

SmartLam GL13S

(NON pre-cambered)

Design Guide



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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.

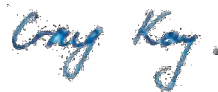
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Certification

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



CRAIG KAY RPEng, RPEQ-5100, EC-1961, PB0730, CC56335 C NER
National Product Engineer

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.

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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.

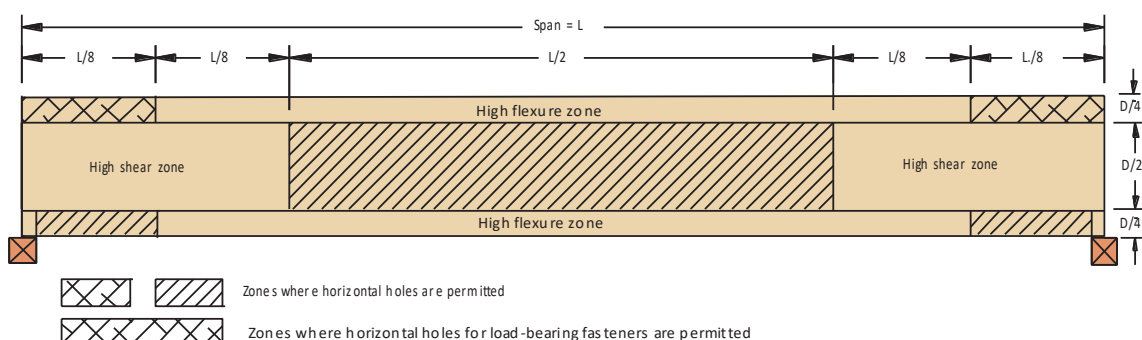
Field drilled horizontal holes should be for access only and should not be used as attachment points for brackets or other load bearing hardware unless specifically designed as such by the Engineer/Designer.

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.

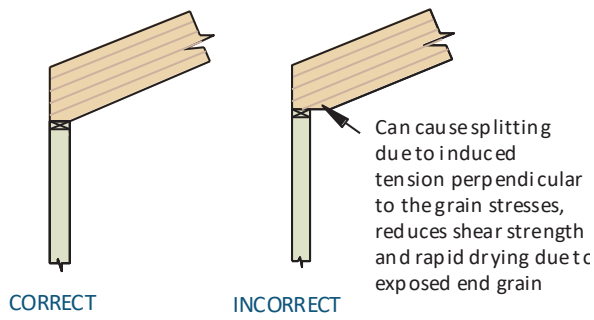
Figure 2 - Zones where horizontal holes are permitted in a uniformly loaded simply supported beam



Installation

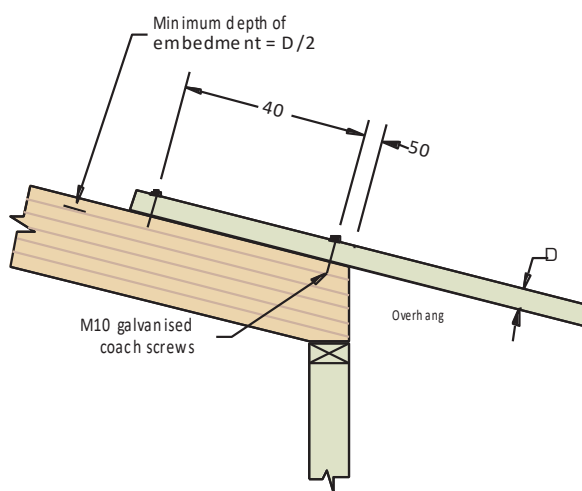
Birdsmouthing

Figure 3 - Birds mouting 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

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

2. Cyclonic Areas

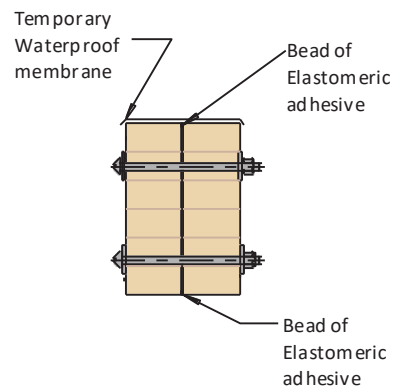
Recommendations as per above, but reduced as follows:

- i. Non Birds mouthed - 25% of actual beam span
- ii. Birds mouthed-
 - iii. Sheet roof - 10% of actual beam span
 - iv. Tiled roof - 20% of actual beam span

Multiple SmartLam GL13S section beams

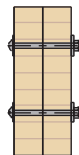
Vertical laminations may be achieved by adopting the principle described in clause 2.3 of AS 1684, however, due to the thickness of SmartLam GL13S, nails are NOT suitable for combining SmartLam GL13S beams.

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.

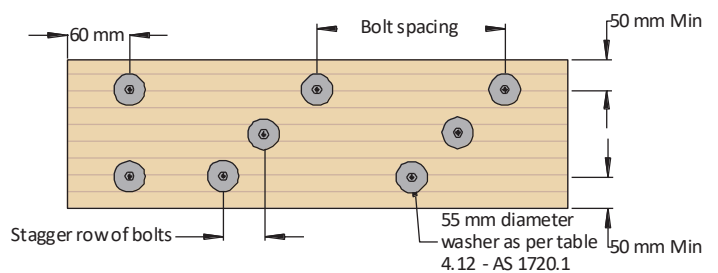


Recommended "during construction" protection from weather for multiple SmartLams.

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.

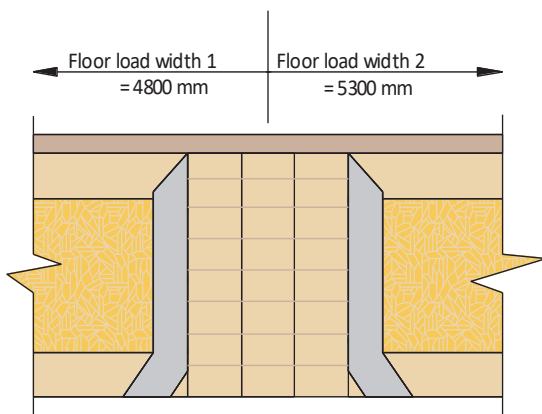
Maximum floor load width supported by either outside member (mm)

| 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:

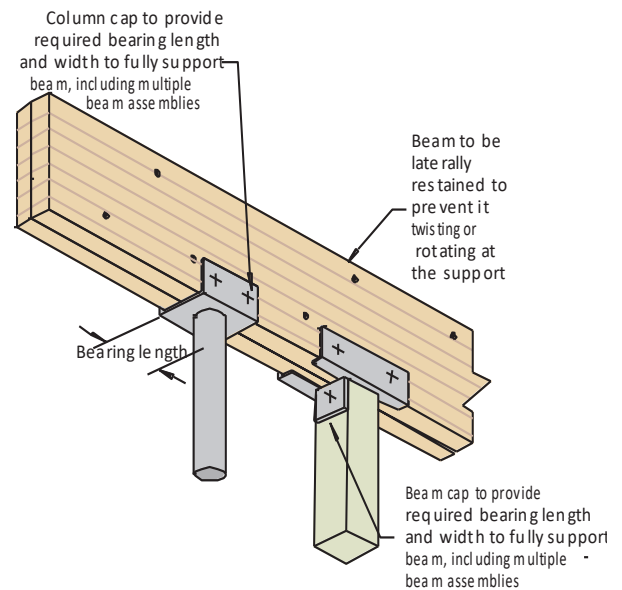
Beam of 2 SmartLam GL13S loaded on both side (Combination 1)

FLW 1 = 4800 mm, FLW 2 = 5300 mm

Total FLW = 4800 + 5300 = 10100 mm.

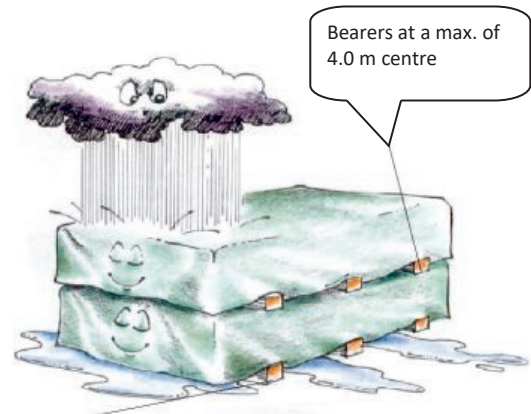
1. Use SmartFrame software or these SmartLam GL13S safe load tables to size the two member section to support the FLW of 5100 mm.
2. Choose the larger of the side FLW's carried by the beam, in this case 5300 mm.
3. Enter the table at the "Combination 1" row and scan across to a table value greater than 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

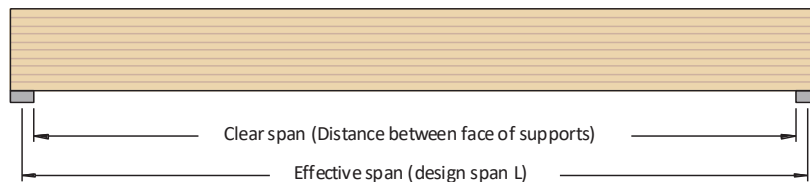
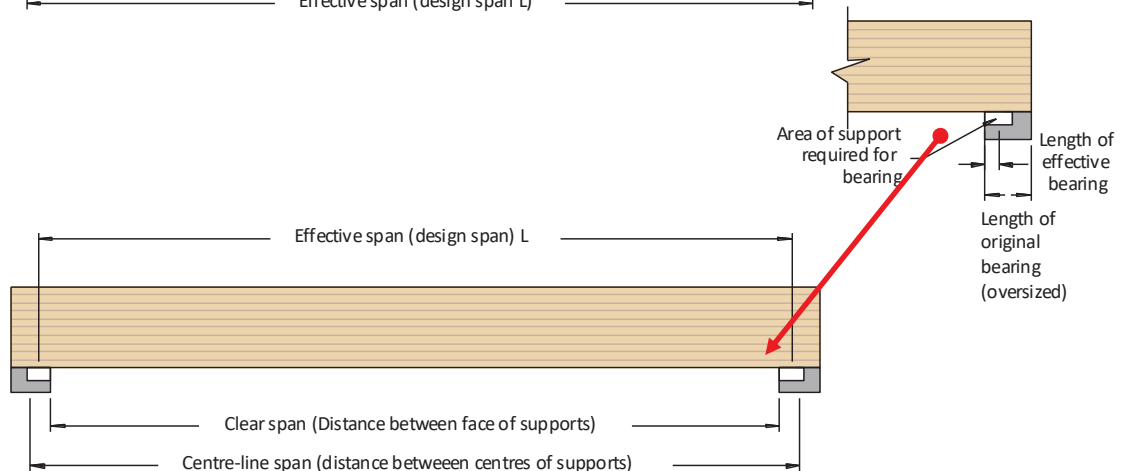


Diagram (b) shows beam where bearings at each end have been oversized. (This is frequently the case for beams that bear onto brickwork or concrete walls where the thickness of the wall is in excess of the area required to give the beam bearing capacity). To find the correct effective span:

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



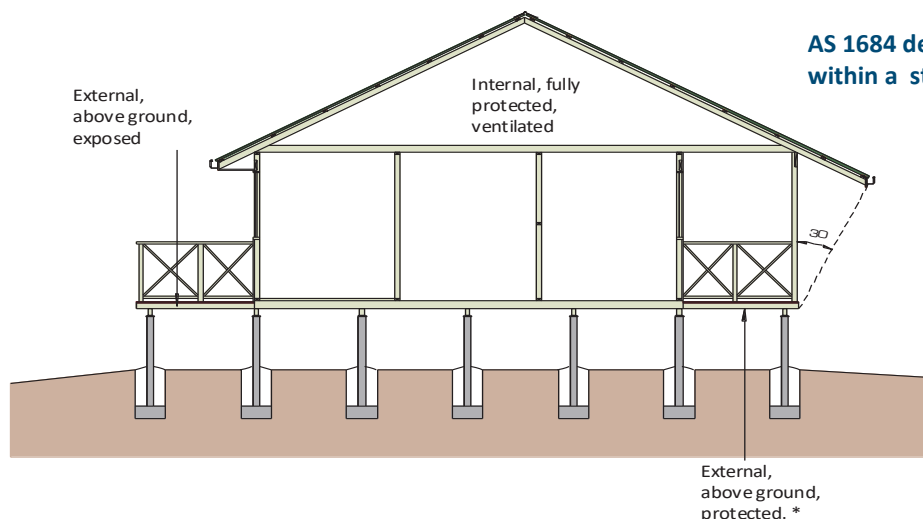
| span difference | effective span | resultant span description |
|----------------------|-----------------|----------------------------|
| 10% Max | main span | continuous |
| 10 – 30% | 1.1 x main span | continuous |
| Above 30% difference | main span | single |

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

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.

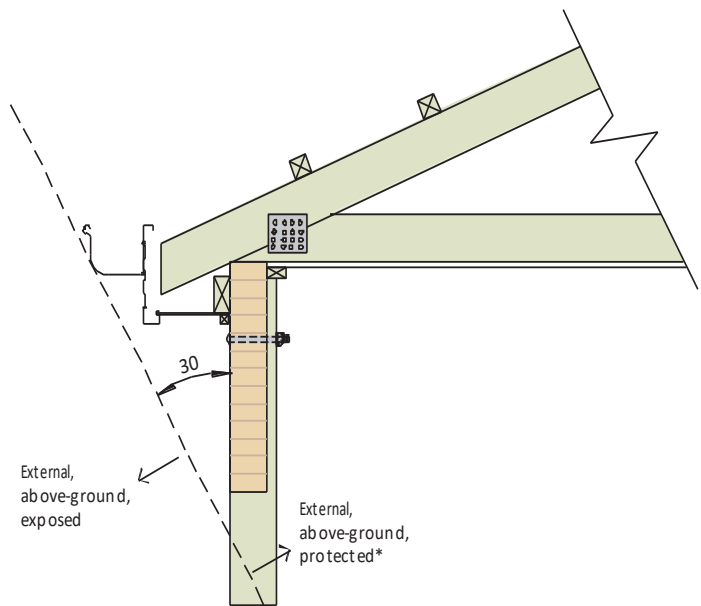
Table 1 of Appendix A in AS/NZS 1604.5 is a guide to hazard classifications for various end-use applications. This table is for guidance only, and only lists limited application.

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)

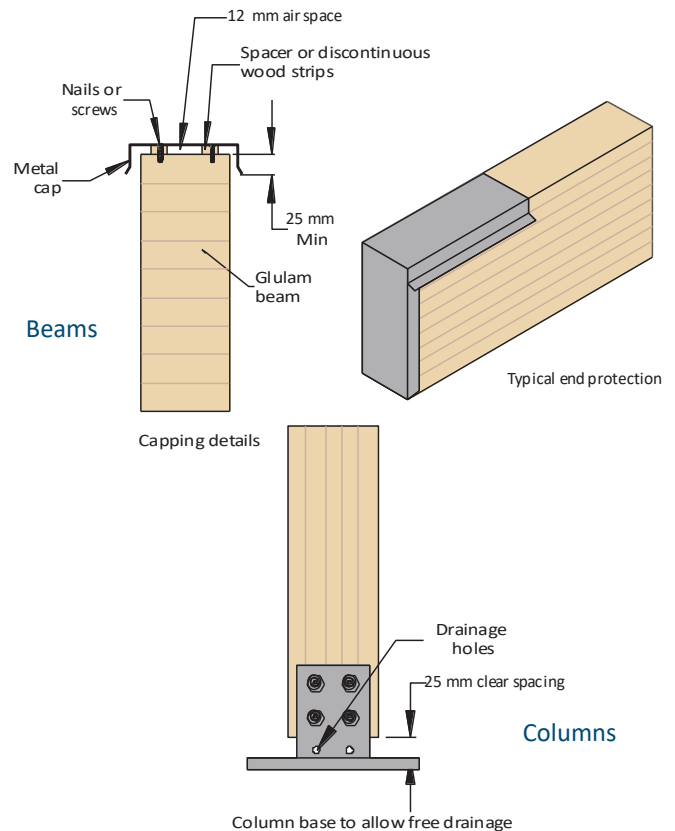
ish coating. If initial cleaning of the treated wood is needed, it is recommended that the project be cleaned with a deck cleaning product and allow to fully dry

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 δ = timber density at a moisture content of 12%, in kg/m^3 . 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.

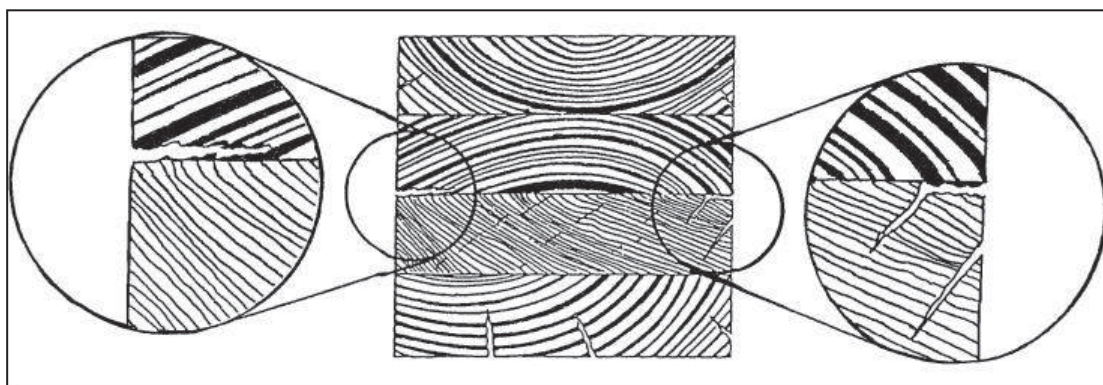
Checks are usually not of structural importance unless they are significant in depth, occur in the mid-height of the member near the supports, and the design of the member is governed by shear. If these conditions exist, the reduction in shear strength is directly proportional to the ratio of the depth 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 (<i>Pinus elliottii</i>) Radiata pine (<i>Pinus Radiata</i>) |
| | 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 ϕ * | | |
| 0.95 | 0.85 | 0.75 |

* AS 1720.1:2010 Table 2.1

4. Duration of load

The duration of load factor k_1 for strength 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 $EI_{xx} \Rightarrow 2/1.5 \times EI_{xx}$ 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 k_4 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 k_4 shall be the greater of:

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

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

6. Length and position of bearing

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

7. Load sharing

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

8. Stability

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

9. Temperature

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

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 |

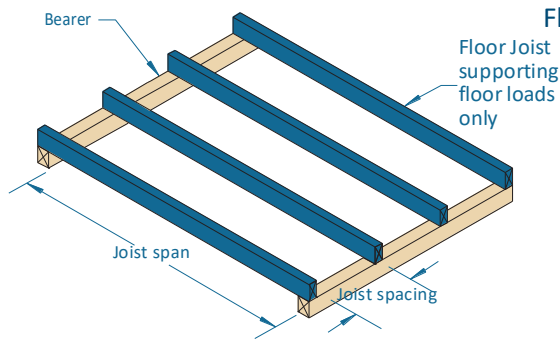
SmartLam GL13S section properties

| 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 | EIxx 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

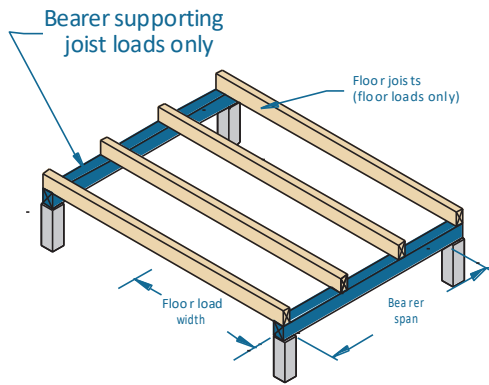
| Joist spacing (mm) | 300 | 450 | 600 | 300 | 450 | 600 |
|---------------------------------|-------------------------------------|------|------|-----------------|-------|-------|
| Member size (GL13S) DxB (mm) | Maximum recommended joist span (mm) | | | | | |
| | Single span | | | Continuous span | | |
| 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

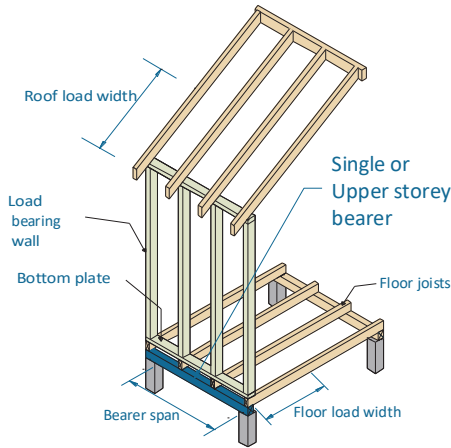
EXAMPLE:

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 |

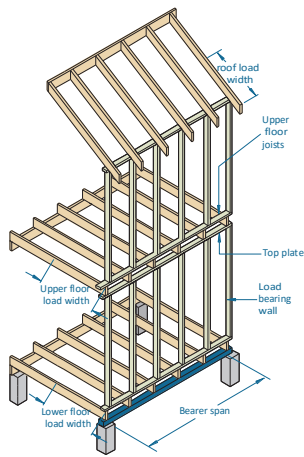
Floor bearers supporting single storey load bearing wall - sheet and tiled roof Continuous span

| 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) DxB (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:

- 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
- 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) DxB (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 |

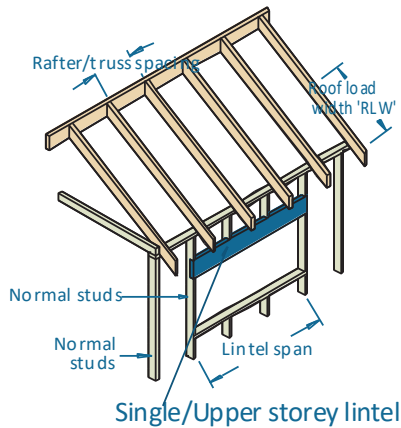
Floor bearers supporting two floors and roof - sheet and tiled roof Continuous span (Cont'd)

| 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) DxB (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) DxB (mm) | Roof mass (kg/m ²) | Maximum recommended Lintel span (mm) | | | | | | | | | |
| | | 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 |

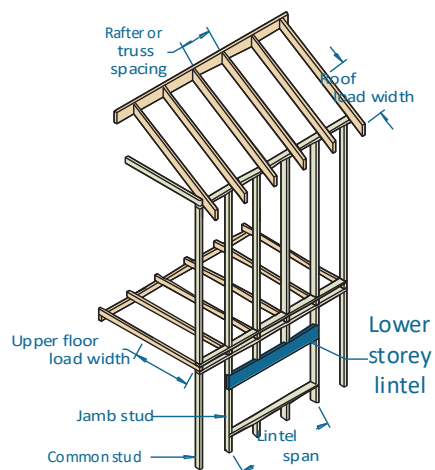
Single span lintels in single/upper storey walls AS 4055 Classification N1, N2, N3 & N4 (Cont'd)

| 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) DxH (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 |

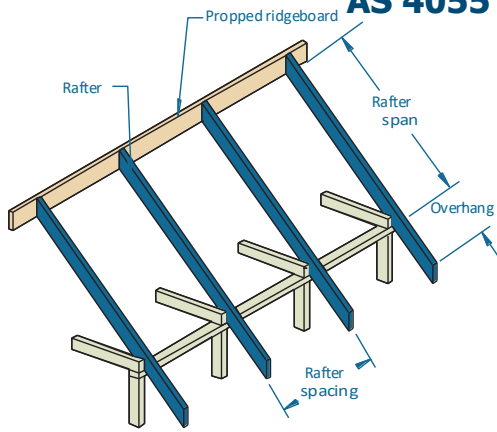
Single span lintels in lower storey walls AS 4055 classification N1, N2, N3 & N4 (Cont'd)

| 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



Maximum Birds-mouth = 30% of rafter depth

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) DxB (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)

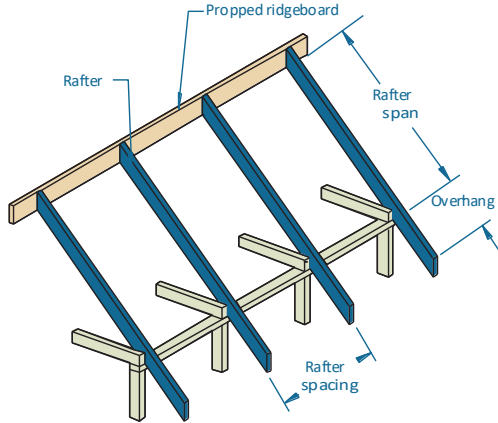
| Rafter spacing (mm) | | 450 | 600 | 900 | 1200 | 450 | 600 | 900 | 1200 |
|---------------------------------|-----------------------------------|--------------------------------------|-------|-------|------|-----------------|-------|--------------------|--------------------|
| Member size (GL13S) DxB (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 |

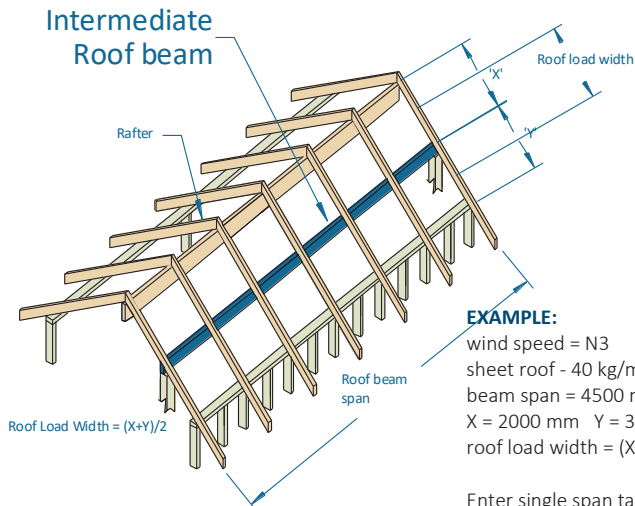
Single/continuous span roof rafter without ceiling attached AS 4055 classification N1, N2, N3 & N4 (Cont'd)

| Rafter spacing (mm) | | 450 | 600 | 900 | 1200 | 450 | 600 | 900 | 1200 |
|---------------------------------|-----------------------------------|--------------------------------------|-------|-------|-------|-----------------|-------|-------|--------------------|
| Member size (GL13S) DxB (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 |

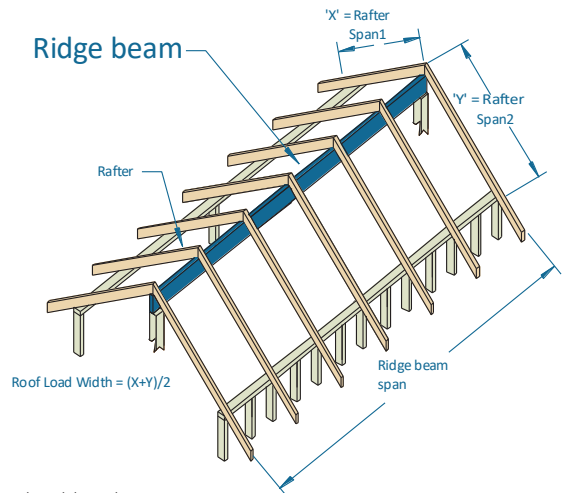
NOTES:

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



EXAMPLE:
 wind speed = N3
 sheet roof - 40 kg/m²
 beam span = 4500 mm
 X = 2000 mm Y = 3000 mm
 roof load width = $(X+Y)/2 = 2500$ mm



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) DxB (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 |

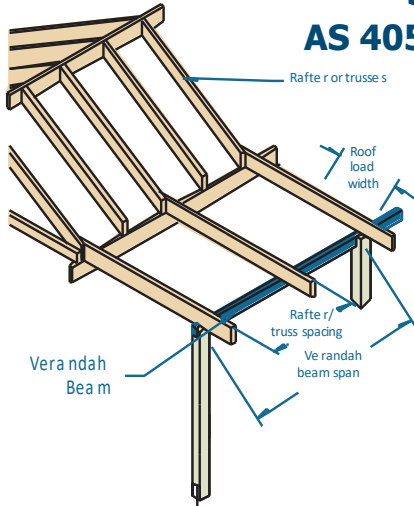
Ridge/Intermediate roof beam AS 4055 Classification N1, N2, N3 & N4 (cont'd)

| 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:

- D = member depth, B = member breadth, NS = not suitable.
- 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.
- rafter spacing up to 1200 mm
- 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) DxB (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) DxB (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

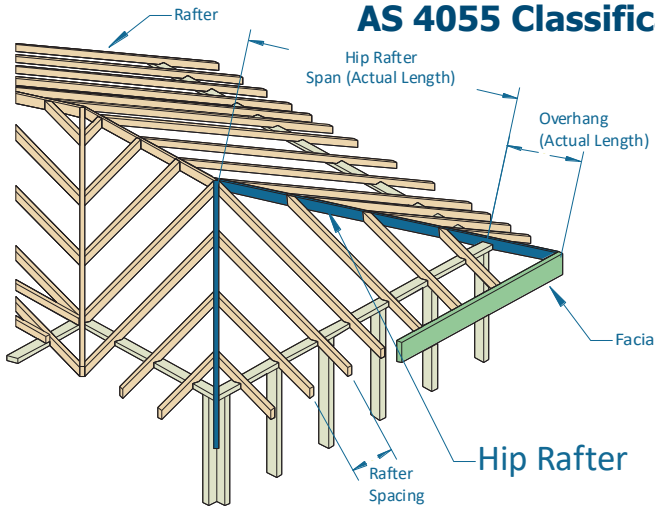
| Roof load width (mm) | | 1500 | | 3000 | | 4500 | | 6000 | | 7500 | |
|------------------------------------|-----------------------------------|--|-------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|---------------------|
| Rafter/truss spacing (mm) | | 600 | 1200 | 600 | 1200 | 600 | 1200 | 600 | 1200 | 600 | 1200 |
| Member size (GL13S) DxB (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) | 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 |

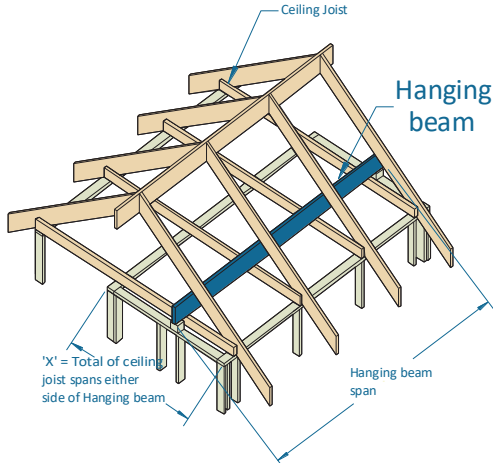
| Rafter spacing (mm) | | 600 | | 1200 | |
|---------------------|--|--|----------|------|----------|
| Member size (GL13S) | Roof & ceiling mass (kg/m ²) | Maximum recommended rafter span + overhang span (mm) | | | |
| | | Span | Overhang | Span | Overhang |
| 126x85 | 40 | 3200 | 600 | 3200 | 600 |
| | 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 |

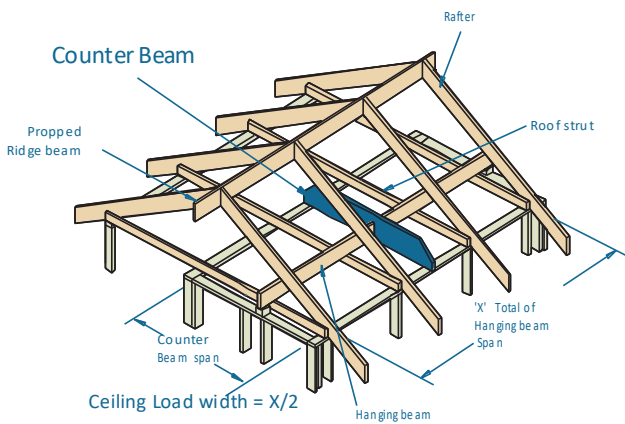
NOTES:

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

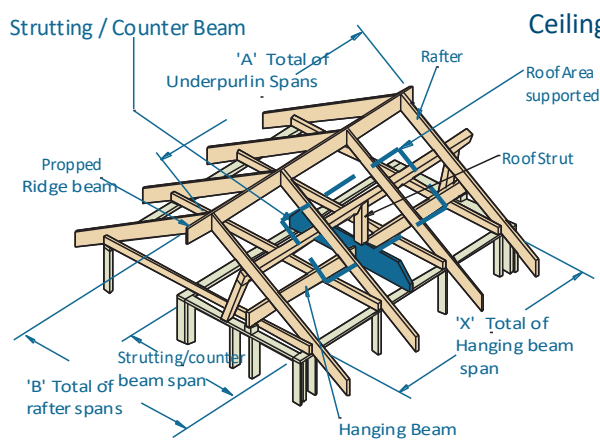
| Ceiling load width (mm) | 600 | 1800 | 2400 | 3000 | 3600 | 4200 | 4800 | 5400 | 6600 |
|------------------------------|--|------|------|------|------|------|------|------|------|
| Member size (GL13S) DxB (mm) | Maximum recommended Counter beam span (mm) | | | | | | | | |
| 126x55 | 4800 | 3600 | 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



Roof Area supported = $A/2 \times B/2$ Counter/Strutting beam spacing = $X/2$

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

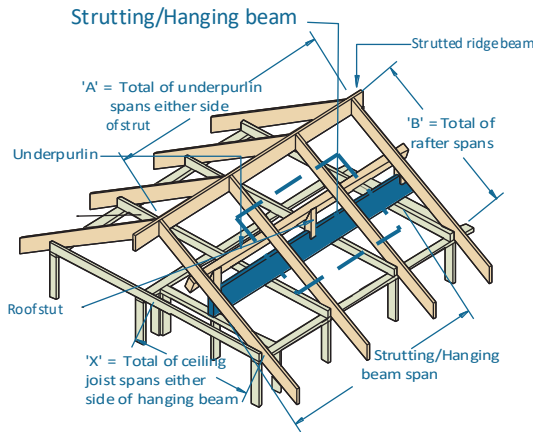
| Effective beam spacing (mm) | | 1800 | | | | | | 3600 | | | | | |
|---------------------------------------|-----------------------------------|--|------|------|------|------|------|------|------|------|------|------|------|
| Roof area supported (m ²) | | 2 | 4 | 6 | 8 | 10 | 12 | 2 | 4 | 6 | 8 | 10 | 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 |
| | 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 |
| 168x65 | 60 | 2300 | 1800 | 1500 | 1400 | 1100 | NS | 2000 | 1700 | 1500 | 1300 | 1100 | NS |
| | 20 | 3800 | 3500 | 3100 | 2900 | 2600 | 2200 | 3200 | 2900 | 2700 | 2600 | 2400 | 2100 |
| 210x65 | 60 | 3400 | 2700 | 2300 | 2100 | 1900 | 1700 | 2900 | 2500 | 2200 | 2000 | 1800 | 1700 |
| | 20 | 4500 | 4200 | 4000 | 3800 | 3600 | 3400 | 3900 | 3700 | 3600 | 3400 | 3200 | 3100 |
| 252x65 | 60 | 4100 | 3600 | 3200 | 2900 | 2600 | 2400 | 3700 | 3300 | 2900 | 2700 | 2500 | 2300 |
| | 20 | 5200 | 4900 | 4600 | 4400 | 4200 | 4100 | 4500 | 4300 | 4200 | 4000 | 3900 | 3800 |
| 294x65 | 60 | 4800 | 4300 | 3900 | 3600 | 3400 | 3100 | 4300 | 3900 | 3700 | 3400 | 3200 | 3000 |
| | 20 | 5900 | 5600 | 5300 | 5100 | 4900 | 4700 | 5100 | 4900 | 4700 | 4600 | 4400 | 4300 |
| 336x65 | 60 | 5500 | 4900 | 4500 | 4200 | 4000 | 3800 | 4800 | 4500 | 4200 | 4000 | 3800 | 3600 |
| | 20 | 6500 | 6200 | 5900 | 5700 | 5500 | 5300 | 5600 | 5400 | 5300 | 5100 | 5000 | 4800 |
| 378x65 | 60 | 6100 | 5500 | 5100 | 4800 | 4500 | 4300 | 5400 | 5000 | 4700 | 4500 | 4300 | 4100 |
| | 20 | 7100 | 6800 | 6500 | 6300 | 6000 | 5800 | 6100 | 5900 | 5800 | 5600 | 5500 | 5300 |
| 420x65 | 60 | 6700 | 6100 | 5700 | 5300 | 5000 | 4800 | 5900 | 5500 | 5200 | 5000 | 4800 | 4600 |
| | 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)

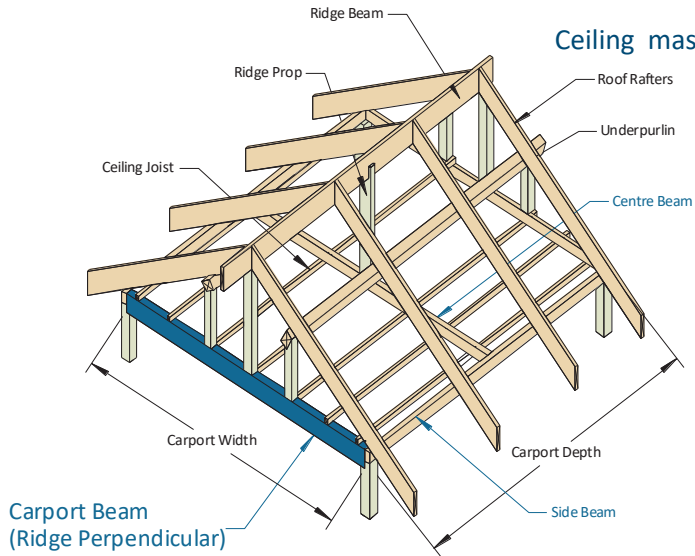
Ceiling mass - 20 kg/m²

| 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

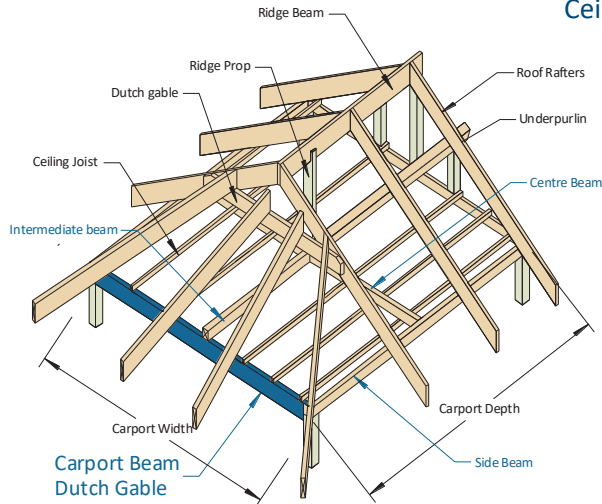
| Member size (GL13S) DxB (mm) | Roof mass (kg/m ²) | Carport Depth (side) | | | | | Member size (GL13S) DxB (mm) | Roof mass (kg/m ²) | Carport Depth (side) | | | | |
|------------------------------|--------------------------------|--|------|------|------|------|------------------------------|--------------------------------|--|------|------|------|------|
| | | 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

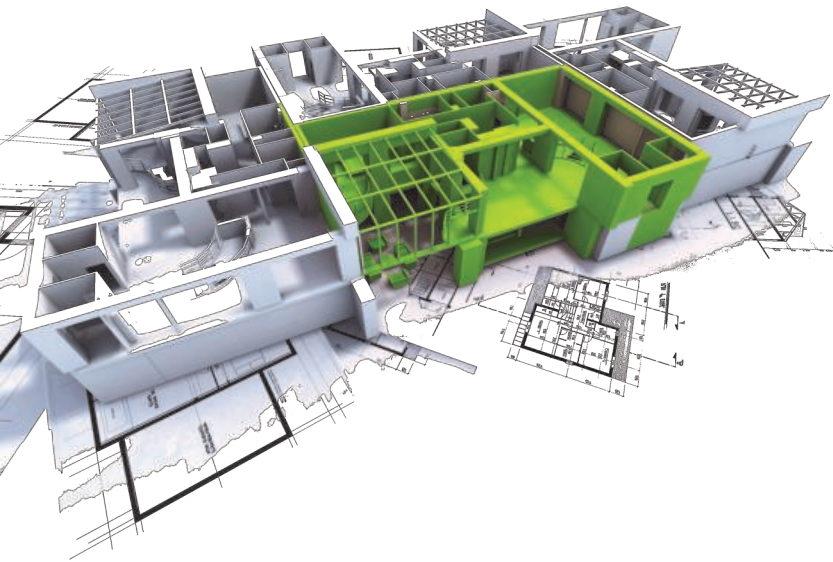
ADOPT:

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



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