5400	6600	7800
Member size (GL13S) Dx B (mm)	Roof mass (kg/m ²)	Maximum recommended Ridge/Intermediate beam span (mm)											
		Single span						Continuous span					
126x55	40	2600	2200	1900	1700	1600	1500	3600	2800	2300	2000	1800	1600
	90	2100	1700	1500	1400	1300	1200	2800	2300	1900	1700	1500	1300
168x55	40	3500	2900	2600	2300	2200	2000	4800	3700	3100	2700	2400	2200
	90	2700	2300	2000	1900	1700	1600	3700	3100	2500	2200	2000	1800 ₅
210x55	40	4400	3700	3200	2900	2700	2500	6000	4600	3900	3400	3000	2800 ₁₀
	90	3400	2900	2600	2300	2200	2000	4700	3800	3200	2800 ₁₀	2500 ₂₀	2300 ₃₀
252x55	40	5200	4400	3900	3500	3200	3000	6800	5500	4600	4100 ₁₀	3600 ₁₅	3300 ₂₅
	90	4100	3500	3100	2800	2600	2400	5600	4600	3800 ₁₀	3300 ₂₅	3000 ₃₅	2700 ₅₀
294x55	40	6100	5100	4500	4100	3800	3500	7600	6500	5400 ₁₀	4700 ₂₀	4200 ₃₀	3900 ₄₅
	90	4800	4000	3600	3300	3000	2900	6400	5300 ₁₀	4500 ₃₀	3900 ₄₀	3500 ⁵⁵	3200 ₈₅
336x55	40	6700	5800	5200	4700	4300	4000	8400	7400 ₅	6200 ₂₀	5400 ₃₅	4800 ₅₀	4400 ₆₀
	90	5500	4600	4100	3800	3500	3300	7000	6100 ₂₅	5100 ₄₀	4400 ₆₀	4000 ₉₀	3600 ₁₀₅
378x55	40	7300	6400	5800	5300	4900	4600	9200	8100 ₁₅	6900 ₃₅	6100 ₅₀	5500 ₇₀	5000 ₉₀
	90	6100	5200	4600	4200	3900	3700 ₅	7700	6800 ₃₅	5700 ₆₀	5000 ₉₀	4500 ₁₁₀	4100 ₁₂₅
420x55	40	7800	6900	6300	5900	5400	5100	9900	8700 ₂₀	7700 ₄₅	6700 ₇₀	6100 ₉₅	5500 ₉₀
	90	6600	5800	5100	4700	4400	4100 ₁₀	8300 ₅	7300 ₄₅	6300 ₈₅	5500 ₁₁₀	5000 ₁₃₀	4500 ₁₄₅
126x65	40	2800	2300	2000	1800	1700	1600	3800	3000	2500	2200	2000	1800
	90	2200	1800	1600	1500	1400	1300	3000	2500	2100	1800	1600	1500
168x65	40	3700	3100	2700	2500	2300	2100	5100	4000	3400	2900	2600	2400
	90	2900	2400	2200	2000	1800	1700	4000	3300	2800	2400	2200	2000
210x65	40	4600	3900	3400	3100	2900	2700	6200	5000	4200	3700	3300	3000
	90	3600	3000	2700	2500	2300	2100	4900	4100	3500	3000	2700 ₁₀	2500 ₂₀
252x65	40	5500	4600	4100	3700	3400	3200	7100	6000	5000	4400	4000 ₁₀	3600 ₁₅
	90	4400	3700	3300	3000	2800	2600	5900	5000	4200 ₅	3600 ₁₅	3200 ₃₀	3000 ₄₀
294x65	40	6300	5400	4800	4300	4000	3700	7900	7000	5900 ₅	5100 ₁₅	4600 ₂₅	4200 ₃₅
	90	5100	4300	3800	3500	3200	3000	6600	5800 ₅	4800 ₂₀	4200 ₃₀	3800 ₄₅	3400 ₆₀
336x65	40	6900	6100	5500	5000	4600	4300	8700	7700	6700 ₁₅	5900 ₂₅	5300 ₄₀	4800 ₅₀
	90	5800	4900	4300	4000	3700	3500	7300	6500 ₁₅	5500 ₃₅	4800 ₅₀	4300 ₇₀	3900 ₉₀
378x65	40	7500	6700	6100	5600	5100	4800	9500	8400 ₅	7500 ₂₅	6600 ₄₀	5900 ₅₅	5400 ₇₀
	90	6400	5500	4900	4500	4100	3900	8000	7100 ₂₅	6200 ₄₅	5400 ₇₀	4900 ₉₅	4400 ₁₁₀

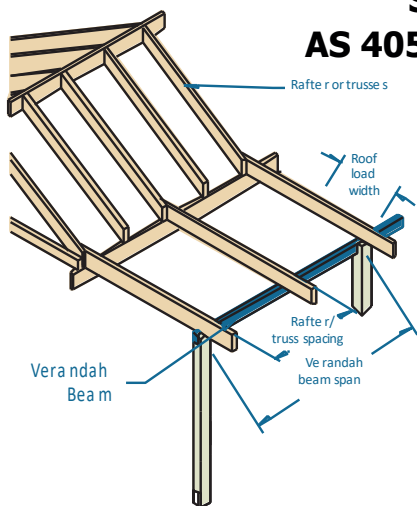
Ridge/Intermediate roof beam AS 4055 Classification N1, N2, N3 & N4 (cont'd)

Roof load width (mm)		1800	3000	4200	5400	6600	7800	1800	3000	4200	5400	6600	7800
Member size (GL13S) Dx B (mm)	Roof mass (kg/m ²)	Maximum recommended Ridge/Intermediate beam span (mm)											
		Single span						Continuous span					
420x85	40	8600	7600	7000	6500	6200	5800	10800	9600	8800 ₁₅	8200 ₃₅	7500 ₅₀	6900 ₆₅
	90	7300	6500	5900	5400	5000	4700	9200	8100 ₁₀	7500 ₄₀	6800 ₆₅	6100 ₉₀	5600 ₁₀₅
462x85	40	9200	8200	7500	7000	6600	6300	11500	10300	9400 ₂₀	8800 ₄₅	8200 ₆₅	7500 ₉₀
	90	7800	6900	6400	5900	5500	5200	9900	8700 ₂₀	8000 ₄₅	7500 ₉₀	6700 ₁₀₅	6200 ₁₂₅
126x115	40	3300	2800	2500	2200	2100	1900	4500	3800	3300	2900	2600	2400
	90	2600	2200	1900	1800	1600	1500	3600	3000	2700	2400	2100	1900
168x115	40	4400	3700	3300	3000	2800	2600	6000	5100	4400	3900	3500	3200
	90	3500	2900	2600	2400	2200	2100	4800	4000	3600	3200	2900	2600
210x115	40	5500	4600	4100	3700	3400	3200	7000	6200	5500	4900	4400	4000
	90	4400	3700	3300	3000	2800	2600	5900	5000	4500	4000	3600	3300
252x115	40	6400	5500	4900	4500	4100	3900	8000	7100	6500	5800	5200	4800
	90	5200	4400	3900	3600	3300	3100	6800	6000	5300	4800	4300 ₅	3900 ₁₀
294x115	40	7100	6300	5700	5200	4800	4500	8900	7900	7300	6800	6100	5600 ₅
	90	6000	5100	4600	4200	3900	3700	7600	6700	6200	5600 ₅	5000 ₁₅	4600 ₂₅
336x115	40	7800	6900	6400	5900	5500	5100	9800	8700	8000	7500	7000 ₁₀	6400 ₂₀
	90	6600	5800	5200	4800	4400	4200	8400	7400	6800	6400 ₂₀	5700 ₃₀	5200 ₄₀
378x115	40	8500	7600	6900	6500	6100	5800	10700	9500	8700	8100 ₅	7700 ₂₀	7200 ₃₀
	90	7200	6400	5900	5400	5000	4700	9100	8100	7400 ₁₀	6900 ₃₀	6400 ₄₀	5800 ₅₅
420x115	40	9100	8200	7500	7000	6600	6300	11400	10200	9400	8800 ₁₀	8300 ₃₀	7900 ₄₀
	90	7800	6900	6400	6000	5500	5200	9800	8700	8000 ₁₅	7500 ₃₅	7100 ₅₅	6500 ₈₀
462x115	40	9700	8700	8000	7500	7100	6700	12000	11000	10100 ₅	9400 ₂₀	8900 ₃₅	8500 ₅₀
	90	8400	7400	6800	6400	6100	5700	10500	9300	8600 ₂₅	8000 ₄₅	7600 ₇₅	7100 ₉₅
210x135	40	5700	4900	4300	3900	3600	3400	7300	6400	5900	5300	4700	4300
	90	4600	3900	3400	3100	2900	2700	6200	5300	4700	4300	3900	3500
252x135	40	6600	5800	5200	4700	4400	4100	8300	7400	6700	6300	5700	5200
	90	5500	4600	4100	3800	3500	3300	7000	6200	5600	5100	4600	4200 ₅
294x135	40	7300	6500	6000	5500	5100	4700	9200	8200	7500	7000	6600	6000
	90	6300	5400	4800	4400	4100	3800	7900	7000	6400	6000	5400 ₁₀	4900 ₁₅
336x135	40	8100	7200	6600	6200	5800	5400	10100	9000	8300	7700	7300	6900 ₁₀
	90	6900	6100	5500	5000	4700	4400	8700	7700	7100	6600 ₁₀	6200 ₂₀	5600 ₃₀
378x135	40	8700	7800	7200	6700	6300	6000	11000	9800	9100	8400	8000 ₁₀	7600 ₂₀
	90	7500	6700	6100	5700	5300	5000	9400	8400	7700	7200 ₁₅	6800 ₃₅	6300 ₄₅
420x135	40	9400	8400	7800	7200	6900	6500	11800	10600	9800	9100 ₅	8600 ₁₅	8200 ₃₀
	90	8100	7200	6600	6200	5800	5500	10200	9000	8300 ₅	7800 ₂₅	7400 ₄₀	7000 ₅₅
462x135	40	10000	9000	8300	7800	7300	7000	12000	11300	10500	9800 ₁₀	9200 ₂₅	8800 ₃₅
	90	8700	7700	7100	6600	6300	6000	10900	9700	8900 ₁₅	8300 ₃₅	7900 ₅₀	7600 ₈₅

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. rafter spacing up to 1200 mm
4. Not all sizes of SmartLam GL13S in this table are stocked in each state. Please check with your supplier before ordering

Single span Verandah beam AS 4055 Classification N1, N2, N3 & N4



EXAMPLE:

wind speed = N3
sheet roof - 40 kg/m²
roof load width = 3900 mm
rafter/truss spacing = 600 mm
verandah span = 3500 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

ADOPT:

SmartLam GL13S - 252 x 55

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 (GL13S) Dx B (mm)	Roof mass (kg/m ²)	Maximum recommended verandah span (mm)									
		Single span									
126x55	40	2600	2600	2100	2000	1700	1400	1500	1000	1300	NS
	90	2000	2000	1600	1500	1400	1200	1200	NS	1100	NS
168x55	40	3500	3400	2800	2800	2400	2200	2000	1800	1800	1400
	90	2700	2700	2100	2100	1800	1800	1700	1600	1500	1300
210x55	40	4200	4200	3500	3400	3000	2900	2600	2500	2300	2200
	90	3300	3300	2700	2700	2300	2300	2100	2100	1900	1900
252x55	40	4800	4800	4100	4100	3600	3400	3100	3000	2700	2700
	90	4000	4000	3200	3200	2800	2800	2500	2500	2300	2300
294x55	40	5400	5400	4600	4600	4200	4100	3600	3500	3200	3100
	90	4500	4500	3700	3700	3300	3200	3000	3000	2700	2800 ₅
336x55	40	5900	5900	5100	5100	4600	4600	4100	4000	3700	3500
	90	4900	4900	4200	4200	3700	3700	3400	3300	3100	3100 ₁₀
378x55	40	6500	6400	5500	5500	5000	5000	4700	4700	4200 ₁₀	4100
	90	5400	5400	4600	4500	4100	4100	3800	3800	3600 ₁₅	3500 ₅
126x65	40	2700	2800	2200	2200	1900	1600	1600	1200	1400	NS
	90	2100	2100	1600	1600	1500	1300	1300	1000	1200	NS
168x65	40	3600	3600	2900	2900	2600	2500	2200	2100	1900	1700
	90	2800	2800	2200	2200	1900	1900	1800	1700	1600	1500
210x65	40	4400	4400	3700	3600	3200	3100	2800	2700	2500	2400
	90	3500	3500	2800	2800	2400	2500	2200	2200	2100	2000
252x65	40	5000	5000	4300	4300	3900	3800	3400	3200	3000	2900
	90	4100	4100	3400	3300	2900	2900	2700	2700	2500	2500
294x65	40	5600	5600	4800	4800	4300	4300	3900	3800	3500	3400
	90	4700	4600	3900	3900	3500	3400	3100	3100	2900	2900
336x65	40	6200	6100	5300	5300	4800	4800	4500	4500	4000	3900
	90	5100	5100	4400	4300	3900	3900	3600	3500	3300	3300
378x65	40	6700	6700	5800	5700	5200	5200	4900	4900	4600	4500
	90	5600	5600	4800	4700	4300	4300	4000	4000	3800 ₅	3700
420x65	40	7200	7200	6200	6200	5700	5600	5300	5300	5000 ₅	5000 ₁₅
	90	6100	6000	5100	5100	4700	4600	4300	4300 ₅	4100 ₅	4100

Single span Verandah beam AS 4055 Classification N1, N2, N3 & 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 (GL13S) DxB (mm)	Roof mass (kg/m ²)	Maximum recommended verandah span (mm)									
		Single span									
126x85	40	3000	3000	2400	2500	2100	2100	1800	1600	1600	1300
	90	2300	2300	1800	1800	1600	1500	1400	1300	1400	1100
168x85	40	4000	3900	3200	3200	2800	2800	2600	2500	2300	2200
	90	3100	3000	2400	2500	2100	2100	1900	1900	1800	1800
210x85	40	4600	4600	4000	4000	3500	3500	3200	3100	2800	2800
	90	3800	3800	3100	3000	2700	2700	2400	2400	2300	2200
252x85	40	5300	5300	4600	4500	4100	4100	3800	3700	3500	3300
	90	4400	4400	3700	3600	3200	3200	2900	2900	2700	2800
294x85	40	5900	5900	5100	5100	4600	4600	4300	4300	4000	3900
	90	5000	5000	4200	4200	3800	3700	3400	3400	3200	3100
336x85	40	6500	6500	5600	5600	5100	5100	4800	4800	4500	4500
	90	5500	5500	4700	4600	4200	4200	3900	3900	3600	3600
378x85	40	7100	7000	6100	6100	5600	5600	5200	5200	5000	4900
	90	6000	5900	5100	5100	4600	4600	4300	4300	4100	4100
420x85	40	7600	7600	6600	6600	6000	6000	5600	5600	5400	5300
	90	6400	6400	5500	5500	5000	5000	4700	4600	4400	4400
126x115	40	3300	3200	2600	2700	2300	2300	2100	2100	1900	1700
	90	2500	2600	2000	2000	1700	1700	1600	1500	1500	1300
168x115	40	4200	4200	3500	3500	3100	3100	2800	2800	2600	2600
	90	3400	3300	2700	2700	2400	2400	2100	2100	2000	2000
210x115	40	5000	5000	4300	4300	3900	3800	3500	3500	3300	3200
	90	4100	4100	3400	3300	3000	3000	2700	2700	2500	2500
252x115	40	5600	5600	4900	4900	4400	4400	4100	4100	3900	3900
	90	4700	4700	4000	4000	3600	3500	3200	3200	3000	3000
294x115	40	6300	6300	5400	5400	5000	5000	4700	4600	4400	4400
	90	5300	5300	4500	4500	4100	4100	3800	3700	3500	3500
336x115	40	6900	6900	6000	6000	5500	5500	5100	5100	4900	4900
	90	5900	5800	5000	5000	4500	4500	4200	4200	4000	4000
378x115	40	7500	7400	6500	6500	6000	6000	5600	5600	5300	5300
	90	6400	6300	5400	5400	5000	4900	4600	4600	4400	4400
420x115	40	8000	8000	7000	7000	6400	6400	6000	6000	5800	5700
	90	6900	6800	5900	5900	5400	5400	5000	5000	4800	4700
360x115	40	7200	7200	6300	6300	5800	5700	5400	5400	5100	5100
	90	6100	6100	5300	5300	4800	4800	4500	4400	4200	4200

Continuous span Verandah beam AS 4055 Classification N1, N2, N3 & 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 (GL13S) Dx B (mm)	Roof mass (kg/m ²)	Maximum recommended verandah span (mm)									
		Continuous span									
126x55	40	3100	3100	2200	2100	1700	1700	1500	1300	1400	1000
	90	2700	2700	2100	2000	1600	1600	1400	1200	1300	NS
168x55	40	4200	4200	2900	2900	2400	2400	2100	2000	1800	1700
	90	3600	3600	2800	2800	2200	2100	1900	1900	1700 ₁₀	1600 ₅
210x55	40	5200	5300	3700	3600	3000	3000	2600 ₅	2700 ₁₀	2300 ₁₅	2200 ₁₅
	90	4400	4300	3500	3400	2800 ₅	2800 ₁₀	2400 ₂₀	2400 ₂₀	2200 ₃₀	2100 ₂₅
252x55	40	6000	6000	4400	4400	3600 ₁₀	3500 ₁₀	3100 ₂₅	3100 ₂₀	2800 ₃₅	2800 ₃₅
	90	5000	5000	4100 ₅	4100 ₅	3400 ₂₅	3300 ₂₀	2900 ₄₀	2900 ₄₀	2600 ₅₀	2700 ₅₅
294x55	40	6700	6700	5200 ₅	5200 ₅	4200 ₂₅	4200 ₂₅	3600 ₄₀	3600 ₄₀	3300 ₅₅	3200 ₅₀
	90	5600	5600	4700 ₁₅	4700 ₁₅	4000 ₄₀	3900 ₄₀	3400 ₆₀	3300 ₆₀	3000 ₉₀	3000 ₈₅
336x55	40	7200	7400	6000 ₂₀	5900 ₂₀	4800 ₄₀	4800 ₄₀	4200 ₆₀	4200 ₆₀	3700 ₈₅	3600 ₈₅
	90	6200	6200	5200 ₂₅	5200 ₃₀	4500 ₅₅	4500 ₅₅	3900 ₉₀	3900 ₉₀	3500 ₁₁₀	3400 ₁₀₅
378x55	40	7700	8100	6700 ₃₀	6700 ₃₀	5400 ₅₅	5400 ₅₅	4700 ₈₅	4700 ₉₀	4200 ₁₀₅	4200 ₁₀₅
	90	6700	6700	5700 ₃₅	5700 ₄₀	5100 ₈₅	5100 ₈₅	4400 ₁₁₀	4400 ₁₁₀	3900 ₁₃₀	3900 ₁₃₀
126x65	40	3400	3300	2400	2500	1900	1900	1600	1600	1500	1300
	90	2800	2800	2200	2200	1800	1800	1600	1500	1400	1100
168x65	40	4600	4500	3200	3200	2600	2700	2200	2100	2000	1900
	90	3800	3800	3000	3000	2400	2600	2100	2000	1900	1800
210x65	40	5500	5500	4000	4000	3300	3200	2800	2800	2500 ₁₀	2600 ₁₀
	90	4500	4500	3800	3700	3100	3000	2700 ₁₅	2700 ₁₅	2300 ₂₅	2300 ₂₀
252x65	40	6200	6200	4800	4800	3900 ₅	3900 ₅	3400 ₁₅	3300 ₁₅	3000 ₂₅	3000 ₂₅
	90	5200	5200	4400	4400	3700 ₁₅	3600 ₁₅	3200 ₃₀	3200 ₃₀	2800 ₄₀	2800 ₄₅
294x65	40	6900	7000	5600	5600	4600 ₁₅	4500 ₁₅	4000 ₃₀	4000 ₃₀	3600 ₄₅	3500 ₄₀
	90	5800	5800	4900 ₅	4900 ₅	4300 ₃₀	4300 ₃₀	3700 ₄₅	3600 ₄₅	3300 ₆₅	3300 ₆₅
336x65	40	7400	7700	6400 ₁₀	6400 ₁₀	5300 ₃₀	5300 ₃₀	4600 ₅₀	4500 ₄₅	4100 ₆₅	4000 ₆₅
	90	6400	6400	5400 ₁₅	5400 ₁₅	4900 ₄₅	4900 ₄₅	4200 ₇₀	4300 ₇₅	3800 ₉₅	3700 ₉₅
378x65	40	8000	8400	7000 ₂₀	7200 ₂₀	5900 ₄₅	5900 ₄₅	5100 ₆₅	5100 ₆₅	4600 ₉₀	4500 ₉₅
	90	6900	7000	6000 ₂₅	6000 ₂₅	5400 ₆₀	5400 ₆₀	4800 ₉₅	4700 ₉₅	4300 ₁₁₅	4300 ₁₁₅
420x65	40	8400	9000	7500 ₂₅	7700 ₃₀	6600 ₆₀	6600 ₆₀	5700 ₉₀	5700 ₉₀	5100 ₁₁₀	5100 ₁₁₀
	90	7300	7500	6400 ₃₀	6400 ₃₀	5800 ₈₅	5800 ₈₅	5300 ₁₁₅	5300 ₁₁₅	4800 ₁₃₅	4700 ₁₃₅
126x85	40	3900	3900	2700	2800	2200	2200	1900	1900	1700	1700
	90	3100	3100	2500	2500	2100	2000	1800	1700	1600	1600
168x85	40	4900	5000	3700	3600	3000	3000	2600	2600	2300	2200
	90	4100	4100	3300	3300	2800	2800	2400	2600	2200	2000
210x85	40	5800	5800	4600	4500	3800	3700	3200	3200	2900	2900
	90	4800	4900	4100	4100	3500	3400	3000	3000	2700 ₁₀	2700 ₁₅
252x85	40	6600	6600	5500	5500	4500	4500	3900 ₅	3800 ₅	3500 ₁₅	3400 ₁₀
	90	5500	5500	4700	4700	4200 ₅	4200 ₅	3600 ₁₅	3600 ₁₅	3300 ₃₀	3200 ₂₅
294x85	40	7200	7400	6300	6300	5300 ₅	5300 ₅	4600 ₂₀	4500 ₁₅	4100 ₃₀	4000 ₃₀
	90	6200	6200	5300	5300	4800 ₁₅	4800 ₁₅	4200 ₃₀	4300 ₃₅	3800 ₄₅	3700 ₄₅

Continuous span Verandah beam AS 4055 Classification N1, N2, N3 & N4

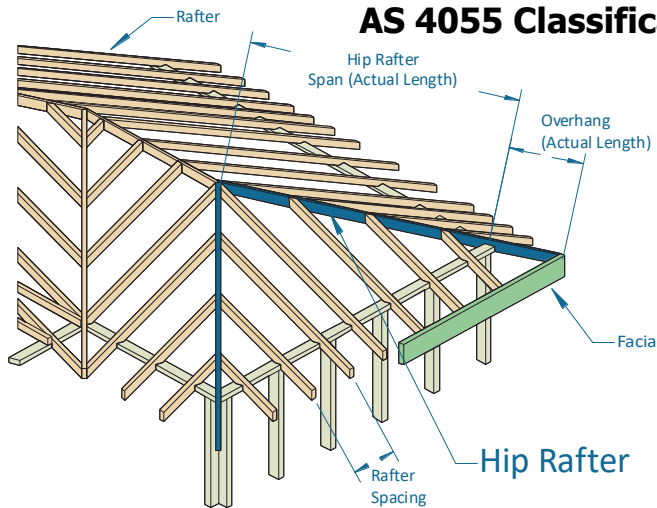
Roof load width (mm)		1500		3000		4500		6000		7500	
Rafter/truss spacing (mm)		600	1200	600	1200	600	1200	600	1200	600	1200
Member size (GL13S) Dx B (mm)	Roof mass (kg/m ²)	Maximum recommended verandah span (mm)									
		Continuous span									
336x85	40	7800	8100	6900	7000	6000 ₁₅	6000 ₁₅	5200 ₃₀	5200 ₃₀	4700 ₄₅	4600 ₄₀
	90	6700	6800	5800	5800	5300 ₂₅	5300 ₂₅	4900 ₅₀	4800 ₄₅	4300 ₆₅	4400 ₇₀
378x85	40	8300	8800	7400	7600 ₅	6800 ₃₀	6800 ₃₀	5900 ₄₅	5800 ₄₅	5200 ₆₀	5200 ₆₀
	90	7200	7400	6300 ₅	6300 ₅	5700 ₃₅	5800 ₃₅	5400 ₆₅	5400 ₆₅	4900 ₉₅	4800 ₉₀
420x85	40	8900	9500	7900 ₅	8200 ₁₀	7300 ₄₀	7500 ₄₀	6500 ₆₀	6500 ₆₀	5800 ₈₅	5800 ₈₅
	90	7700	8000	6800 ₁₀	6800 ₁₀	6200 ₄₅	6200 ₄₅	5800 ₈₅	5800 ₈₅	5400 ₁₁₀	5400 ₁₁₀
126x115	40	4300	4300	3200	3200	2600	2700	2200	2200	2000	1900
	90	3400	3400	2700	2700	2400	2400	2100	2000	1800	1800
168x115	40	5300	5300	4300	4300	3500	3400	3000	3000	2700	2700
	90	4400	4400	3600	3600	3200	3100	2800	2800	2500	2600
210x115	40	6200	6200	5300	5300	4400	4400	3800	3700	3400	3300
	90	5200	5200	4400	4400	4000	4000	3500	3500	3200	3100
252x115	40	6900	7000	6100	6100	5200	5300	4500	4500	4000	4000
	90	5900	5900	5000	5100	4600	4600	4200 ₅	4200 ₅	3800 ₁₅	3700 ₁₀
294x115	40	7500	7800	6700	6800	6100	6100	5300 ₅	5300 ₅	4800 ₁₅	4700 ₁₅
	90	6600	6600	5700	5700	5100	5200	4800 ₁₅	4800 ₁₅	4400 ₂₅	4400 ₂₅
336x115	40	8100	8600	7300	7500	6800	6800	6100 ₁₅	6000 ₁₅	5400 ₂₅	5400 ₂₅
	90	7100	7300	6200	6200	5700 ₅	5700 ₅	5300 ₂₅	5300 ₂₅	5000 ₄₀	5000 ₄₀
378x115	40	8700	9300	7800	8100	7300 ₁₀	7400 ₁₀	6800 ₃₀	6800 ₃₀	6100 ₄₀	6000 ₄₀
	90	7600	7900	6700	6800	6200 ₁₀	6200 ₁₀	5800 ₃₅	5800 ₃₅	5500 ₅₅	5500 ₅₅
420x115	40	9300	10000	8300	8800	7700 ₁₅	8100 ₂₀	7300 ₃₅	7500 ₄₀	6800 ₅₅	6800 ₅₅
	90	8100	8600	7200	7300	6600 ₂₀	6700 ₂₀	6200 ₄₅	6200 ₄₀	5900 ₇₀	5900 ₇₀

NOTES:

1. D = member depth, B = member breadth, NS = not suitable.
2. End bearing lengths = 35 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 35 mm at end supports and 70 mm at internal supports.
3. Restraint value for slenderness calculations is 1200 mm
4. Not all sizes of SmartLam GL13S in this table are stocked in each state. Please check with your supplier before ordering

Hip rafter - sheet and tile roof

AS 4055 Classification N1, N2, N3 & N4



EXAMPLE:

wind speed = N3
 roof load = 40 kg/m² (sheet roof)
 hip rafter span = 4500 mm (single span)
 rafter spacing = 600 mm

Enter column 600 mm rafter spacing and read down to span equal to or greater than 4500 mm for a 40 kg/m² roof load

ADOPT:

SmartLam GL13S - 252 x 55

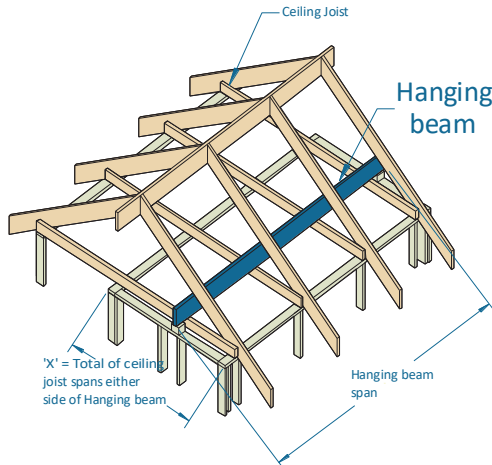
Rafter spacing (mm)		600		1200	
Member size (GL13S) DxB (mm)	Roof & ceiling mass (kg/m ²)	Maximum recommended rafter span + overhang span (mm)			
		Span	Overhang	Span	Overhang
126x55	40	2900	450	2900	400
	90	2600	400	2600	350
168x55	40	3500	650	3500	600
	90	3100	550	3100	450
210x55	40	4000	800	4000	750
	90	3500	700	3500	600
252x55	40	4500	900	4500	900
	90	4000	800	4000	750
294x55	40	4900	900	4900	900
	90	4300	850	4300	850
336x55	40	5300	1050	5300	1050
	90	4700	900	4700	900
378x55	40	5700	1100	5700	1100
	90	5000	1000	5000	1000
420x55	40	6100	1200	6100	1200
	90	5400	1000	5400	1000
126x65	40	3000	500	3000	450
	90	2700	450	2700	400
168x65	40	3600	700	3600	650
	90	3200	600	3200	550
210x65	40	4100	800	4100	800
	90	3700	700	3700	700
252x65	40	4600	900	4600	900
	90	4100	800	4100	800
294x65	40	5100	1000	5100	1000
	90	4500	900	4500	900
336x65	40	5500	1100	5500	1100
	90	4900	900	4900	900
378x65	40	5900	1100	5900	1100
	90	5200	1000	5200	1000
420x65	40	6300	1250	6300	1250
	90	5500	1100	5500	1100

Rafter spacing (mm)		600		1200	
Member size (GL13S) DxB (mm)	Roof & ceiling mass (kg/m ²)	Maximum recommended rafter span + overhang span (mm)			
		Span	Overhang	Span	Overhang
126x85	40	3200	600	3200	600
	90	2800	550	2800	500
168x85	40	3800	750	3800	750
	90	3400	600	3400	650
210x85	40	4400	800	4400	800
	90	3900	700	3900	700
252x85	40	4900	900	4900	900
	90	4300	850	4300	850
294x85	40	5400	1000	5400	1000
	90	4700	900	4700	900
336x85	40	5800	1150	5800	1150
	90	5100	1000	5100	1000
378x85	40	6200	1200	6200	1200
	90	5500	1100	5500	1100
420x85	40	6600	1300	6700	1300
	90	5800	1150	5800	1150

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
4. Maximum Birdsmouth depth = 30 % of depth
5. End bearing length = 35 at end supports
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 SmartLam GL13S 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, N2, N3 & N4



ceiling mass - 20 kg/m²

EXAMPLE:

Wind speed = N3

X = 5000 mm

Ceiling load width = X/2 = 5000/2 = 2500 mm

Hanging beam span = 4200 mm

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

ADOPT:

SmartLam GL13S - 210 x 55

Ceiling load width (mm)	1800	2400	3000	3600	4200	4800
Member size (GL13S) DxB (mm)	Maximum recommended Hanging beam span (mm)					
126x55	3200	2900	2600	2500	2300	2200
168x55	4100	3800	3500	3300	3100	2900
210x55	4800	4400	4200	4000	3800	3600
252x55	5500	5100	4800	4500	4300	4100
294x55	6100	5700	5300	5100	4800	4600
336x55	6700	6200	5900	5600	5300	5100
378x55	7300	6800	6400	6100	5800	5600
420x55	7800	7300	6900	6600	6300	6000
126x65	3400	3000	2800	2600	2400	2300
168x65	4200	3900	3700	3500	3200	3100
210x65	5000	4600	4300	4100	3900	3800
252x65	5700	5300	5000	4700	4500	4300
294x65	6300	5900	5500	5300	5000	4800
336x65	6900	6500	6100	5800	5600	5300
378x65	7500	7000	6600	6300	6100	5800
420x65	8100	7600	7200	6800	6500	6300
126x85	3600	3300	3000	2800	2700	2500
168x85	4500	4200	3900	3700	3500	3300
210x85	5200	4900	4600	4400	4200	4000
252x85	6000	5600	5300	5000	4800	4600
294x85	6600	6200	5900	5600	5400	5100
336x85	7300	6800	6500	6200	5900	5700
378x85	7900	7400	7000	6700	6400	6200
420x85	8500	8000	7600	7200	6900	6700

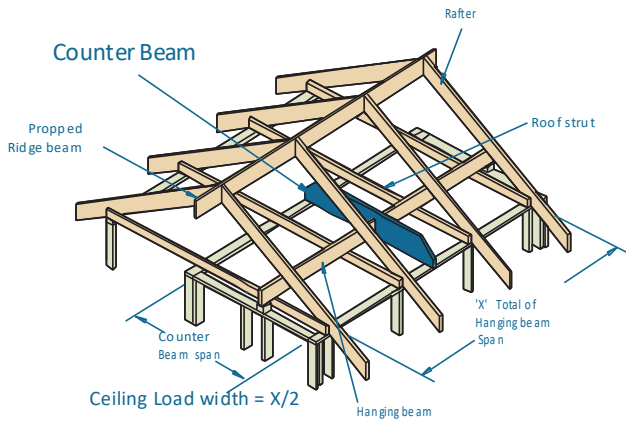
NOTES:

1. D = member depth, B = member breadth, NS = not suitable.
2. The above table is based upon a maximum ceiling mass of 20 kg/m²
3. End bearing length = 70 at end supports
4. Restraint value for slenderness calculation is 1500 mm
5. Not all sizes of SmartLam GL13S in this table are stocked in each state. Please check with your supplier before ordering

Counter beam supporting hanging beam

AS 4055 Classification N1, N2, N3 & N4

Ceiling mass - 20 kg/m²



EXAMPLE:

wind speed = N3
 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:

SmartLam GL13S - 210 x 55

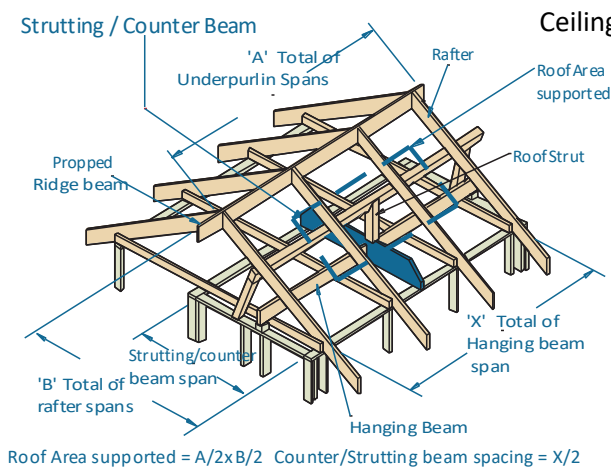
Ceiling load width (mm)	600	1800	2400	3000	3600	4200	4800	5400	6600
Member size (GL13S) DxB (mm)	Maximum recommended Counter beam span (mm)								
126x55	4800	3600	3300	3100	2900	2800	2700	2600	2400
168x55	5800	4700	4400	4100	3900	3700	3500	3400	3200
210x55	6700	5500	5200	4900	4700	4600	4400	4300	4000
252x55	7500	6300	5900	5600	5400	5200	5100	4900	4700
294x55	8300	7000	6600	6300	6000	5800	5700	5500	5300
336x55	9000	7600	7200	6900	6600	6400	6200	6100	5800
378x55	9700	8300	7800	7500	7200	7000	6800	6600	6300
420x55	10400	8900	8400	8100	7800	7500	7300	7200	6800
126x65	4900	3800	3500	3300	3100	2900	2800	2700	2500
168x65	5900	4900	4600	4300	4100	3900	3700	3600	3400
210x65	6900	5700	5400	5100	4900	4700	4600	4500	4200
252x65	7700	6500	6100	5800	5600	5400	5300	5100	4900
294x65	8500	7200	6800	6500	6300	6100	5900	5700	5500
336x65	9200	7900	7500	7100	6900	6700	6500	6300	6000
378x65	9900	8500	8100	7800	7500	7200	7100	6900	6600
420x65	10600	9200	8700	8300	8000	7800	7600	7400	7100
126x85	5100	4100	3800	3500	3300	3200	3100	2900	2800
168x85	6200	5100	4800	4600	4400	4200	4100	3900	3700
210x85	7100	6000	5700	5400	5200	5000	4900	4800	4500
252x85	8000	6800	6400	6200	5900	5700	5600	5400	5200
294x85	8800	7500	7200	6900	6600	6400	6200	6100	5800
336x85	9500	8200	7800	7500	7300	7000	6900	6700	6400
378x85	10200	8900	8500	8200	7900	7600	7500	7300	7000
420x85	10800	9500	9100	8800	8500	8200	8000	7800	7500

NOTES:

1. D = member depth, B = member breadth, NS = not suitable.
2. The above table is based upon a maximum ceiling mass of 20 kg/m²
3. End bearing length = 70 at end supports
4. Not all sizes of SmartLam GL13S in this table are stocked in each state. Please check with your supplier before ordering

Strutting/counter beam supporting underpurlins & hanging beam

AS 4055 Classification N1, N2, N3 & N4



Ceiling mass - 20 kg/m^2

EXAMPLE:

wind speed = N3
 sheet roof = 40 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)
 $= 5250000/1000000 = 5.25 \text{ m}^2$
 total of hanging beam span 'X' = 4500 mm
 effective beam spacing = $'X' / 2 = 4500 / 2 = 2250 \text{ mm}$
 strutting/counter beam span = 4500 mm

Enter column at 3600 mm effective beam spacing, 6 m^2 roof area supported and read down to a span greater than or equal to 4500 mm

ADOPT: SmartLam GL13S - 336 x 55

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 (GL13S) DxB (mm)	Roof mass (kg/m^2)	Maximum recommended Strutting/Counter beam span (mm)											
126x55	40	2500	1900	1200	NS	NS	NS	2200	1800	1300	NS	NS	NS
	90	2000	1500	1100	NS	NS	NS	1800	1400	1100	NS	NS	NS
168x55	40	3500	2900	2300	1700	1300	1100	3100	2700	2300	1700	1300	1100
	90	2900	2200	1900	1500	1200	1000	2700	2100	1800	1500	1200	1000
210x55	40	4200	3800	3400	2700	2100	1700	3800	3500	3200	2700	2100	1700
	90	3800	3100	2600	2300	1900	1600	3500	2900	2500	2200	1800	1500
252x55	40	4900	4400	4100	3800	3100	2500	4400	4100	3900	3600	3100	2600
	90	4400	3800	3400	3000	2700	2300	4100	3600	3200	2900	2600	2200
294x55	40	5600	5100	4700	4400	4200	3500	5000	4700	4400	4200	4000	3500
	90	5100	4400	4000	3700	3400	3100	4700	4200	3800	3600	3300	3000
336x55	40	6200	5700	5300	5000	4700	4500	5500	5200	4900	4700	4500	4300
	90	5700	5000	4500	4200	3900	3700	5200	4700	4300	4000	3800	3600
378x55	40	6700	6200	5800	5500	5200	5000	6000	5700	5400	5200	5000	4800
	90	6200	5500	5000	4700	4400	4100	5700	5200	4800	4500	4300	4100
420x55	40	7300	6800	6400	6000	5800	5500	6500	6200	5900	5700	5500	5300
	90	6800	6000	5500	5100	4800	4600	6200	5700	5300	5000	4700	4500
126x65	40	2700	2100	1500	1100	NS	NS	2400	2000	1500	1100	NS	NS
	90	2100	1600	1300	1000	NS	NS	2000	1500	1300	1000	NS	NS
168x65	40	3700	3100	2700	2000	1600	1300	3300	2900	2600	2000	1600	1300
	90	3100	2400	2000	1800	1400	1200	2900	2300	2000	1700	1400	1200
210x65	40	4400	4000	3600	3200	2500	2100	4000	3700	3400	3100	2500	2100
	90	4000	3300	2800	2500	2200	1800	3700	3100	2700	2400	2200	1800
252x65	40	5100	4600	4300	4000	3600	3000	4600	4300	4000	3800	3600	3000
	90	4600	4000	3600	3200	2900	2700	4300	3800	3500	3100	2800	2600
294x65	40	5800	5300	4900	4600	4400	4100	5200	4900	4600	4400	4200	4000
	90	5300	4600	4200	3900	3600	3400	4900	4400	4000	3800	3500	3300
336x65	40	6400	5900	5500	5200	4900	4700	5800	5400	5200	4900	4700	4500
	90	5900	5200	4700	4400	4100	3900	5400	4900	4500	4300	4000	3800
378x65	40	7000	6500	6100	5800	5500	5300	6300	6000	5700	5400	5200	5000
	90	6500	5800	5300	4900	4600	4400	6000	5400	5000	4700	4500	4300
420x65	40	7500	7000	6700	6300	6000	5800	6800	6500	6200	5900	5700	5500
	90	7000	6300	5800	5400	5100	4800	6500	5900	5500	5200	4900	4700

Strutting/counter beam supporting underpurlins & hanging beam AS 4055 Classification N1, N2, N3 & N4 (cont'd)

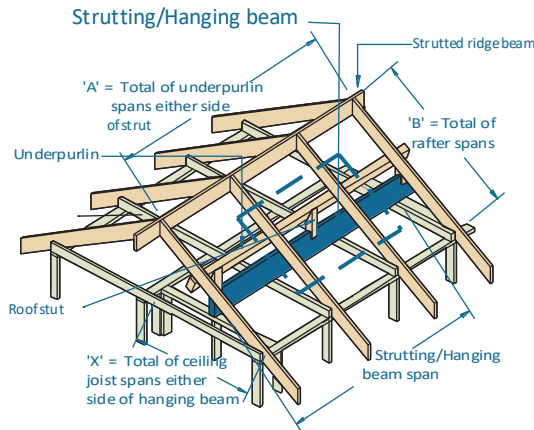
Ceiling mass - 20 kg/m²

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 (GL13S) DxB (mm)	Roof mass (kg/m ²)	Maximum recommended Strutting/Counter beam span (mm)											
126x85	40	2900	2400	2000	1400	1100	NS	2600	2200	2000	1500	1100	NS
	90	2400	1800	1500	1300	1000	NS	2200	1800	1500	1300	1000	NS
168x85	40	4000	3500	3100	2600	2100	1700	3600	3200	2900	2600	2100	1700
	90	3500	2700	2300	2000	1800	1500	3200	2600	2200	2000	1800	1500
210x85	40	4700	4300	3900	3700	3300	2700	4300	4000	3700	3500	3300	2800
	90	4300	3700	3200	2800	2500	2300	4000	3500	3100	2700	2500	2300
252x85	40	5500	5000	4600	4300	4100	3900	4900	4600	4300	4100	3900	3800
	90	5000	4300	3900	3600	3300	3100	4600	4100	3800	3500	3200	3000
294x85	40	6100	5700	5300	5000	4700	4500	5500	5200	5000	4700	4500	4400
	90	5700	5000	4500	4200	3900	3700	5200	4700	4400	4100	3800	3700
336x85	40	6800	6300	5900	5600	5300	5100	6100	5800	5500	5300	5100	4900
	90	6300	5600	5100	4800	4500	4200	5800	5300	4900	4600	4400	4200
378x85	40	7400	6900	6500	6200	5900	5700	6700	6300	6100	5800	5600	5400
	90	6900	6200	5700	5300	5000	4800	6300	5800	5400	5100	4900	4600
420x85	40	8000	7500	7100	6800	6500	6300	7200	6900	6600	6400	6200	6000
	90	7500	6800	6300	5800	5500	5300	6900	6400	6000	5600	5400	5100

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. Restraint value for slenderness calculations is 1500 mm
5. Not all sizes of SmartLam GL13S in this table are stocked in each state. Please check with your supplier before ordering

Strutting/hanging beam AS 4055 classification N1, N2, N3 & N4



Ceiling mass - 20 kg/m²

EXAMPLE:

wind speed = N3

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

Roof Area Supported = A/2 x B/2 Ceiling Load width = X/2

ADOPT: SmartLam GL13S - 294 x 55

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 (GL13S) Dx B (mm)	Roof mass (kg/m ²)	Maximum recommended Strutting/Hanging beam span (mm)											
126x55	20	2600	2300	2000	1600	1200	1000	2200	2000	1800	1500	1200	1000
	60	2200	1700	1400	1200	1000	NS	1900	1600	1400	1200	NS	NS
168x55	20	3600	3300	2900	2700	2200	1900	3000	2800	2600	2400	2100	1800
	60	3100	2500	2200	1900	1700	1400	2700	2300	2000	1800	1700	1400
210x55	20	4400	4000	3800	3600	3400	2900	3700	3600	3400	3200	3000	2800
	60	3900	3400	3000	2600	2400	2200	3500	3100	2700	2500	2300	2100
252x55	20	5000	4700	4400	4200	4000	3900	4300	4100	4000	3800	3700	3600
	60	4600	4100	3700	3400	3100	2900	4100	3700	3500	3200	2900	2800
294x55	20	5700	5300	5100	4800	4600	4500	4900	4700	4500	4400	4200	4100
	60	5200	4700	4300	4000	3800	3600	4600	4300	4000	3800	3600	3400
336x55	20	6300	6000	5700	5400	5200	5000	5400	5200	5000	4900	4700	4600
	60	5800	5300	4900	4500	4300	4100	5100	4800	4500	4300	4100	3900
378x55	20	6900	6500	6200	6000	5800	5600	5900	5700	5500	5400	5200	5100
	60	6400	5800	5400	5100	4800	4600	5600	5300	5000	4700	4500	4400
420x55	20	7400	7100	6800	6500	6300	6100	6400	6200	6000	5900	5700	5600
126x65	60	7000	6400	5900	5600	5300	5000	6100	5800	5500	5200	5000	4800
	20	2800	2400	2200	1800	1500	1200	2300	2100	1900	1800	1400	1200
	60	2300	1800	1500	1400	1100	NS	2000	1700	1500	1300	1100	NS
168x65	20	3800	3500	3100	2900	2600	2200	3200	2900	2700	2600	2400	2100
	60	3400	2700	2300	2100	1900	1700	2900	2500	2200	2000	1800	1700
210x65	20	4500	4200	4000	3800	3600	3400	3900	3700	3600	3400	3200	3100
	60	4100	3600	3200	2900	2600	2400	3700	3300	2900	2700	2500	2300
252x65	20	5200	4900	4600	4400	4200	4100	4500	4300	4200	4000	3900	3800
	60	4800	4300	3900	3600	3400	3100	4300	3900	3700	3400	3200	3000
294x65	20	5900	5600	5300	5100	4900	4700	5100	4900	4700	4600	4400	4300
	60	5500	4900	4500	4200	4000	3800	4800	4500	4200	4000	3800	3600
336x65	20	6500	6200	5900	5700	5500	5300	5600	5400	5300	5100	5000	4800
	60	6100	5500	5100	4800	4500	4300	5400	5000	4700	4500	4300	4100
378x65	20	7100	6800	6500	6300	6000	5800	6100	5900	5800	5600	5500	5300
	60	6700	6100	5700	5300	5000	4800	5900	5500	5200	5000	4800	4600
420x65	20	7700	7400	7100	6800	6600	6400	6600	6400	6300	6100	6000	5800
	60	7300	6700	6200	5800	5600	5300	6400	6000	5700	5500	5200	5000

Strutting/hanging beam

AS 4055 classification N1, N2, N3 & N4 (Cont'd)

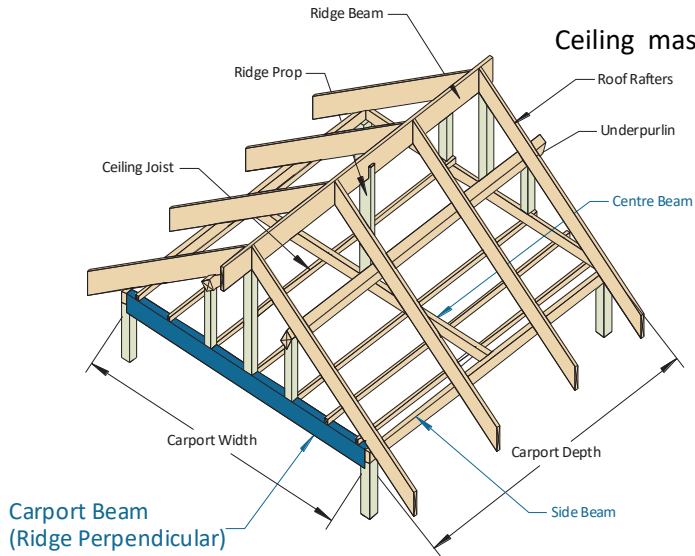
Ceiling mass - 20 kg/m²

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 (GL13S) DxB (mm)	Roof mass (kg/m ²)	Maximum recommended Strutting/Hanging beam span (mm)											
126x85	20	3100	2700	2400	2200	1900	1600	2600	2300	2100	2000	1900	1600
	60	2600	2100	1800	1500	1400	1200	2300	1900	1700	1500	1400	1200
168x85	20	4100	3800	3500	3200	3000	2800	3500	3300	3000	2900	2700	2600
	60	3700	3100	2700	2400	2100	2000	3200	2800	2500	2200	2000	1900
210x85	20	4800	4500	4300	4100	3900	3700	4200	4000	3800	3700	3600	3400
	60	4400	3900	3600	3200	3000	2700	3900	3600	3300	3000	2800	2600
252x85	20	5600	5300	5000	4800	4600	4400	4800	4600	4500	4300	4200	4100
	60	5200	4600	4200	4000	3700	3500	4600	4200	4000	3700	3600	3400
294x85	20	6300	5900	5700	5400	5200	5000	5400	5200	5000	4900	4800	4600
	60	5800	5300	4900	4600	4300	4100	5200	4800	4500	4300	4100	3900
336x85	20	6900	6600	6300	6100	5900	5700	6000	5800	5600	5500	5300	5200
	60	6500	5900	5500	5200	4900	4700	5700	5400	5100	4800	4600	4500
378x85	20	7500	7200	6900	6700	6500	6300	6500	6300	6200	6000	5900	5700
	60	7100	6500	6100	5700	5500	5200	6300	5900	5600	5400	5100	5000
420x85	20	8100	7800	7500	7300	7100	6900	7000	6900	6700	6500	6400	6300
	60	7700	7100	6700	6300	6000	5700	6800	6400	6100	5900	5600	5500

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. Not all sizes of SmartLam GL13S in this table are stocked in each state. Please check with your supplier before ordering

Carport beam - Ridge perpendicular AS 4055 classification N1, N2, N3 and N4



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:

SmartLam GL13S - 252 x 65

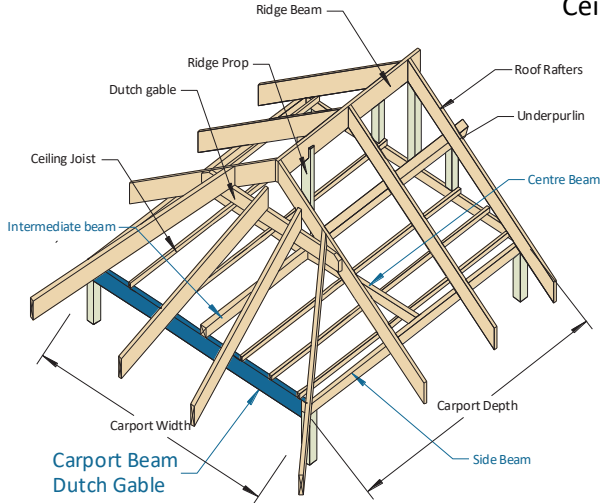
Member size (GL13S) DxB (mm)	Roof mass (kg/m ²)	Carport Depth (side)					Member size (GL13S) DxB (mm)	Roof mass (kg/m ²)	Carport Depth (side)				
		5200	5400	5600	5800	6000			5200	5400	5600	5800	6000
		Maximum recommended carport beam span (mm)							Maximum recommended carport beam span (mm)				
168x65	20	3900	3900	3800	3800	3800	168x115	20	4400	4400	4300	4300	4300
	70	3200	3200	3200	3200	3100		70	3700	3700	3600	3600	3600
210x65	20	4600	4500	4500	4500	4400	210x115	20	5200	5100	5100	5100	5000
	70	3800	3800	3800	3700	3700		70	4400	4300	4300	4300	4200
252x65	20	5200	5200	5100	5100	5100	252x115	20	5900	5800	5800	5700	5700
	70	4400	4300	4300	4300	4200		70	5000	4900	4900	4900	4800
294x65	20	5800	5800	5700	5700	5700	294x115	20	6500	6500	6400	6400	6300
	70	4900	4900	4800	4800	4800		70	5600	5500	5500	5400	5400
336x65	20	6400	6400	6300	6300	6200	336x115	20	7100	7100	7000	7000	7000
	70	5400	5400	5300	5300	5200		70	6100	6100	6000	6000	5900
378x65	20	7000	6900	6900	6800	6800	378x115	20	7700	7700	7600	7600	7500
	70	5900	5800	5800	5800	5700		70	6700	6600	6600	6500	6500
420x65	20	7500	7400	7400	7300	7300	420x115	20	8300	8200	8200	8100	8100
	70	6400	6300	6300	6200	6200		70	7200	7100	7100	7000	7000
168x85	20	4100	4100	4100	4000	4000	168x135	20	4600	4500	4500	4500	4400
	70	3500	3400	3400	3400	3300		70	3800	3800	3800	3800	3700
210x85	20	4900	4800	4800	4700	4700	210x135	20	5300	5300	5300	5200	5200
	70	4100	4000	4000	4000	3900		70	4500	4500	4500	4400	4400
252x85	20	5500	5500	5400	5400	5400	252x135	20	6000	6000	6000	5900	5900
	70	4700	4600	4600	4500	4500		70	5200	5100	5100	5000	5000
294x85	20	6200	6100	6100	6000	6000	294x135	20	6700	6700	6600	6600	6500
	70	5200	5200	5100	5100	5100		70	5800	5700	5700	5600	5600
336x85	20	6800	6700	6700	6600	6600	336x135	20	7300	7300	7200	7200	7200
	70	5800	5700	5700	5600	5600		70	6300	6300	6200	6200	6200
378x85	20	7300	7300	7200	7200	7100	378x135	20	7900	7900	7800	7800	7700
	70	6300	6200	6200	6100	6100		70	6900	6800	6800	6700	6700
420x85	20	7900	7800	7800	7700	7700	420x135	20	8500	8400	8400	8300	8300
	70	6800	6700	6600	6600	6500		70	7400	7400	7300	7200	7200

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. Not all sizes of SmartLam GL13S 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, N2, N3 and N4

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:

SmartLam GL13S - 210 x 65

Member size (GL13S) DxB (mm)	Roof mass (kg/m ²)	Carport Depth (side)					Member size (GL13S) DxB (mm)	Roof mass (kg/m ²)	Carport Depth (side)				
		5200	5400	5600	5800	6000			5200	5400	5600	5800	6000
		Maximum recommended carport beam span (mm)							Maximum recommended carport beam span (mm)				
168x65	20	4100	4100	4000	4000	4000	168x115	20	4600	4600	4500	4500	4500
	70	3500	3500	3500	3500	3400		70	4000	4000	4000	3900	3900
210x65	20	4800	4800	4700	4700	4700	210x115	20	5400	5300	5300	5300	5200
	70	4200	4100	4100	4100	4000		70	4700	4700	4700	4600	4600
252x65	20	5500	5400	5400	5300	5300	252x115	20	6100	6100	6000	6000	5900
	70	4800	4700	4700	4700	4600		70	5400	5400	5300	5300	5200
294x65	20	6100	6000	6000	6000	5900	294x115	20	6800	6700	6700	6600	6600
	70	5300	5300	5300	5200	5200		70	6000	6000	5900	5900	5900
336x65	20	6700	6600	6600	6500	6500	336x115	20	7400	7400	7300	7300	7200
	70	5900	5800	5800	5700	5700		70	6600	6600	6500	6500	6400
378x65	20	7300	7200	7200	7100	7100	378x115	20	8000	7900	7900	7900	7800
	70	6400	6400	6300	6300	6200		70	7200	7100	7100	7000	7000
420x65	20	7800	7700	7700	7600	7600	420x115	20	8600	8500	8500	8400	8400
	70	6900	6800	6800	6700	6700		70	7700	7700	7600	7600	7500
168x85	20	4300	4300	4300	4200	4200	168x135	20	4800	4700	4700	4700	4600
	70	3800	3700	3700	3700	3700		70	4200	4200	4100	4100	4100
210x85	20	5100	5000	5000	5000	4900	210x135	20	5500	5500	5500	5400	5400
	70	4400	4400	4400	4300	4300		70	4900	4900	4800	4800	4800
252x85	20	5800	5700	5700	5600	5600	252x135	20	6300	6200	6200	6200	6100
	70	5100	5000	5000	5000	4900		70	5600	5500	5500	5500	5400
294x85	20	6400	6400	6300	6300	6200	294x135	20	7000	6900	6900	6800	6800
	70	5700	5600	5600	5500	5500		70	6200	6200	6100	6100	6000
336x85	20	7000	7000	6900	6900	6800	336x135	20	7600	7500	7500	7500	7400
	70	6200	6200	6100	6100	6000		70	6800	6800	6700	6700	6600
378x85	20	7600	7600	7500	7500	7400	378x135	20	8200	8100	8100	8100	8000
	70	6800	6700	6700	6600	6600		70	7400	7300	7300	7200	7200
420x85	20	8200	8100	8100	8000	8000	420x135	20	8800	8700	8700	8600	8600
	70	7300	7200	7200	7100	7100		70	8000	7900	7800	7800	7700

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. Not all sizes of SmartLam GL13S in this table are stocked in each state. Please check with your supplier before ordering

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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