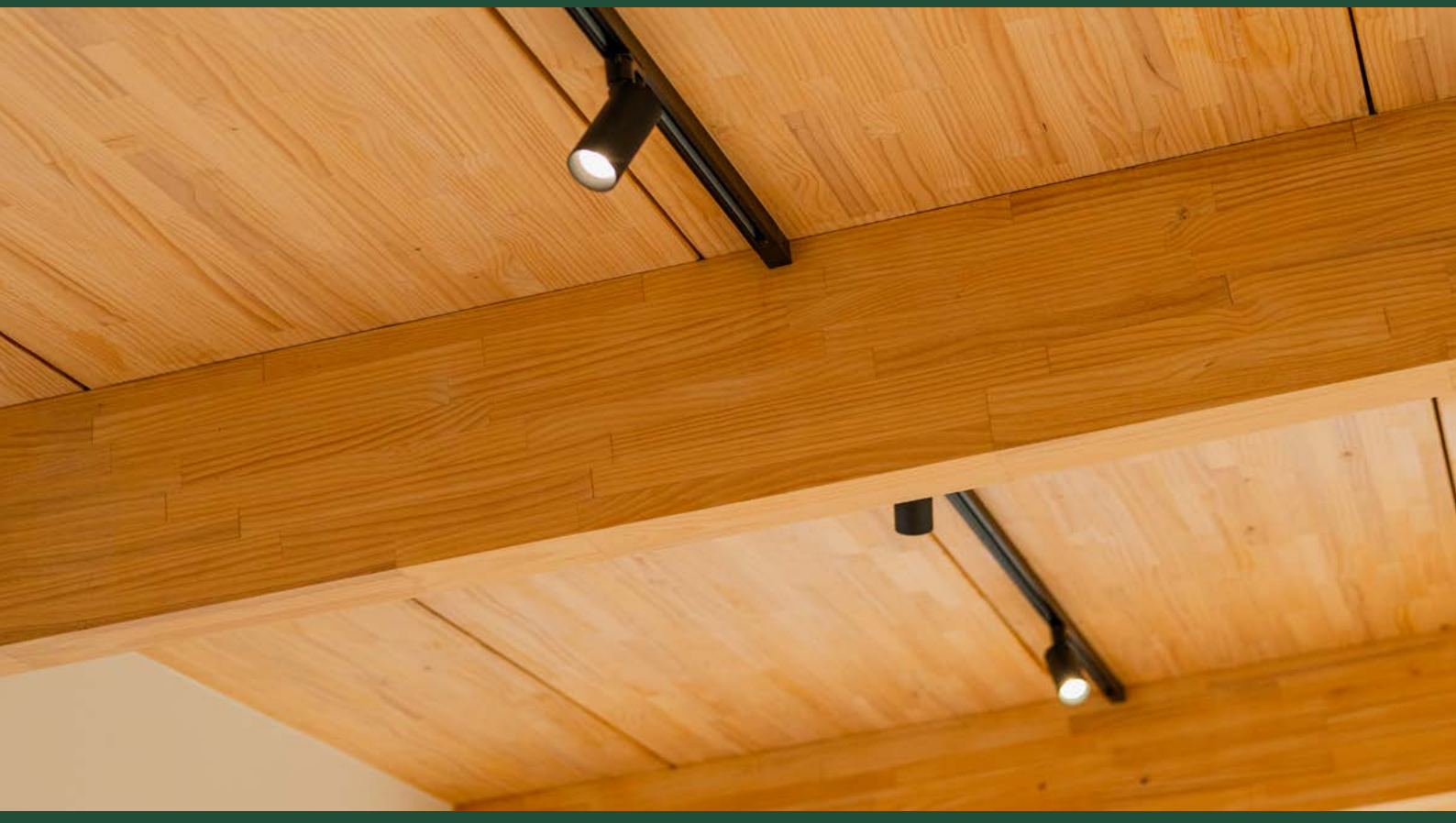
woodspan

GLULAM

TECHNICAL GUIDE



JOIN THE BUILDING REVOLUTION

FUTURE FOCUSED TIMBER

We've made it easy to construct a more sustainable building. Woodspan Glulam is a sustainable, locally grown and manufactured, and beautiful building product.

CHAT WITH US

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CONTENTS

This guide includes span tables for specifying Woodspan Glulam, and comparisons to effectively substitute in Woodspan Glulam where another product is specified.

This guide also includes resources and tips to aid the process from planning to install and beyond.

Certifications & approvals held by Taranakipine™

- Grade Right NZ Ltd Member Certificate Producer Grade Verified Structural Timber, valid until 31/03/2026.
- Grade Right NZ Ltd Member of Treat Right Programme, valid until 31/03/2026.
- Grade Right Ltd Member of Grade Right Verified Engineered Wood Products QA Programme, valid until 31/03/2026.

www.graderight.co.nz

- FSC® Single Chain of Custody and Controlled Wood NC-COC-005483, NC-CW-005483.
  *FSC® Certified products available on request

FSC-C006125

WOODSPAN GLULAM POSTS & BEAMS

Taking advantage of Taranakipine's low-cost manufacturing laminating production capability, Woodspan offers a range of competitively priced glue laminated posts and beams.

Utilising our standard range of glulam products will achieve a cost-effective design solution. We are also able to supply made-to-order alternative sizes. Beyond the Glulam itself, Woodspan also offers a full suite of off-site fabrication solutions including CNC finishing, coatings, connections, and delivery direct to site.

WHAT IS GLULAM?

New Zealand has a number of manufacturers who are creating products that fit within the mass timber category. At Woodspan, we manufacture PLT and Glulam (or GLT), but there are other forms of mass timber such as CLT and LVL. Check out our comparison below along with a description which explores the key differences between these products.

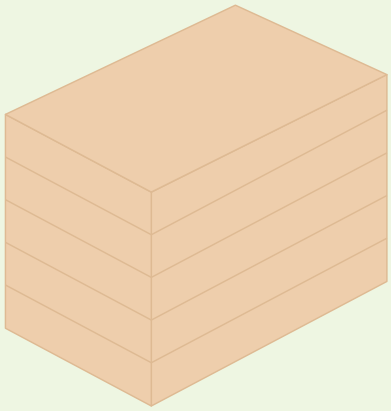
Glue Laminated Timber (GLT) or Glulam (GL)
Perfect for bearers, joists, posts, lintels, rafters, beams and balustrades – often with a visual grade finish.

Similar to PLT, Glulam has timber laminates which are glued together with the grain all running in the same direction. The laminates are typically 42mm thick.

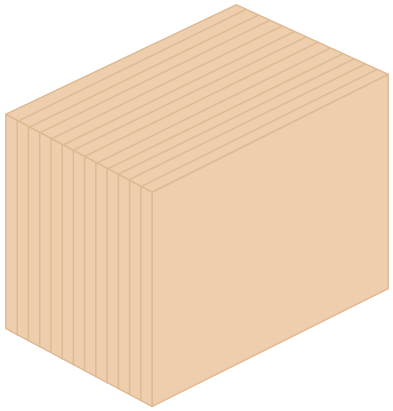
Laminated Veneer Lumber (LVL) is made by peeling wood veneers and laminating them together, resulting in a very consistent and strong building material. Typically used for columns, joists, lintels and rafters in non-visual applications.

Cross Laminated (CLT) Timber has laminates that are glued together in layers (usually 3, 5 or 7), with the grain in each layer running at right angles to the adjacent layer. Typically used for floors, walls and roofs.

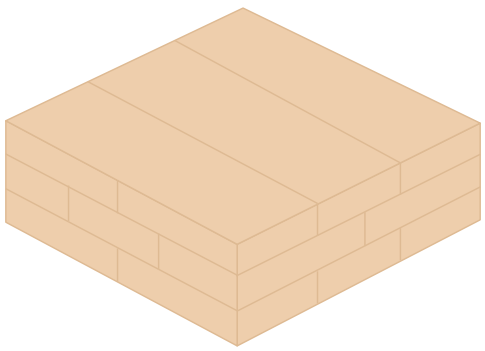
See page 42 on how Woodspan Glulam can be a substitute to other common products on the market.



Woodspan GLT/Glulam
Glue Laminated Timber



Competitor LVL
Laminated Veneer Lumber



Competitor CLT
Cross Laminated Timber

GLULAM BENEFITS

Aesthetics and Visual Appeal – Natural wood adds warmth and aesthetic appeal to a building structure. Timber naturally exhibits a range of hues, textures and grain patterns which creates interest and yet also provides a level of customisation with a wide range of coatings, stains and finishes available.

Carbon Sequestration and Sustainability – Timber possesses a negative Global Warming Potential (GWP), which means it actively sequesters carbon from the atmosphere. As trees grow, they absorb carbon dioxide (CO^2) during photosynthesis, locking it into their fibres. When timber is used in construction, this stored carbon remains trapped within the wood, effectively reducing the overall carbon footprint of the building. In contrast, steel beams contribute significantly more carbon emissions during their manufacturing process. Therefore, architects and builders increasingly favour timber over steel for its eco-friendly properties. In New Zealand, Radiata pine serves as an excellent example of a renewable material source, further supporting sustainable construction practices.

Lead Time – We hold a range of product blanks in stock at any given time, meaning we can generally cut to order and dispatch within a few days. However for larger or complex jobs products will need to be made to order which involves finger jointing, treating, laminating and planing. This means lead times need to be discussed early to ensure no delays onsite.

Shop Drawing & Offsite Manufacture – We offer a range of offsite manufacturing services allowing us to supply 'install ready' components.

See page 9 for more information on our shop drawing and CNC capabilities.

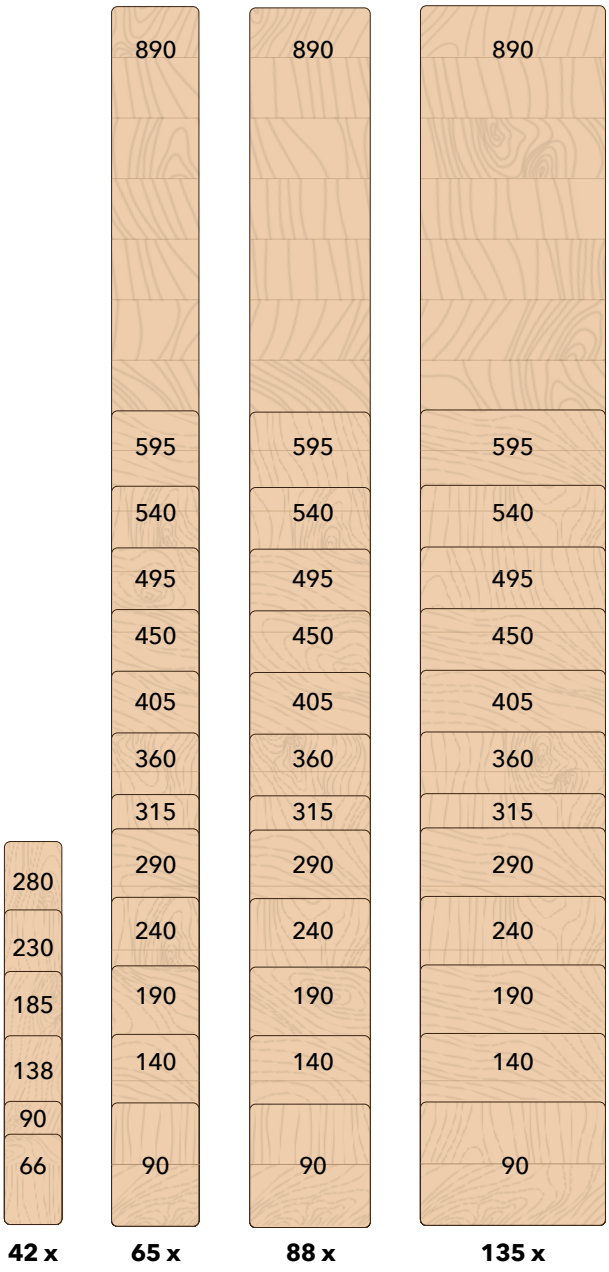
USES OF GLULAM

Glulam can be used internally and externally wherever a combination of strength, beauty and sustainability is desired.

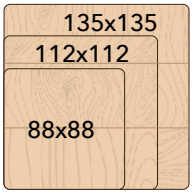
- **Beams** – Commonly used as load bearing elements in buildings. Glulam can provide structural support for roofs and floors. Strength and dimensional stability make glulam ideal for spanning long distances without compromising aesthetics.
- **Columns and Posts** – Glulam columns are vertical supports used in post and beam construction. They can be straight or tapered, adding visual interest to architectural designs. Additionally our range of H5 posts can be used in-ground.
- **Trusses** – Glulam can be manufactured into visually appealing trusses, with CNC processing allowing perfect fitting joints at complex angles.

PROFILES

Glulam Beams



H5 Posts



STANDARD PRODUCT RANGE

Posts		
Profiles Available (mm)		
88 x 88	112 x 112	135 x 135
*GL8, H5 MCA		

Beams			
Widths Available (mm)			
42 x*	65 x	88 x	135 x
Depths Available (mm)			
66			
90	90	90	90
138	140	140	140
185	190	190	190
230	240	240	240
280	290	290	290
*F7 Grade, H3.1, Pre-primed	315	315	315
	360	360	360
	405	405	405
	450	450	450
	495	495	495
	540	540	540
	595	595	595
	890	890	890

* 42mm profiles are Australian Grade F7 only, see Grades section page 6 for more info.

CUSTOM SIZES

We can produce any dimension from a minimum of 30mm thick, up to 140mm.

And to a maximum of 7200mm long and 890mm deep. However, it will be more cost effective to purchase our standard sizes.

LENGTHS AVAILABLE

Below is table of the available lengths for each of the treatment options:

	Lengths			
Treatment	**4.8m** (2.4m)	**5.4m** (2.7m)	**6.0m** (3.0m)	**7.2m** (3.6m)
H3.1 LOSP	✓	✓	✓	✓
H3.2 MCA	✓	✓	✓	
H5 MCA	✓	✓	✓	

TREATMENTS

All PLT Glulam products are preservative treated either using MCA (micronized copper azoles) or LOSP (light organic solvent preservatives), being a far more environmentally sustainable treatment compared to CCA (copper chrome arsenic). All preservative treatment to NZS 3640:2003.

We can supply untreated glulam on request, up to 7.2m.

The max length for H3.1 is also 7.2m

For treatments in H3.2 and H5 the max length is 6.0m due to the treatment tank size.

H5 is only available in specific post profiles.

All glulam is Finger-Jointed, see our technical spec www.woodspan.co.nz/resources/plt-grades

GRADES

GL8 & GL10

Our standard and most commonly stocked products are GL8. While we offer GL10 on request – to the profile sizes listed – we encourage designers to find the next appropriate Glulam size within the GL8 range instead. This is because it is typically more cost effective to pay for more timber in a GL8 size up, than specify a GL10 grade timber at a smaller profile.

All Glulam grades offered by Woodspan are manufactured in line with AS/NZS 1328.1:1998 Glued laminated structural timber Part 1: Performance requirements and minimum production requirements.

Australian Finger-Joint Grade F7 differs from a GL8, it has a lower MoE of 7,900 MPa, lower bending strength of 18 MPa, and lower tension, compression and shear values. Compared to SG8 it has a similar stiffness, and a higher strength rating - however cannot pass NZ certification as SG8.

FINISHES

As standard the glulam comes with a planer finish, with non-visual spec glulam having minor blemishes, machine damage and knots of the face of the members, while visual spec glulam will be free of knot holes and machine damage.

All glulam can be requested to have a temporary water proofing sealant applied in the factory.

On request we can supply glulam with a pre-primed paint finish, or a rough sawn finish which mimics a bandsaw cut on the faces.

FINISHING

If glulam members are to be used visually, consideration needs to be given to moisture protection, protection from construction and discolouration from contact with metals and weathering. It is highly likely visual surfaces will require some remediation after construction (i.e. sanding).

To avoid any further discolouration, marking or sun damage, Woodspan recommends all exposed glulam timber be finished with a protective coating system such as a stain, sealer, polyurethane, or oil.

PROPERTIES

Timber species: NZ grown Radiata pine

Maximum size: (finger jointed) 7200 x 890mm

Widths: 65mm, 88mm, 135mm

Grade: GL8, GL10 (on request)

Moisture: 14% +/- 2% (ex-factory)

Adhesive: Purbond clear polyurethane

Appearance: Visual & Non-Visual

Joint strength group: J5

Mass: (Average Density = 450kg/m^3)

Tolerance (ex-factory):

Width = +/- 3.0mm
Depth = +/- 1.0mm
Length = 0, +2.0mm

	Characteristic strengths [MPa]							
Glulam Grade	**Bending**	**Tension parallel to grain**	**Tension perpen-dicular to grain[1]**	**Shear in beam**	**Compression parallel to grain**	**Compression perpendicular to grain[2]**	**Characteristic density[3]** [kg/m^3]	**Elastic Moduli** (average)
	f'_b	f'_t	f'_{tp}	f'_s	f'_c	f'_p	ρ'	MoE
GL8	19	10	0.4	3.7	24	6.9	375	8,000
GL10	22	11	0.4	3.7	26	6.9	415	10,000

All Glulam grades offered by Woodspan are manufactured in line with AS/NZS 1328.1:1998 Glued laminated structural timber Part 1: Performance requirements and minimum production requirements and AS/NZS 1491:1996 – Finger Jointed structural timber.

Design in accordance with NZS3603 or NZS1720.1:2022. Do not use k6 when designing with NZS3603 as this is considered under AS/NZS 1328.1 [1]

Tables are created to the basis of NZS3604 to enable direct comparison to NZS 3604 designs. Vibrations were assessed to NZS 3604 as well as based on the deflection of 1kN point load, in accordance with recommendations of AS/ NZS 1170.0 as well as EC5 for increased requirements where requested by client.

The above properties exclude F7 Australian grade.

1 Tension perpendicular as per table ZZ2.1 of NZS AS 1720.1:2022 – characteristic properties for New Zealand verified timber. Woodspan has chosen to keep the value based on the conservative assumption of verified SG8 as feedstock.
2 Refer to NZS AS 1720.1:2022, table ZZ2.1 – characteristic properties for New Zealand verified timber, bearing perpendicular to grain for seasoned radiata pine shall be taken as f'p = 6.9 MPa and supersedes compression perpendicular to grain suggested in NZS 3603.
3 Based on densities for verified feedstock as per table ZZ2.1 of NZS AS 1720.1:2022 for connection designs in accordance with NZS AS 1720.1:2022 and detailed EYM methods.

CNC MACHINING

At Woodspan, our commitment to precision and efficiency drives our use of cutting-edge CNC technology. Specifically designed for PLT and glulam fabrication, our CNC setup ensures optimal results. Here's an in-depth look at our capabilities:

- **Hundegger Robot Drive:** Our CNC system features the Hundegger Robot Drive, a robust platform installed in 2019. Key components include:
  - **800mm Diameter 5-Axis Saw:** This precision saw delivers accurate cuts, whether we're shaping glulam beams or creating intricate details in PLT panels,
  - **6-Axis Robot Head:** The robot head accesses all six sides of the timber component without manual flipping. This seamless manoeuvrability significantly enhances production efficiency.
- **CAMBIUM Software:** Our CNC machine operates using CAMBIUM software, purpose-built by Hundegger. This software adheres to DFMA (Design for Manufacture & Assembly) principles, optimising material usage and minimising waste.

Customer Benefits:

- **Reduced On-Site Construction Time:** By fabricating components off-site, we streamline installation. Our install-ready pieces fit precisely, saving valuable construction hours.
- **Enhanced Component Quality:** The CNC precision ensures that our glulam beams and PLT panels meet exact specifications. Whether it's load-bearing members or architectural elements, accuracy is paramount.

Additional Considerations:

- **Time Savings:** While material costs may be slightly higher, the time saved during on-site installation offsets this. Install-ready components reduce overall labour.
- **Approval and Construction Drawings:** We meticulously follow architectural and structural plans to create precise approval drawings, incorporating feedback from designers. These drawings guide the final machining of components. We can also assist with coordination of mass timber shop drawings with other trades.

At Woodspan, our CNC-driven glulam production ensures excellence from design to installation.

PACKAGING

Glulam products are bulk wrapped in protective packaging including dunnage to limit forklift damage. The packaging is to ensure the surfaces are kept dry, clean and out of sunlight during transit.

If a building site is required to eliminate plastic packaging, let us know and we can supply Glulam un-wrapped and with higher dunnage protection.

Before the Glulam is wrapped we check the moisture content to ensure it leaves the factory with an Equilibrium Moisture Content (EMC) of 14% +/- 2%.

DELIVERY

We aim to only dispatch PLT and Glulam timber as it is required on site in time for installation. This is to reduce the risk of the timber sitting around compromised due to damage and moisture. Typically all glulam is sprayed with a temporary moisture resistant sealant to protect the timber from moisture ingress during transit and install, lasting 6 weeks. If immediate installation when delivered is not achievable please refer to our Moisture Management information for best practices to store long term, including reapplying a moisture resistant sealant.

HANDLING

Glulam should not be dragged along the ground, or dropped while handling, care must be taken with the surfaces especially when used as a finished visual member.

Avoid using chains, strops, or wires directly onto the glulam while unloading or moving around the site to install. It is highly likely visual surfaces will require some remediation after construction (i.e. sanding).

HEALTH & SAFETY

Woodspan endorses the use of best health & safety standards on building sites, taking all necessary steps to ensure your safety and the safety of others:

- Check weight of panels & members and the lifting capacity of workers or HIAB/Crane,
  - Estimated weight is calculated on 450kg per cube (m^3),
- Ensure adequate ventilation or mechanical dust extraction when cutting or drilling.
- Ensure the timber is well supported when cutting or drilling,
- Wear appropriate safety equipment, clothing, and footwear,
- Use all tools in accordance with relevant instruction manuals,
- Plan and monitor a safe approach for working at height; select and use the right equipment,
- Clear the work area of any obstructions before work starts.

For further information refer to:

- WorkSafe July 2018. Small Construction Sites, The Absolutely Essential Health and Safety Toolkit,
- WorkSafe December 2016. Health and Safety at Work, Quick Reference Guide.

These documents are available at www.worksafe.govt.nz

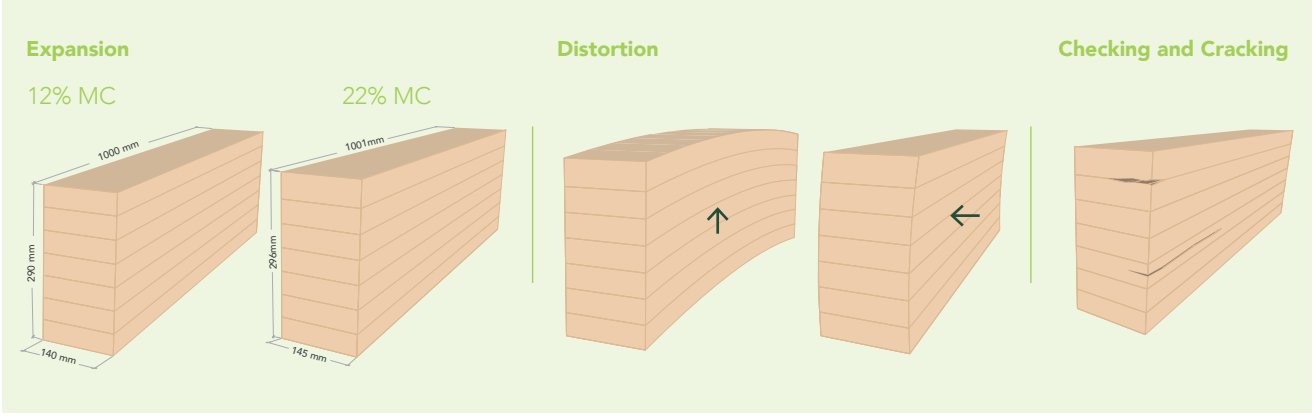
MOISTURE MANAGEMENT

Many moisture problems in mass timber buildings are associated with exposure during construction, limiting exposure to moisture is imperative, the key points are:

- Keep the glulam dry and clean until installation,
- Plan to close in; with any mass timber building the key to moisture management is to close the building in ASAP,
- Glulam should only be enclosed or lined once EMC is 14% +/- 2% or lower (NZBC E2/AS1 Clause 10.2),
- As standard practice we apply a temporary moisture sealant in the factory (that lasts 6 weeks) to help withstand moisture while the building is closed in, if it is unavoidable to have the timber exposed for longer – reapplying a moisture sealant is important,
- Once the glulam is cut or drilled, seal the open timber immediately,
- For any further questions please contact the Woodspan team.

Why Moisture Management is Important

- **Expansion.** Timber naturally absorbs water and expands when wet. Particularly with large mass timber components this movement can create headaches. Woodspan timber is kiln dried to 14% +/- 2% MC when it is machined to size. For every percentage point that this moisture content increases, width and depth of mass timber members could be expected to expand by 0.27% for 1% change in moisture content[9].
- **Distortion.** Although less prone to this than solid timber, engineered wood products can still change shape as the timber reacts to moisture. Bow, crook and cupping can all occur with variation in the moisture content within a piece of engineered wood.
- **Checking and Cracking.** Surface checking can occur as the fibres on the face of the timber contract as they dry out faster than the timber deeper within the component. Additionally, the ends of components are susceptible to cracks and splits as the end grain will absorb and release moisture faster than the rest of the timber.
- **Mould Growth.** Mould thrives in damp humid conditions. Although timber is treated with fungicide, surface dust and dirt can still provide compatible growing conditions for mould. It is important not to enclose wet timber with linings as the moisture will struggle to escape and continue to provide a damp environment for mould growth.
- **Surface Staining.** Water can leave marks on any timber product. Usually watermarks are only on the surface and a light sand will rectify.



Planning for Moisture Management

- **Build methodology.** One of the key benefits of utilising mass timber on a project is speed of construction. This thinking needs to be applied to all aspects of the project as the best possible way to mitigate the effects of moisture on mass timber is to get the project closed in as soon as possible. Or for exterior applications, get the finished coats of paint or stain on as soon as practicable. Plan to close in; with any mass timber building the key to moisture management is to close the building in ASAP. Avoid prolonged direct exposure to rain for more than 7 days. Any longer exposure should be dealt with by covering with breathable membrane of sd<0.4m to avoid sweating. Glulam should only be enclosed or lined once EMC is 18% or lower (NZBC E2/AS1 Clause 10.2).
- **Site Storage.** Ideally components should be installed as soon as they are delivered. If products must be stored onsite ensure they are up on dunnage and covered. Product left on the ground will absorb moisture.
- **During Construction.** Weekly inspections are necessary both visually and with moisture metre readings. Be sure to check that your moisture metre is calibrated and allow for the offset that the manufacturer recommends when testing treated timber. Typically the moisture metre will give a reading that is slightly too high for MCA treated timber and slightly too low for LOSP treated timber. It is always good practice to take multiple readings at different locations. Keep the glulam dry and clean until and throughout installation.
- **Weather Protection.** We recommend covering exposed components with waterproof tarps, wraps or membranes to prevent rainwater infiltration.
- **Waterproof Sealer.** Woodspan products are generally coated with a temporary waterproof sealant before they leave the factory. This provides short term protection for around 4-6 weeks and does not interfere with stains or polyurethanes. Contact us for more information regarding this sealant. Additional coats of sealant may be applied onsite for increased protection. Once the glulam is cut or drilled, seal the open timber immediately.

What to do if Mass Timber Gets Wet

- **Swift Action.** Address any moisture issues promptly to prevent further damage. Sweep away pooling water and ideally get the timber covered.
- **Drying Out.** Woodspan recommends allowing wet components to dry to 14% +/- 2% before enclosing them. It may be necessary to utilise dehumidifiers – particularly if floor panels have become very wet,
- It is recommended to avoid installing a high density of dowel connections or concentrated screw patterns with multiple washer heads (or similar) until the in-service equilibrium moisture content (EMC) stabilizes within ±5% of its expected value. Exceeding this threshold can lead to increased stress on the screws, potentially causing unnoticed ruptures.

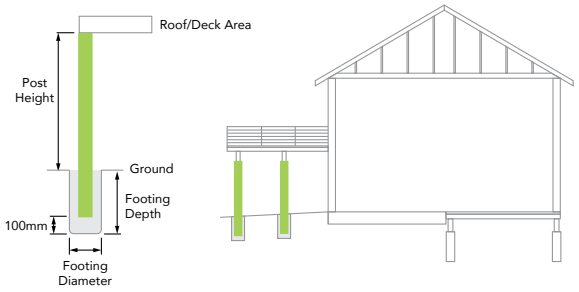
For a comprehensive guide on managing moisture with PLT & Glulam go to www.woodspan.co.nz/resources/moisture-management

SPAN TABLES

The following tables represent the span performance of Woodspan Glulam profiles in different applications. See Appendix A for tables of data that these calculations have been designed in accordance with, including; live and dead loads, deflections, vibrations, wind and snow.

Spans subject to design engineer approval.

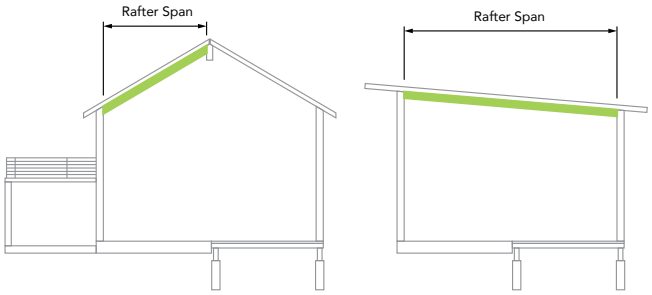
POST SPAN TABLE



			Non-Bracing (Verandah roof)				Non-Bracing (Deck)
			For Light Roofs with pitch angle less than 25 degrees		For Heavy Roofs with pitch angle less than 25 degrees		
		Wind load	Medium	Extra high	Medium	Extra high	
Post size (mm)	Grade (GL)	Post Height (mm)	Max supported roof area per post (m^2)				Max supported deck area per post (m^2)
88 x 88mm	GL8	1800	17.1	17.1	11.7	11.7	5.4
		2100	15.9	15.9	10.9	10.9	5
		2400	14.5	14.5	10	10	4.5
		2700	13.2	13.2	9.1	9.1	4.1
		3000	12	12	8.3	8.3	3.8
		3300	10.9	10.9	7.5	7.5	3.4
		3600	9.9	9.9	6.8	6.8	3.1
		3900	9.1	9.1	6.2	6.2	2.8
		4200	8.3	8.3	5.7	5.7	2.6
		4500	7.6	7.6	5.2	5.2	2.4
		4800	6.9	6.9	4.8	4.8	2.2
112 x 112mm	GL8	1800	29.4	29.4	20.2	20.2	9.2
		2100	28.5	28.5	19.6	19.6	9
		2400	27.2	27.2	18.7	18.7	8.6
		2700	25.6	25.6	17.6	17.6	8.1
		3000	23.9	23.9	16.4	16.4	7.5
		3300	22.2	22.2	15.2	15.2	7
		3600	20.6	20.6	14.2	14.2	6.5
		3900	19.1	19.1	13.1	13.1	6
		4200	17.7	17.7	12.2	12.2	5.6
		4500	16.5	16.5	11.3	11.3	5.2
		4800	15.3	15.3	10.5	10.5	4.8
135 x 135mm	GL8	1800	43.7	43.7	30	30	13.7
		2100	43	43	29.6	29.6	13.5
		2400	42	42	28.9	28.9	13.2
		2700	40.6	40.6	27.9	27.9	12.8
		3000	38.9	38.9	26.8	26.8	12.2
		3300	37	37	25.4	25.4	11.6
		3600	34.8	34.8	23.9	23.9	10.9
		3900	32.8	32.8	22.5	22.5	10.3
		4200	30.8	30.8	21.2	21.2	9.7
		4500	29	29	19.9	19.9	9.1
		4800	27.2	27.2	18.7	18.7	8.6

RAFTERS TABLE

GL8

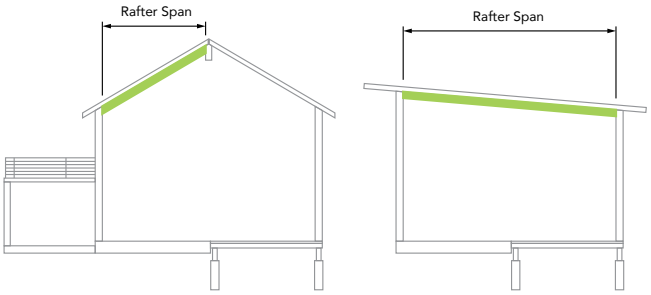


			FOR LIGHT ROOFS WITH PITCH ANGLE LESS THAN 25 DEGREES									
		Wind load	Medium					Extra High				
		Rafter spacing (mm)	600	750	900	1000	1200	600	750	900	1000	1200
Rafter Size			Max Rafter Span (mm)									
Width (mm)	Depth (mm)	Grade (GL)										
65	90	GL8	1790	1750	1700	1680	1630	1790	1740	1700	1680	1630
	140		3110	3000	2910	2860	2760	3110	3000	2910	2860	2760
	190		4430	4270	4120	4040	3890	4430	4270	4120	4040	3890
	240		5740	5510	5320	5210	5010	5740	5390	5040	4860	4540
	290		6880	6570	6320	6170	5930	6270	5790	5420	5230	4890
	315		7290	6960	6700	6550	6290	6460	5960	5580	5380	5040
	360		8000	7650	7370	7210	6930	6780	6250	5850	5640	5280
	405		8670	8310	8010	7840	7530	7080	6520	6110	5880	5510
	450		9330	8940	8630	8430	7850	7370	6780	6340	6110	5720
	495		9950	9550	9140	8760	8140	7640	7030	6570	6320	5920
	540		10550	10140	9480	9080	8430	7910	7260	6790	6530	6110
	595		11260	10720	9890	9450	8770	8220	7540	7040	6770	6330
	890		14670	13150	11950	11350	10430	9710	8850	8230	7900	7370
88	90	GL8	2030	1970	1920	1890	1840	2030	1970	1920	1890	1840
	140		3470	3350	3250	3190	3080	3470	3350	3250	3190	3080
	190		4900	4720	4560	4470	4310	4900	4720	4560	4470	4310
	240		6290	6050	5850	5730	5520	6290	6050	5850	5730	5520
	290		7300	6990	6730	6590	6340	7300	6990	6730	6590	6340
	315		7720	7400	7140	6990	6720	7720	7400	7140	6990	6720
	360		8460	8120	7840	7670	7390	8460	8120	7840	7680	7180
	405		9160	8800	8510	8330	8030	9160	8810	8340	8020	7510
	450		9830	9460	9150	8970	8650	9830	9280	8670	8340	7800
	495		10480	10090	9770	9580	9250	10480	9630	8980	8630	8070
	540		11090	10700	10360	10170	9820	10880	9960	9280	8920	8340
	595		11820	11410	11070	10860	10510	11330	10350	9640	9260	8640
	890		15290	14840	14450	14220	13800	13560	12260	11340	10860	10100
135	90	GL8	2400	2330	2270	2230	2170	2400	2330	2270	2230	2170
	140		4020	3880	3760	3690	3570	4020	3880	3760	3690	3570
	190		5570	5380	5210	5110	4930	5570	5380	5210	5110	4930
	240		6940	6660	6430	6290	6060	6940	6660	6430	6290	6060
	290		7880	7580	7330	7180	6930	7880	7580	7330	7180	6930
	315		8320	8020	7760	7610	7340	8320	8020	7760	7610	7340
	360		9090	8770	8490	8330	8050	9090	8770	8490	8330	8050
	405		9810	9480	9200	9030	8740	9810	9480	9200	9030	8740
	450		10510	10160	9870	9700	9390	10510	10160	9870	9700	9390
	495		11170	10820	10510	10330	10020	11170	10820	10510	10330	10020
	540		11800	11440	11130	10950	10620	11800	11440	11130	10950	10620
	595		12540	12180	11860	11670	11330	12540	12180	11860	11670	11330
	890		16040	15660	15330	15120	14750	16040	15660	15330	15120	14750

Woodspan Max Beam length 7200mm.

RAFTERS TABLE

GL10

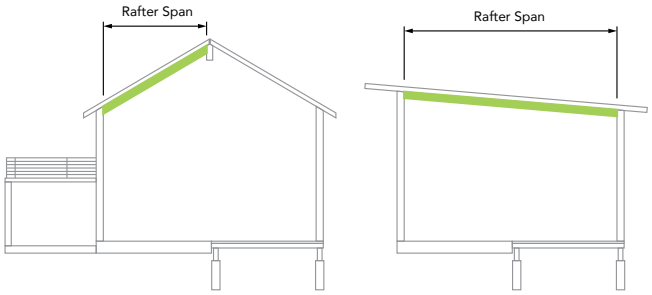


			FOR LIGHT ROOFS WITH PITCH ANGLE LESS THAN 25 DEGREES									
		Wind load	Medium					Extra High				
		Rafter spacing (mm)	600	750	900	1000	1200	600	750	900	1000	1200
Rafter Size			Max Rafter Span (mm)									
Width (mm)	Depth (mm)	Grade (GL)										
65	90	GL10	1970	1920	1870	1840	1790	1970	1920	1870	1840	1790
	140		3400	3280	3180	3120	3010	3400	3280	3180	3120	3010
	190		4840	4650	4490	4400	4230	4840	4650	4490	4400	4230
	240		6250	6000	5790	5660	5440	6150	5670	5310	5110	4790
	290		7270	6940	6680	6530	6270	6590	6080	5700	5490	5150
	315		7710	7360	7090	6930	6660	6780	6260	5870	5650	5300
	360		8460	8090	7790	7620	7330	7120	6560	6150	5920	5550
	405		9170	8790	8470	8290	7920	7440	6850	6410	6180	5790
	450		9860	9450	9120	8850	8240	7740	7120	6670	6420	6010
	495		10520	10100	9600	9200	8560	8030	7380	6900	6640	6220
	540		11160	10720	9960	9540	8860	8310	7630	7130	6860	6420
	595		11910	11260	10390	9930	9210	8630	7920	7400	7110	6660
	890		15520	13820	12560	11920	10960	10200	9300	8650	8300	7750
88	90	GL10	2230	2170	2110	2080	2010	2230	2170	2110	2080	2010
	140		3800	3660	3550	3480	3360	3800	3660	3550	3480	3360
	190		5340	5140	4970	4860	4680	5340	5140	4970	4860	4680
	240		6770	6470	6230	6090	5850	6770	6470	6230	6090	5850
	290		7720	7390	7120	6970	6700	7720	7390	7120	6970	6700
	315		8170	7830	7550	7390	7110	8170	7830	7550	7390	7110
	360		8950	8590	8290	8120	7820	8950	8590	8290	8080	7560
	405		9690	9310	9000	8810	8500	9690	9310	8760	8430	7890
	450		10400	10000	9670	9480	9150	10400	9750	9110	8760	8190
	495		11080	10670	10330	10130	9780	11040	10120	9440	9070	8480
	540		11730	11310	10960	10750	10390	11440	10460	9750	9370	8760
	595		12500	12070	11700	11490	11110	11900	10870	10120	9720	9080
	890		16160	15690	15280	15030	14600	14240	12880	11920	11410	10610
135	90	GL10	2640	2560	2490	2440	2370	2640	2560	2490	2440	2370
	140		4380	4230	4100	4020	3880	4380	4230	4100	4020	3880
	190		6060	5840	5660	5550	5350	6060	5840	5660	5550	5350
	240		7330	7040	6800	6660	6410	7330	7040	6800	6660	6410
	290		8330	8010	7750	7590	7330	8330	8010	7750	7590	7330
	315		8800	8480	8200	8040	7760	8800	8480	8200	8040	7760
	360		9610	9270	8980	8810	8520	9610	9270	8980	8810	8520
	405		10380	10030	9730	9550	9240	10380	10030	9730	9550	9240
	450		11110	10750	10440	10250	9930	11110	10750	10440	10250	9930
	495		11810	11440	11120	10930	10590	11810	11440	11120	10930	10590
	540		12480	12100	11770	11580	11230	12480	12100	11770	11580	11230
	595		13260	12880	12540	12340	11980	13260	12880	12540	12340	11980
	890		16960	16560	16210	15990	15600	16960	16560	16210	15990	15600

Woodspan Max Beam length 7200mm.

RAFTERS TABLE

GL8

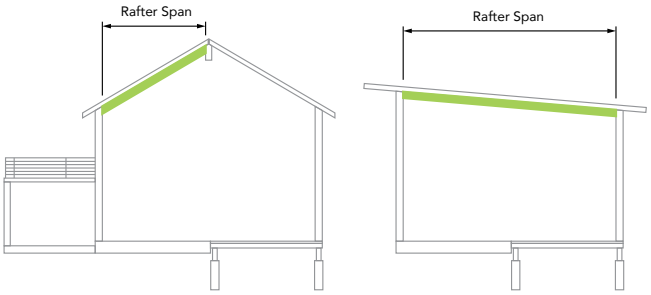


			FOR HEAVY ROOFS WITH PITCH ANGLE LESS THAN 25 DEGREES									
		Wind load	Medium					Extra High				
		Rafter spacing (mm)	600	750	900	1000	1200	600	750	900	1000	1200
Rafter Size			Max Rafter Span (mm)									
Width (mm)	Depth (mm)	Grade (GL)										
65	90	GL8	1850	1720	1620	1570	1480	1850	1720	1620	1570	1480
	140		2860	2670	2520	2430	2290	2860	2670	2520	2430	2290
	190		3850	3600	3400	3290	3100	3850	3600	3400	3290	3100
	240		4830	4520	4270	4130	3900	4830	4520	4270	4130	3900
	290		5800	5430	5140	4970	4700	5800	5430	5140	4970	4700
	315		6280	5880	5570	5390	5100	6280	5880	5570	5390	5100
	360		7130	6680	6330	6140	5800	7130	6600	6180	5950	5580
	405		7850	7480	7090	6880	6510	7500	6900	6450	6210	5820
	450		8450	8070	7760	7580	7210	7810	7180	6710	6450	6040
	495		9040	8640	8310	8120	7800	8110	7440	6950	6690	6260
	540		9610	9180	8840	8640	8310	8390	7690	7180	6910	6460
	595		10280	9830	9470	9260	8910	8730	7990	7450	7160	6700
	890		13540	13010	12570	12310	11860	10380	9430	8750	8390	7810
88	90	GL8	2040	1900	1790	1730	1630	2040	1900	1790	1730	1630
	140		3140	2930	2770	2680	2530	3140	2930	2770	2680	2530
	190		4220	3950	3730	3610	3410	4220	3950	3730	3610	3410
	240		5280	4950	4690	4540	4290	5280	4950	4690	4540	4290
	290		6320	5930	5630	5450	5160	6320	5930	5630	5450	5160
	315		6840	6420	6090	5910	5590	6840	6420	6090	5910	5590
	360		7690	7290	6920	6710	6360	7690	7290	6920	6710	6360
	405		8340	7980	7680	7510	7130	8340	7980	7680	7510	7130
	450		8980	8590	8280	8100	7780	8980	8590	8280	8100	7780
	495		9590	9190	8850	8660	8340	9590	9190	8850	8660	8340
	540		10180	9760	9410	9210	8870	10180	9760	9410	9210	8820
	595		10880	10440	10070	9860	9500	10880	10440	10070	9810	9150
	890		14230	13720	13300	13040	12600	14230	13120	12100	11570	10730
135	90	GL8	2330	2170	2050	1990	1870	2330	2170	2050	1990	1870
	140		3570	3340	3160	3060	2890	3570	3340	3160	3060	2890
	190		4770	4480	4250	4120	3900	4770	4480	4250	4120	3900
	240		5950	5600	5320	5160	4890	5950	5600	5320	5160	4890
	290		7090	6690	6360	6180	5860	7090	6690	6360	6180	5860
	315		7610	7230	6880	6680	6340	7610	7230	6880	6680	6340
	360		8340	8000	7720	7560	7200	8340	8000	7720	7560	7200
	405		9040	8680	8380	8210	7910	9040	8680	8380	8210	7910
	450		9710	9330	9020	8840	8520	9710	9330	9020	8840	8520
	495		10350	9960	9630	9440	9110	10350	9960	9630	9440	9110
	540		10960	10560	10220	10020	9680	10960	10560	10220	10020	9680
	595		11680	11270	10920	10710	10350	11680	11270	10920	10710	10350
	890		15140	14680	14280	14050	13630	15140	14680	14280	14050	13630

Woodspan Max Beam length 7200mm.

RAFTERS TABLE

GL10

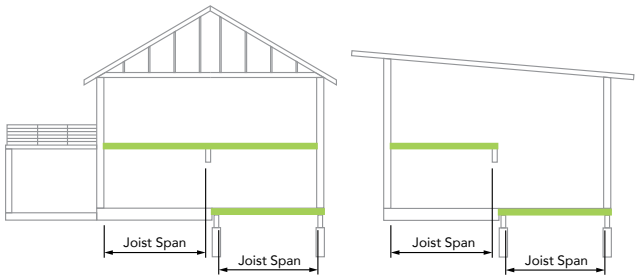


			FOR HEAVY ROOFS WITH PITCH ANGLE LESS THAN 25 DEGREES									
		Wind load	Medium					Extra High				
		Rafter spacing (mm)	600	750	900	1000	1200	600	750	900	1000	1200
Rafter Size			Max Rafter Span (mm)									
Width (mm)	Depth (mm)	Grade (GL)										
65	90	GL10	1990	1860	1750	1690	1590	1990	1860	1750	1690	1590
	140		3080	2870	2710	2620	2470	3080	2870	2710	2620	2470
	190		4150	3870	3660	3540	3340	4150	3870	3660	3540	3340
	240		5210	4870	4600	4450	4210	5210	4870	4600	4450	4210
	290		6240	5850	5530	5360	5060	6240	5850	5530	5360	5060
	315		6760	6330	6000	5810	5490	6760	6330	6000	5810	5490
	360		7630	7200	6820	6610	6250	7540	6940	6500	6250	5860
	405		8300	7910	7610	7410	7010	7880	7250	6780	6520	6110
	450		8940	8530	8200	8020	7700	8200	7540	7050	6780	6350
	495		9560	9130	8780	8590	8250	8520	7820	7300	7020	6570
	540		10160	9710	9350	9140	8780	8820	8080	7550	7260	6790
	595		10870	10400	10020	9800	9420	9170	8400	7830	7530	7040
	890		14320	13750	13290	13010	12550	10900	9900	9190	8810	8210
88	90	GL10	2200	2050	1930	1870	1760	2200	2050	1930	1870	1760
	140		3380	3160	2980	2890	2720	3380	3160	2980	2890	2720
	190		4550	4250	4020	3890	3680	4550	4250	4020	3890	3680
	240		5690	5330	5050	4890	4620	5690	5330	5050	4890	4620
	290		6810	6390	6060	5870	5560	6810	6390	6060	5870	5560
	315		7360	6920	6560	6360	6020	7360	6920	6560	6360	6020
	360		8130	7760	7450	7230	6850	8130	7760	7450	7230	6850
	405		8820	8440	8120	7940	7630	8820	8440	8120	7940	7630
	450		9490	9090	8750	8560	8230	9490	9090	8750	8560	8230
	495		10140	9710	9360	9160	8810	10140	9710	9360	9160	8810
	540		10760	10320	9950	9740	9380	10760	10320	9950	9740	9270
	595		11500	11040	10650	10430	10050	11500	11040	10650	10310	9610
	890		15050	14510	14060	13790	13330	15050	13780	12710	12150	11280
135	90	GL10	2510	2340	2210	2140	2020	2510	2340	2210	2140	2020
	140		3840	3600	3410	3300	3120	3840	3600	3410	3300	3120
	190		5140	4830	4580	4440	4200	5140	4830	4580	4440	4200
	240		6410	6030	5730	5550	5260	6410	6030	5730	5550	5260
	290		7600	7200	6850	6650	6310	7600	7200	6850	6650	6310
	315		8050	7710	7410	7200	6830	8050	7710	7410	7200	6830
	360		8820	8460	8160	7990	7690	8820	8460	8160	7990	7690
	405		9560	9180	8860	8680	8360	9560	9180	8860	8680	8360
	450		10260	9870	9540	9340	9010	10260	9870	9540	9340	9010
	495		10940	10530	10180	9980	9630	10940	10530	10180	9980	9630
	540		11590	11160	10810	10600	10230	11590	11160	10810	10600	10230
	595		12350	11920	11550	11330	10950	12350	11920	11550	11330	10950
	890		16000	15520	15100	14850	14410	16000	15520	15100	14850	14410

Woodspan Max Beam length 7200mm.

MID FLOOR JOIST SPAN TABLE

GL8

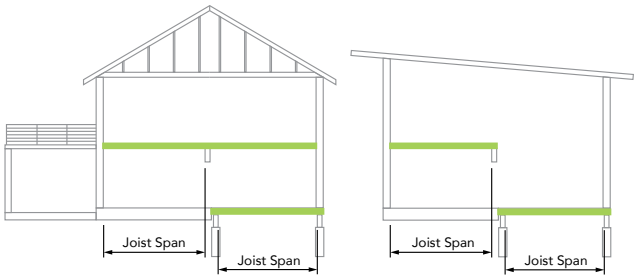


			ASNZS1170 VIBRATION - LIMITED TO 1MM DEFLECTION UNDER 0.5KN POINT LOAD									
		Super Imposed Dead Load	SDL = 0.4kPa					SDL = 1.2kPa				
		Joist Spacing (mm)	400	450	600	800	1000	400	450	600	800	1000
Joist Beam Size			Max Joist Span (mm)									
Width (mm)	Depth (mm)	Grade (GL)										
65	90	GL8	1440	1440	1440	1440	1440	1440	1440	1440	1400	1300
	140		2250	2250	2250	2250	2250	2250	2250	2250	2170	2020
	190		3050	3050	3050	3050	3050	3050	3050	3050	2930	2730
	240		3850	3850	3850	3850	3850	3850	3850	3850	3700	3440
	290		4660	4660	4660	4660	4660	4660	4660	4660	4450	4150
	315		5060	5060	5060	5060	5060	5060	5060	5060	4830	4500
	360		5780	5780	5780	5780	5780	5780	5780	5780	5500	5130
	405		6510	6510	6510	6510	6510	6510	6510	6510	6170	5760
	450		7230	7230	7230	7230	7230	7230	7230	7230	6840	6390
	495		7960	7960	7960	7960	7960	7960	7960	7960	7510	7010
	540		8680	8680	8680	8680	8680	8680	8680	8680	8160	7630
	595		9560	9560	9560	9560	9560	9560	9560	9560	8970	8390
	890		14310	14310	14310	14310	14310	14310	14310	14260	13180	12360
88	90	GL8	1600	1600	1600	1600	1600	1600	1600	1600	1540	1430
	140		2490	2490	2490	2490	2490	2490	2490	2490	2390	2230
	190		3370	3370	3370	3370	3370	3370	3370	3370	3230	3010
	240		4260	4260	4260	4260	4260	4260	4260	4260	4070	3790
	290		5150	5150	5150	5150	5150	5150	5150	5150	4890	4570
	315		5600	5600	5600	5600	5600	5600	5600	5600	5310	4950
	360		6400	6400	6400	6400	6400	6400	6400	6400	6040	5640
	405		7200	7200	7200	7200	7200	7200	7200	7200	6770	6330
	450		8000	8000	8000	8000	8000	8000	8000	8000	7490	7010
	495		8800	8800	8800	8800	8800	8800	8800	8800	8210	7690
	540		9600	9600	9600	9600	9600	9600	9600	9600	8930	8360
	595		10580	10580	10580	10580	10580	10580	10580	10580	9790	9180
	890		15830	15830	15830	15830	15720	15830	15830	15430	14320	13480
135	90	GL8	1840	1840	1840	1840	1840	1840	1840	1840	1770	1650
	140		2870	2870	2870	2870	2870	2870	2870	2870	2740	2550
	190		3890	3890	3890	3890	3890	3890	3890	3890	3700	3450
	240		4920	4920	4920	4920	4920	4920	4920	4920	4640	4330
	290		5940	5940	5940	5940	5940	5940	5940	5940	5570	5210
	315		6460	6460	6460	6460	6460	6460	6460	6460	6030	5650
	360		7380	7380	7380	7380	7380	7380	7380	7380	6860	6420
	405		8300	8300	8300	8300	8300	8300	8300	8300	7670	7190
	450		9230	9230	9230	9230	9230	9230	9230	9170	8480	7960
	495		10150	10150	10150	10150	10150	10150	10150	10020	9280	8710
	540		11080	11080	11080	11080	11070	11080	11080	10860	10070	9470
	595		12200	12200	12200	12200	12100	12200	12200	11870	11020	10370
	890		18260	18260	18260	18170	17350	18260	18120	17060	15970	15110

Woodspan Max Beam length 7200mm. * Assumed 1kN point load shared over minimum of 2 joists.

MID FLOOR JOIST SPAN TABLE

GL10

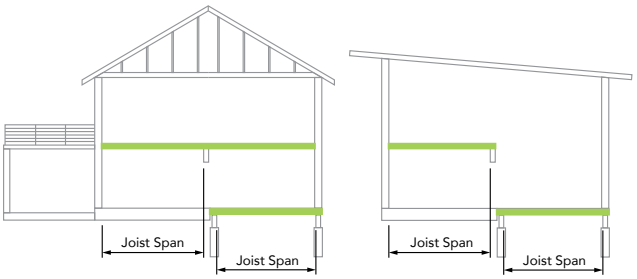


			ASNZS1170 VIBRATION - LIMITED TO 1MM DEFLECTION UNDER 0.5KN POINT LOAD*									
		Super Imposed Dead Load	SDL = 0.4kPa					SDL = 1.2kPa				
		Joist Spacing (mm)	400	450	600	800	1000	400	450	600	800	1000
Joist Beam Size			Max Joist Span (mm)									
Width (mm)	Depth (mm)	Grade (GL)										
65	90	GL10	1550	1550	1550	1550	1550	1550	1550	1550	1510	1400
	140		2420	2420	2420	2420	2420	2420	2420	2420	2340	2170
	190		3290	3290	3290	3290	3290	3290	3290	3290	3160	2940
	240		4150	4150	4150	4150	4150	4150	4150	4150	3980	3710
	290		5020	5020	5020	5020	5020	5020	5020	5020	4800	4470
	315		5450	5450	5450	5450	5450	5450	5450	5450	5200	4850
	360		6230	6230	6230	6230	6230	6230	6230	6230	5930	5530
	405		7010	7010	7010	7010	7010	7010	7010	7010	6650	6210
	450		7790	7790	7790	7790	7790	7790	7790	7790	7370	6880
	495		8570	8570	8570	8570	8570	8570	8570	8570	8080	7550
	540		9350	9350	9350	9350	9350	9350	9350	9350	8800	8220
	595		10300	10300	10300	10300	10300	10300	10300	10300	9660	9030
	890		15410	15410	15410	15410	15410	15410	15410	15360	14200	13320
88	90	GL10	1720	1720	1720	1720	1720	1720	1720	1720	1660	1550
	140		2680	2680	2680	2680	2680	2680	2680	2680	2580	2400
	190		3640	3640	3640	3640	3640	3640	3640	3640	3480	3240
	240		4590	4590	4590	4590	4590	4590	4590	4590	4380	4080
	290		5550	5550	5550	5550	5550	5550	5550	5550	5270	4920
	315		6030	6030	6030	6030	6030	6030	6030	6030	5720	5330
	360		6890	6890	6890	6890	6890	6890	6890	6890	6510	6080
	405		7760	7760	7760	7760	7760	7760	7760	7760	7290	6820
	450		8620	8620	8620	8620	8620	8620	8620	8620	8070	7550
	495		9480	9480	9480	9480	9480	9480	9480	9480	8850	8280
	540		10340	10340	10340	10340	10340	10340	10340	10340	9620	9010
	595		11400	11400	11400	11400	11400	11400	11400	11400	10550	9890
	890		17050	17050	17050	17050	16940	17050	17050	16620	15430	14520
135	90	GL10	1980	1980	1980	1980	1980	1980	1980	1980	1910	1780
	140		3090	3090	3090	3090	3090	3090	3090	3090	2950	2750
	190		4190	4190	4190	4190	4190	4190	4190	4190	3980	3710
	240		5300	5300	5300	5300	5300	5300	5300	5300	5000	4670
	290		6400	6400	6400	6400	6400	6400	6400	6400	6000	5610
	315		6960	6960	6960	6960	6960	6960	6960	6960	6500	6080
	360		7950	7950	7950	7950	7950	7950	7950	7950	7380	6920
	405		8950	8950	8950	8950	8950	8950	8950	8950	8260	7750
	450		9940	9940	9940	9940	9940	9940	9940	9880	9130	8570
	495		10940	10940	10940	10940	10940	10940	10940	10790	9990	9390
	540		11930	11930	11930	11930	11920	11930	11930	11700	10840	10200
	595		13150	13150	13150	13150	13030	13150	13150	12790	11870	11180
	890		19670	19670	19670	19570	18690	19670	19520	18380	17200	16270

Woodspan Max Beam length 7200mm. * Assumed 1kN point load shared over minimum of 2 joists.

MID FLOOR JOIST SPAN TABLE

GL8

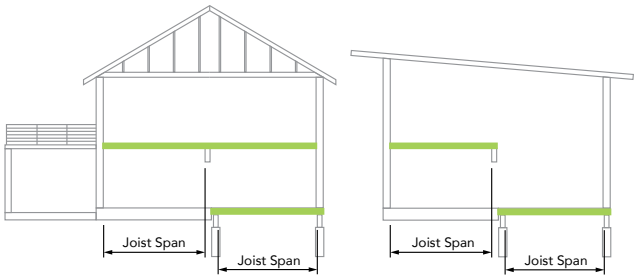


			3604 VIBRATION - FREQUENCY > 12 HZ									
		Super Imposed Dead Load	SDL = 0.4kPa					SDL = 1.2kPa				
		Joist spacing (mm)	400	450	600	800	1000	400	450	600	800	1000
Joist Beam Size			Max Joist Span (mm)									
Width (mm)	Depth (mm)	Grade (GL)										
65	90	GL8	2110	2030	1860	1690	1570	1750	1690	1540	1400	1300
	140		3150	3080	2870	2620	2440	2480	2420	2260	2110	2000
	190		3890	3810	3600	3390	3230	3100	3020	2830	2640	2510
	240		4560	4470	4230	4000	3820	3670	3580	3350	3140	2980
	290		5170	5070	4820	4570	4360	4200	4100	3850	3600	3420
	315		5460	5360	5100	4840	4630	4460	4350	4080	3830	3640
	360		5960	5860	5590	5300	5080	4900	4780	4500	4220	4010
	405		6440	6330	6050	5750	5520	5320	5200	4890	4590	4370
	450		6880	6770	6480	6180	5930	5730	5600	5270	4960	4720
	495		7310	7200	6900	6580	6330	6120	5980	5640	5310	5050
	540		7720	7610	7300	6980	6720	6500	6350	6000	5650	5380
	595		8200	8080	7780	7440	7170	6940	6790	6420	6050	5770
	890		10470	10350	10030	9670	9370	9100	8930	8490	8040	7690
88	90	GL8	2320	2240	2040	1870	1740	1930	1860	1690	1540	1430
	140		3340	3260	3090	2880	2690	2660	2590	2420	2270	2150
	190		4110	4020	3820	3610	3440	3310	3230	3030	2840	2690
	240		4790	4700	4480	4250	4060	3920	3820	3590	3360	3200
	290		5420	5330	5090	4840	4640	4470	4370	4110	3860	3670
	315		5720	5620	5380	5120	4910	4740	4630	4360	4100	3900
	360		6220	6130	5870	5600	5380	5200	5080	4800	4510	4290
	405		6700	6600	6340	6060	5830	5640	5520	5210	4910	4680
	450		7150	7050	6780	6500	6260	6060	5930	5610	5290	5040
	495		7580	7480	7210	6920	6670	6470	6330	6000	5660	5400
	540		8000	7890	7620	7320	7070	6860	6720	6370	6020	5740
	595		8480	8370	8100	7790	7540	7320	7170	6810	6440	6150
	890		10740	10640	10360	10050	9770	9530	9370	8950	8510	8160
135	90	GL8	2640	2550	2330	2140	1990	2130	2070	1940	1770	1650
	140		3600	3530	3350	3170	3030	2920	2850	2670	2500	2380
	190		4390	4310	4120	3920	3760	3620	3540	3330	3130	2970
	240		5100	5020	4810	4590	4410	4270	4170	3930	3700	3520
	290		5730	5650	5440	5210	5020	4860	4750	4490	4240	4040
	315		6030	5950	5730	5500	5300	5140	5030	4760	4490	4280
	360		6540	6460	6240	6000	5800	5620	5510	5220	4940	4710
	405		7020	6940	6720	6470	6260	6080	5960	5670	5360	5120
	450		7480	7390	7170	6920	6700	6520	6400	6090	5770	5520
	495		7910	7830	7600	7350	7130	6940	6810	6490	6160	5900
	540		8320	8240	8010	7760	7540	7350	7220	6890	6540	6270
	595		8800	8720	8500	8240	8010	7820	7690	7350	6990	6700
	890		11050	10980	10760	10500	10280	10080	9930	9560	9160	8830

Woodspan Max Beam length 7200mm.

MID FLOOR JOIST SPAN TABLE

GL10

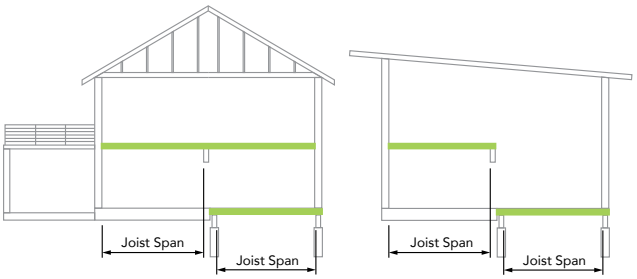


			3604 VIBRATION - FREQUENCY > 12 HZ									
		Super Imposed Dead Load	SDL = 0.4kPa					SDL = 1.2kPa				
		Joist Spacing (mm)	400	450	600	800	1000	400	450	600	800	1000
Joist Beam Size			Max Joist Span (mm)									
Width (mm)	Depth (mm)	Grade (GL)										
65	90	GL10	2270	2190	2000	1820	1700	1890	1820	1650	1510	1400
	140		3330	3250	3060	2820	2630	2630	2550	2390	2230	2110
	190		4110	4020	3800	3580	3410	3280	3190	2990	2790	2650
	240		4820	4720	4480	4230	4040	3880	3780	3550	3320	3150
	290		5470	5370	5100	4830	4620	4440	4330	4070	3810	3620
	315		5780	5670	5400	5110	4890	4710	4600	4320	4050	3840
	360		6310	6190	5910	5610	5370	5180	5060	4750	4460	4240
	405		6810	6690	6390	6080	5830	5630	5490	5170	4860	4620
	450		7280	7160	6850	6530	6270	6060	5920	5580	5240	4990
	495		7730	7610	7300	6960	6690	6470	6320	5960	5610	5340
	540		8170	8040	7720	7380	7100	6870	6720	6340	5970	5690
	595		8670	8550	8220	7870	7580	7340	7180	6790	6400	6100
	890		11070	10940	10610	10220	9900	9630	9440	8980	8500	8130
88	90	GL10	2500	2410	2200	2010	1870	2040	1980	1830	1660	1550
	140		3530	3450	3260	3070	2890	2810	2740	2560	2400	2270
	190		4340	4250	4040	3810	3640	3500	3420	3200	3000	2850
	240		5070	4970	4740	4490	4300	4140	4040	3800	3560	3380
	290		5730	5630	5380	5110	4900	4730	4620	4350	4080	3880
	315		6040	5940	5680	5410	5190	5010	4900	4610	4330	4120
	360		6580	6480	6210	5920	5690	5500	5380	5070	4770	4540
	405		7090	6980	6700	6410	6170	5970	5840	5510	5190	4940
	450		7560	7450	7170	6870	6620	6410	6280	5940	5590	5330
	495		8020	7910	7630	7310	7060	6840	6700	6340	5980	5710
	540		8460	8350	8060	7740	7480	7250	7110	6740	6360	6070
	595		8960	8860	8560	8240	7970	7740	7590	7200	6810	6510
	890		11360	11250	10960	10630	10330	10080	9910	9470	9000	8630
135	90	GL10	2820	2740	2520	2300	2150	2250	2190	2050	1910	1780
	140		3800	3730	3540	3350	3210	3090	3010	2830	2650	2510
	190		4640	4560	4360	4140	3970	3830	3740	3520	3310	3140
	240		5390	5300	5090	4850	4670	4510	4410	4160	3910	3730
	290		6060	5980	5750	5510	5300	5140	5020	4750	4480	4270
	315		6380	6290	6060	5810	5610	5430	5320	5030	4750	4530
	360		6920	6830	6600	6340	6130	5950	5830	5520	5220	4980
	405		7430	7340	7110	6840	6620	6430	6310	5990	5670	5420
	450		7910	7820	7580	7310	7090	6890	6770	6440	6100	5840
	495		8360	8280	8040	7770	7540	7340	7210	6870	6510	6240
	540		8800	8710	8480	8200	7970	7770	7630	7280	6920	6630
	595		9310	9220	8980	8710	8470	8270	8130	7770	7390	7090
	890		11690	11610	11380	11110	10870	10650	10500	10110	9680	9330

Woodspan Max Beam length 7200mm.

MID FLOOR JOIST SPAN TABLE

GL8

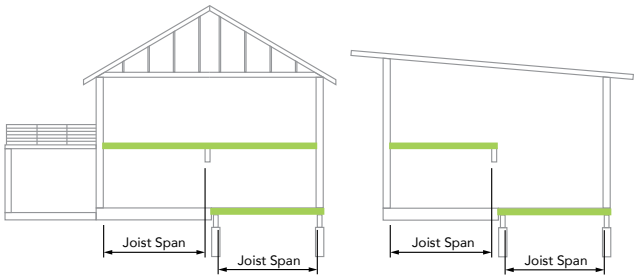


			EUROCODE VIBRATION - LIMITED TO 0.5MM DEFLECTION UNDER 1.0 KN POINT LOAD									
		Super Imposed Dead Load	SDL = 0.4kPa					SDL = 1.2kPa				
		Joist Spacing (mm)	400	450	600	800	1000	400	450	600	800	1000
Joist Beam Size			Max Joist Span (mm)									
Width (mm)	Depth (mm)	Grade (GL)										
65	90	GL8	910	910	910	910	910	910	910	910	910	910
	140		1410	1410	1410	1410	1410	1410	1410	1410	1410	1410
	190		1920	1920	1920	1920	1920	1920	1920	1920	1920	1920
	240		2430	2430	2430	2430	2430	2430	2430	2430	2430	2430
	290		2930	2930	2930	2930	2930	2930	2930	2930	2930	2930
	315		3190	3190	3190	3190	3190	3190	3190	3190	3190	3190
	360		3640	3640	3640	3640	3640	3640	3640	3640	3640	3640
	405		4100	4100	4100	4100	4100	4100	4100	4100	4100	4100
	450		4550	4550	4550	4550	4550	4550	4550	4550	4550	4550
	495		5010	5010	5010	5010	5010	5010	5010	5010	5010	5010
	540		5470	5470	5470	5470	5470	5470	5470	5470	5470	5470
	595		6020	6020	6020	6020	6020	6020	6020	6020	6020	6020
	890		9010	9010	9010	9010	9010	9010	9010	9010	9010	9010
88	90	GL8	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	140		1560	1560	1560	1560	1560	1560	1560	1560	1560	1560
	190		2120	2120	2120	2120	2120	2120	2120	2120	2120	2120
	240		2680	2680	2680	2680	2680	2680	2680	2680	2680	2680
	290		3240	3240	3240	3240	3240	3240	3240	3240	3240	3240
	315		3530	3530	3530	3530	3530	3530	3530	3530	3530	3530
	360		4030	4030	4030	4030	4030	4030	4030	4030	4030	4030
	405		4530	4530	4530	4530	4530	4530	4530	4530	4530	4530
	450		5040	5040	5040	5040	5040	5040	5040	5040	5040	5040
	495		5540	5540	5540	5540	5540	5540	5540	5540	5540	5540
	540		6050	6050	6050	6050	6050	6050	6050	6050	6050	6050
	595		6660	6660	6660	6660	6660	6660	6660	6660	6660	6660
	890		9970	9970	9970	9970	9970	9970	9970	9970	9970	9970
135	90	GL8	1160	1160	1160	1160	1160	1160	1160	1160	1160	1160
	140		1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
	190		2450	2450	2450	2450	2450	2450	2450	2450	2450	2450
	240		3100	3100	3100	3100	3100	3100	3100	3100	3100	3100
	290		3740	3740	3740	3740	3740	3740	3740	3740	3740	3740
	315		4070	4070	4070	4070	4070	4070	4070	4070	4070	4070
	360		4650	4650	4650	4650	4650	4650	4650	4650	4650	4650
	405		5230	5230	5230	5230	5230	5230	5230	5230	5230	5230
	450		5810	5810	5810	5810	5810	5810	5810	5810	5810	5810
	495		6390	6390	6390	6390	6390	6390	6390	6390	6390	6390
	540		6980	6980	6980	6980	6980	6980	6980	6980	6980	6980
	595		7690	7690	7690	7690	7690	7690	7690	7690	7690	7690
	890		11500	11500	11500	11500	11500	11500	11500	11500	11500	11500

Woodspan Max Beam length 7200mm.

MID FLOOR JOIST SPAN TABLE

GL10

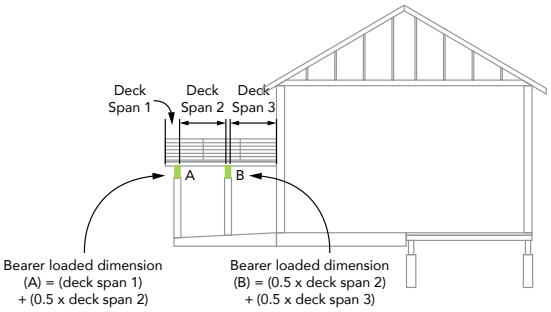


			EUROCODE VIBRATION - LIMITED TO 0.5MM DEFLECTION UNDER 1.0 KN POINT LOAD									
		Super Imposed Dead Load	SDL = 0.4kPa					SDL = 1.2kPa				
		Joist Spacing (mm)	400	450	600	800	1000	400	450	600	800	1000
Joist Beam Size			Max Joist Span (mm)									
Width (mm)	Depth (mm)	Grade (GL)										
65	90	GL10	980	980	980	980	980	980	980	980	980	980
	140		1520	1520	1520	1520	1520	1520	1520	1520	1520	1520
	190		2070	2070	2070	2070	2070	2070	2070	2070	2070	2070
	240		2610	2610	2610	2610	2610	2610	2610	2610	2610	2610
	290		3160	3160	3160	3160	3160	3160	3160	3160	3160	3160
	315		3430	3430	3430	3430	3430	3430	3430	3430	3430	3430
	360		3920	3920	3920	3920	3920	3920	3920	3920	3920	3920
	405		4410	4410	4410	4410	4410	4410	4410	4410	4410	4410
	450		4910	4910	4910	4910	4910	4910	4910	4910	4910	4910
	495		5400	5400	5400	5400	5400	5400	5400	5400	5400	5400
	540		5890	5890	5890	5890	5890	5890	5890	5890	5890	5890
	595		6490	6490	6490	6490	6490	6490	6490	6490	6490	6490
	890		9710	9710	9710	9710	9710	9710	9710	9710	9710	9710
88	90	GL10	1080	1080	1080	1080	1080	1080	1080	1080	1080	1080
	140		1690	1690	1690	1690	1690	1690	1690	1690	1690	1690
	190		2290	2290	2290	2290	2290	2290	2290	2290	2290	2290
	240		2890	2890	2890	2890	2890	2890	2890	2890	2890	2890
	290		3500	3500	3500	3500	3500	3500	3500	3500	3500	3500
	315		3800	3800	3800	3800	3800	3800	3800	3800	3800	3800
	360		4340	4340	4340	4340	4340	4340	4340	4340	4340	4340
	405		4880	4880	4880	4880	4880	4880	4880	4880	4880	4880
	450		5430	5430	5430	5430	5430	5430	5430	5430	5430	5430
	495		5970	5970	5970	5970	5970	5970	5970	5970	5970	5970
	540		6510	6510	6510	6510	6510	6510	6510	6510	6510	6510
	595		7180	7180	7180	7180	7180	7180	7180	7180	7180	7180
	890		10740	10740	10740	10740	10740	10740	10740	10740	10740	10740
135	90	GL10	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250
	140		1940	1940	1940	1940	1940	1940	1940	1940	1940	1940
	190		2640	2640	2640	2640	2640	2640	2640	2640	2640	2640
	240		3340	3340	3340	3340	3340	3340	3340	3340	3340	3340
	290		4030	4030	4030	4030	4030	4030	4030	4030	4030	4030
	315		4380	4380	4380	4380	4380	4380	4380	4380	4380	4380
	360		5010	5010	5010	5010	5010	5010	5010	5010	5010	5010
	405		5630	5630	5630	5630	5630	5630	5630	5630	5630	5630
	450		6260	6260	6260	6260	6260	6260	6260	6260	6260	6260
	495		6890	6890	6890	6890	6890	6890	6890	6890	6890	6890
	540		7510	7510	7510	7510	7510	7510	7510	7510	7510	7510
	595		8280	8280	8280	8280	8280	8280	8280	8280	8280	8280
	890		12390	12390	12390	12390	12390	12390	12390	12390	12390	12390

Woodspan Max Beam length 7200mm.

DECK BEARER SPAN TABLE

GL8

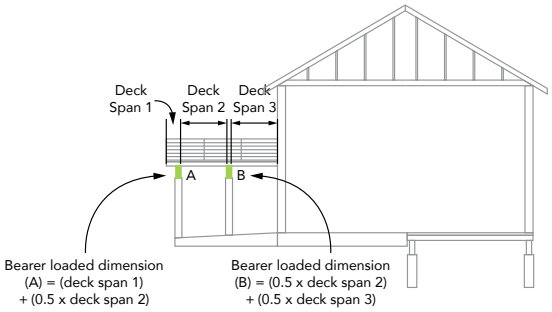


	Bearer Loaded Dimension (mm)	900	1200	1500	1800	2400	3000	3600	4200	4800
Deck Bearer Beam Size		Max Beam Span (mm)								
Width (mm)	Depth (mm)	Grade (GL)								
65	90	GL8	1170	1070	990	930	850	790	730	680	630
	140		1810	1650	1540	1450	1320	1220	1140	1060	990
	190		2450	2240	2080	1960	1790	1660	1550	1430	1340
	240		3090	2820	2630	2480	2250	2100	1960	1810	1700
	290		3720	3400	3160	2990	2720	2530	2360	2190	2050
	315		4030	3680	3430	3240	2950	2750	2560	2370	2220
	360		4590	4200	3920	3700	3370	3140	2890	2680	2500
	405		5140	4710	4400	4150	3790	3520	3220	2980	2790
	450		5690	5220	4870	4600	4200	3870	3540	3280	3070
	495		6240	5730	5350	5050	4620	4210	3850	3570	3340
	540		6780	6230	5820	5500	5030	4540	4150	3850	3600
	595		7440	6840	6400	6050	5510	4940	4510	4180	3920
	890		10880	10060	9430	8740	7620	6840	6260	5800	5440
88	90	GL8	1290	1180	1090	1030	940	870	820	780	740
	140		2000	1820	1700	1600	1460	1350	1270	1210	1150
	190		2700	2470	2300	2170	1970	1830	1730	1640	1560
	240		3390	3100	2890	2730	2490	2310	2180	2070	1970
	290		4080	3730	3480	3290	3000	2790	2630	2500	2380
	315		4420	4050	3780	3570	3260	3030	2860	2720	2580
	360		5020	4610	4300	4070	3710	3460	3260	3100	2910
	405		5620	5160	4830	4560	4170	3890	3670	3460	3240
	450		6220	5720	5350	5060	4630	4310	4070	3810	3570
	495		6810	6270	5870	5550	5080	4740	4470	4160	3890
	540		7390	6810	6380	6040	5530	5160	4850	4500	4210
	595		8100	7470	7000	6640	6080	5670	5300	4910	4600
	890		11770	10930	10280	9770	8980	8300	7600	7050	6610
135	90	GL8	1480	1350	1260	1180	1080	1000	940	900	860
	140		2290	2090	1950	1840	1670	1560	1470	1390	1330
	190		3080	2820	2630	2480	2270	2110	1990	1890	1810
	240		3860	3540	3310	3120	2850	2660	2510	2380	2280
	290		4620	4250	3970	3760	3440	3200	3020	2880	2750
	315		5000	4600	4310	4080	3730	3480	3280	3120	2990
	360		5670	5230	4900	4640	4250	3960	3740	3560	3410
	405		6340	5850	5490	5200	4770	4450	4200	4000	3830
	450		7000	6470	6070	5760	5280	4930	4660	4440	4250
	495		7640	7080	6650	6310	5790	5410	5110	4870	4670
	540		8280	7680	7220	6860	6300	5890	5570	5310	5090
	595		9060	8410	7920	7520	6920	6470	6120	5840	5600
	890		13020	12180	11530	10990	10160	9540	9040	8640	8150

Woodspan Max Beam length 7200mm.

DECK BEARER SPAN TABLE

GL10

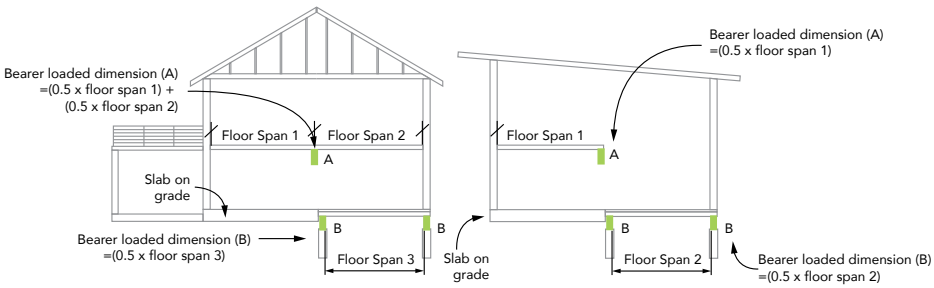


Deck Bearer Beam Size			Bearer Loaded Dimension (mm)	900	1200	1500	1800	2400	3000	3600	4200	4800
Width (mm)	Depth (mm)	Grade (GL)	Max Beam Span (mm)									
65	90	GL10		1260	1150	1070	1000	910	850	790	730	680
	140			1960	1780	1660	1560	1420	1320	1230	1140	1060
	190			2640	2410	2240	2120	1930	1790	1670	1540	1440
	240			3330	3040	2830	2670	2430	2260	2110	1950	1820
	290			4000	3660	3410	3220	2930	2730	2540	2360	2200
	315			4340	3970	3700	3490	3180	2960	2750	2550	2390
	360			4940	4520	4220	3980	3630	3380	3110	2880	2690
	405			5540	5070	4740	4470	4080	3790	3460	3210	3000
	450			6130	5620	5250	4960	4530	4160	3810	3530	3300
	495			6720	6170	5760	5450	4970	4530	4140	3840	3590
	540			7310	6710	6270	5930	5420	4890	4470	4140	3880
	595			8020	7370	6890	6520	5930	5310	4860	4500	4220
	890			11720	10830	10160	9410	8200	7360	6740	6250	5850
88	90	GL10		1390	1270	1180	1110	1010	940	880	840	790
	140			2150	1960	1830	1720	1570	1460	1370	1300	1240
	190			2910	2660	2470	2330	2130	1980	1860	1770	1680
	240			3650	3340	3120	2940	2680	2490	2350	2230	2120
	290			4390	4020	3750	3540	3230	3010	2840	2700	2560
	315			4760	4360	4070	3840	3510	3270	3080	2930	2770
	360			5410	4960	4640	4380	4000	3730	3510	3340	3130
	405			6060	5560	5200	4920	4490	4190	3950	3730	3490
	450			6700	6160	5760	5450	4980	4640	4380	4100	3840
	495			7330	6750	6320	5980	5470	5100	4810	4470	4190
	540			7960	7340	6870	6510	5960	5560	5220	4840	4530
	595			8720	8050	7550	7150	6550	6110	5700	5290	4950
	890			12680	11770	11080	10520	9680	8930	8180	7590	7110
135	90	GL10		1600	1460	1360	1280	1160	1080	1020	970	920
	140			2460	2250	2100	1980	1800	1680	1580	1500	1440
	190			3320	3040	2830	2680	2440	2270	2140	2040	1950
	240			4150	3810	3560	3370	3070	2860	2700	2570	2460
	290			4980	4580	4280	4050	3700	3450	3260	3100	2970
	315			5390	4960	4640	4390	4020	3740	3530	3360	3220
	360			6110	5630	5280	5000	4580	4270	4030	3840	3680
	405			6830	6310	5910	5600	5130	4790	4520	4310	4130
	450			7540	6970	6540	6200	5690	5310	5020	4780	4580
	495			8230	7620	7160	6800	6240	5830	5510	5250	5040
	540			8920	8270	7780	7390	6790	6350	6000	5720	5480
	595			9760	9060	8530	8100	7450	6970	6590	6290	6030
	890			14030	13130	12420	11840	10950	10270	9740	9300	8770

Woodspan Max Beam length 7200mm.

FLOOR BEARER SPAN TABLE

GL8

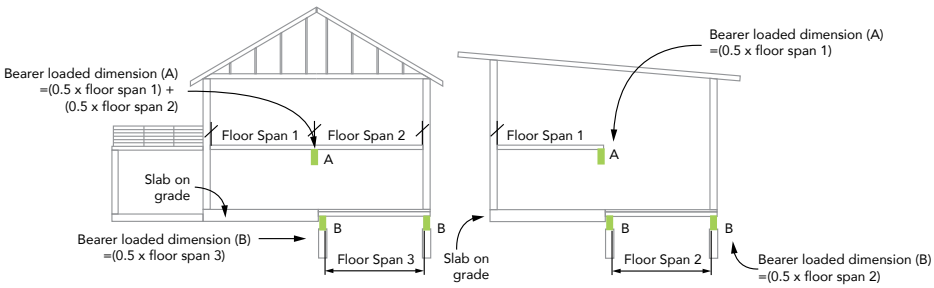


			ASNZS1170 VIBRATION - LIMITED TO 1MM DEFLECTION UNDER 1KN POINT LOAD											
		Super Imposed Dead Load	SDL = 0.4kPa						SDL =1.2kPa					
		Bearer Loaded Dimension (mm)	2400	3000	3600	4800	6200	7200	2400	3000	3600	4800	6200	7200
Floor Bearer Beam Size			Max Beam Span (mm)											
Width (mm)	Depth (mm)	Grade (GL)												
65	90	GL8	1130	1010	930	800	700	650	970	870	800	690	610	560
	140		1760	1580	1440	1250	1100	1020	1510	1360	1240	1070	940	880
	190		2390	2140	1960	1690	1490	1380	2050	1840	1680	1460	1280	1190
	240		3020	2700	2470	2140	1880	1750	2590	2330	2130	1840	1620	1500
	290		3640	3260	2980	2590	2280	2110	3130	2810	2570	2230	1960	1820
	315		3960	3540	3240	2810	2470	2290	3390	3050	2790	2420	2130	1970
	360		4520	4050	3700	3210	2820	2620	3880	3490	3190	2760	2430	2260
	405		5080	4550	4160	3610	3180	2950	4360	3920	3580	3110	2740	2540
	450		5630	5050	4620	4000	3530	3280	4840	4350	3980	3450	3040	2820
	495		6170	5540	5060	4390	3870	3590	5310	4770	4360	3790	3330	3090
	540		6710	6020	5500	4780	4210	3910	5790	5190	4740	4110	3620	3360
	595		7340	6590	6020	5230	4610	4280	6340	5680	5200	4510	3970	3690
	890		10410	9360	8570	7450	6570	6110	9010	8090	7400	6430	5670	5260
88	90	GL8	1270	1180	1080	930	820	760	1070	1000	930	800	700	650
	140		1970	1840	1680	1450	1280	1190	1670	1550	1440	1250	1100	1020
	190		2680	2490	2270	1970	1730	1610	2270	2110	1960	1700	1490	1380
	240		3380	3140	2870	2490	2190	2030	2860	2660	2470	2140	1880	1750
	290		4090	3790	3460	3000	2650	2460	3450	3210	2980	2590	2280	2110
	315		4440	4110	3760	3260	2870	2670	3750	3480	3240	2810	2470	2300
	360		5080	4700	4290	3730	3280	3050	4270	3980	3700	3210	2830	2620
	405		5710	5280	4830	4190	3690	3430	4800	4470	4160	3610	3180	2950
	450		6350	5860	5360	4650	4100	3810	5330	4960	4620	4010	3530	3280
	495		6990	6430	5890	5110	4510	4190	5860	5450	5080	4410	3880	3610
	540		7620	7010	6420	5570	4910	4570	6380	5940	5540	4810	4240	3930
	595		8400	7710	7060	6140	5410	5030	7020	6540	6100	5290	4660	4330
	890		12420	11420	10460	9110	8040	7480	10410	9720	9050	7870	6940	6450
135	90	GL8	1460	1400	1310	1150	1020	940	1240	1150	1080	980	870	810
	140		2280	2170	2040	1800	1580	1470	1920	1790	1680	1530	1360	1260
	190		3090	2930	2770	2440	2150	1990	2610	2420	2280	2080	1850	1710
	240		3900	3690	3480	3070	2710	2520	3290	3060	2880	2620	2330	2170
	290		4720	4450	4200	3710	3270	3040	3960	3690	3480	3170	2820	2620
	315		5130	4820	4550	4030	3550	3300	4300	4000	3770	3440	3060	2840
	360		5860	5500	5200	4600	4060	3770	4900	4570	4310	3920	3500	3250
	405		6590	6170	5830	5170	4560	4240	5510	5130	4840	4410	3930	3650
	450		7310	6840	6460	5740	5060	4700	6110	5690	5370	4900	4360	4050
	495		8020	7500	7090	6300	5560	5170	6700	6250	5900	5380	4800	4460
	540		8720	8160	7720	6870	6060	5640	7300	6810	6430	5860	5230	4860
	595		9560	8960	8480	7560	6670	6200	8020	7490	7070	6450	5760	5350
	890		14010	13170	12500	11210	9920	9230	11850	11090	10490	9590	8570	7970

Woodspan Max Beam length 7200mm.

FLOOR BEARER SPAN TABLE

GL10

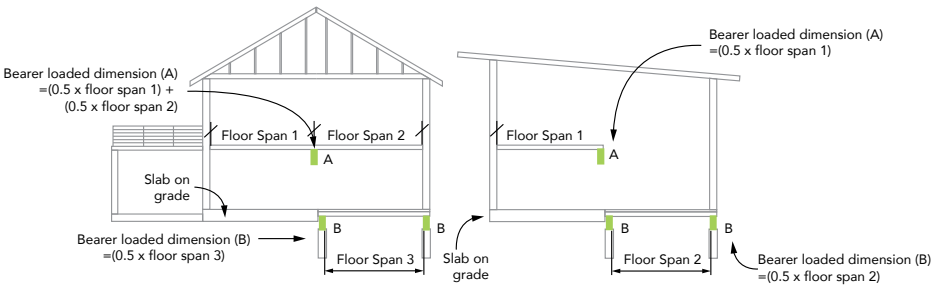


			ASNZS1170 VIBRATION - LIMITED TO 1MM DEFLECTION UNDER 1KN POINT LOAD											
		Super Imposed Dead Load	SDL = 0.4kPa						SDL =1.2kPa					
		Bearer Loaded Dimension (mm)	2400	3000	3600	4800	6200	7200	2400	3000	3600	4800	6200	7200
Floor Bearer Beam Size			Max Beam Span (mm)											
Width (mm)	Depth (mm)	Grade (GL)												
65	90	GL10	1220	1090	1000	860	760	700	1050	940	860	740	650	600
	140		1900	1700	1550	1340	1180	1100	1630	1460	1330	1160	1020	940
	190		2570	2300	2100	1820	1600	1490	2210	1980	1810	1570	1380	1280
	240		3250	2910	2660	2300	2030	1880	2790	2500	2290	1980	1740	1620
	290		3920	3510	3210	2780	2450	2270	3370	3030	2760	2390	2110	1960
	315		4260	3810	3480	3020	2660	2470	3660	3290	3000	2600	2290	2130
	360		4860	4350	3980	3450	3040	2820	4180	3750	3430	2970	2620	2430
	405		5460	4900	4480	3880	3420	3170	4690	4220	3860	3340	2940	2730
	450		6060	5430	4970	4310	3800	3520	5210	4680	4280	3710	3270	3030
	495		6640	5960	5450	4730	4170	3870	5730	5140	4700	4070	3590	3330
	540		7220	6470	5920	5140	4530	4200	6230	5580	5100	4430	3900	3620
	595		7900	7090	6480	5630	4960	4610	6820	6110	5590	4850	4270	3970
	890		11210	10070	9220	8020	7070	6570	9700	8700	7960	6920	6100	5660
88	90	GL10	1360	1270	1160	1000	880	820	1160	1070	1000	860	760	700
	140		2120	1980	1800	1560	1380	1280	1800	1670	1550	1340	1180	1100
	190		2880	2680	2450	2120	1870	1730	2440	2270	2110	1830	1610	1490
	240		3650	3380	3090	2680	2360	2190	3080	2860	2660	2300	2030	1880
	290		4410	4080	3730	3230	2850	2640	3720	3460	3210	2780	2450	2280
	315		4790	4430	4050	3510	3090	2870	4040	3750	3490	3020	2660	2470
	360		5470	5050	4620	4010	3530	3280	4610	4290	3980	3450	3040	2820
	405		6160	5680	5190	4510	3970	3690	5180	4820	4480	3880	3420	3180
	450		6840	6300	5770	5010	4410	4100	5740	5350	4970	4310	3800	3530
	495		7530	6920	6340	5500	4850	4510	6310	5870	5470	4740	4180	3880
	540		8210	7540	6900	6000	5290	4910	6870	6400	5960	5170	4560	4230
	595		9050	8300	7600	6600	5820	5410	7560	7040	6560	5690	5020	4660
	890		13380	12280	11260	9800	8660	8050	11220	10470	9740	8470	7470	6940
135	90	GL10	1570	1500	1420	1240	1090	1020	1330	1240	1170	1060	940	870
	140		2450	2330	2200	1930	1700	1580	2070	1930	1810	1650	1470	1360
	190		3330	3160	2980	2620	2310	2140	2810	2610	2460	2240	1990	1850
	240		4210	3980	3750	3310	2920	2710	3540	3290	3100	2820	2510	2330
	290		5080	4790	4520	3990	3520	3270	4270	3970	3740	3410	3030	2820
	315		5520	5200	4910	4340	3820	3550	4630	4310	4060	3700	3290	3060
	360		6310	5920	5600	4950	4360	4050	5280	4920	4640	4230	3760	3490
	405		7100	6650	6280	5560	4910	4560	5930	5530	5210	4750	4230	3930
	450		7880	7360	6960	6170	5450	5060	6580	6130	5780	5270	4700	4360
	495		8640	8080	7640	6780	5990	5560	7220	6730	6360	5800	5160	4800
	540		9390	8790	8320	7390	6530	6060	7860	7330	6920	6320	5630	5230
	595		10300	9650	9140	8130	7180	6680	8640	8070	7620	6950	6200	5760
	890		15090	14180	13470	12070	10670	9930	12770	11940	11300	10330	9230	8580

Woodspan Max Beam length 7200mm.

FLOOR BEARER SPAN TABLE

GL8

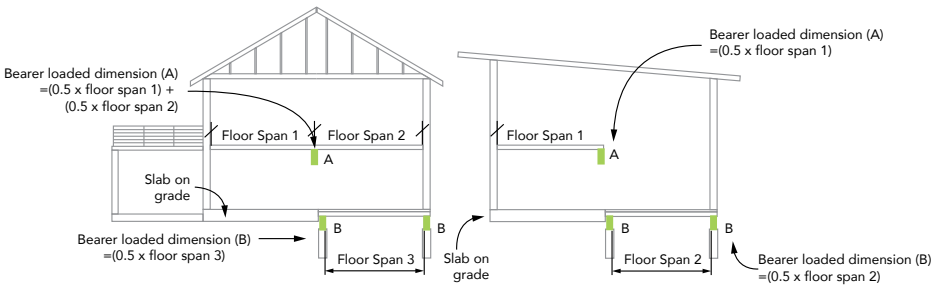


			NZS3604 VIBRATION - FREQUENCY > 12 HZ											
		Super Imposed Dead Load	SDL = 0.4kPa						SDL =1.2kPa					
		Bearer Loaded Dimension (mm)	2400	3000	3600	4800	6200	7200	2400	3000	3600	4800	6200	7200
Floor Bearer Beam Size			Max Beam Span (mm)											
Width (mm)	Depth (mm)	Grade (GL)												
65	90	GL8	1130	1010	930	800	700	650	970	870	800	690	610	560
	140		1760	1580	1440	1250	1100	1020	1510	1360	1240	1070	940	880
	190		2390	2140	1960	1690	1490	1380	2030	1840	1680	1460	1280	1190
	240		3020	2700	2470	2140	1880	1750	2410	2280	2130	1840	1620	1500
	290		3600	3260	2980	2590	2280	2110	2780	2630	2510	2230	1960	1820
	315		3830	3540	3240	2810	2470	2290	2950	2800	2670	2420	2130	1970
	360		4220	4010	3700	3210	2820	2620	3260	3090	2950	2750	2430	2260
	405		4590	4370	4160	3610	3180	2950	3560	3370	3230	3010	2740	2540
	450		4960	4720	4530	4000	3530	3280	3850	3650	3490	3250	3040	2820
	495		5310	5050	4850	4390	3870	3590	4130	3910	3740	3490	3280	3090
	540		5650	5380	5170	4780	4210	3910	4400	4170	3990	3720	3500	3360
	595		6050	5770	5540	5200	4610	4280	4730	4480	4290	4000	3760	3630
	890		8040	7690	7400	6960	6570	6110	6350	6030	5780	5400	5080	4900
88	90	GL8	1300	1180	1080	930	820	760	1070	1000	930	800	710	650
	140		2030	1840	1680	1450	1280	1190	1670	1550	1440	1250	1100	1020
	190		2740	2490	2270	1970	1730	1610	2180	2070	1960	1700	1490	1380
	240		3360	3140	2870	2490	2190	2030	2600	2460	2350	2140	1880	1750
	290		3860	3670	3460	3000	2650	2460	2990	2830	2710	2520	2280	2110
	315		4100	3900	3740	3260	2870	2670	3180	3010	2880	2680	2470	2300
	360		4510	4290	4120	3730	3280	3050	3510	3320	3180	2970	2790	2620
	405		4910	4680	4490	4190	3690	3430	3830	3630	3470	3240	3040	2930
	450		5290	5040	4850	4540	4100	3810	4130	3920	3750	3500	3290	3170
	495		5660	5400	5190	4870	4510	4190	4430	4210	4030	3760	3530	3410
	540		6020	5740	5520	5180	4890	4570	4720	4480	4290	4010	3770	3630
	595		6440	6150	5920	5560	5250	5030	5070	4820	4610	4310	4050	3910
	890		8510	8160	7880	7430	7030	6800	6800	6470	6200	5800	5460	5270
135	90	GL8	1500	1400	1310	1160	1020	940	1240	1150	1080	980	870	810
	140		2330	2170	2040	1800	1580	1470	1920	1790	1680	1530	1360	1260
	190		3130	2930	2770	2440	2150	1990	2420	2290	2190	2040	1850	1710
	240		3700	3520	3380	3070	2710	2520	2880	2730	2610	2430	2290	2170
	290		4240	4040	3880	3640	3270	3040	3310	3140	3000	2800	2630	2540
	315		4490	4280	4120	3860	3550	3300	3520	3330	3190	2980	2800	2700
	360		4940	4710	4530	4250	4010	3770	3880	3680	3530	3290	3090	2980
	405		5360	5120	4930	4630	4370	4230	4230	4010	3850	3590	3380	3260
	450		5770	5520	5320	5000	4720	4570	4570	4340	4160	3880	3650	3520
	495		6160	5900	5680	5350	5060	4890	4890	4650	4460	4170	3920	3780
	540		6540	6270	6050	5690	5390	5210	5210	4950	4750	4440	4180	4030
	595		6990	6700	6470	6100	5780	5590	5590	5320	5100	4770	4490	4330
	890		9160	8830	8550	8100	7700	7460	7460	7110	6830	6410	6040	5830

Woodspan Max Beam length 7200mm.

FLOOR BEARER SPAN TABLE

GL10

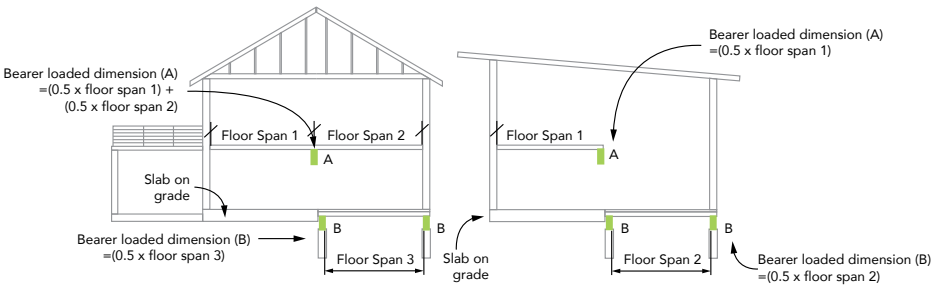


			NZS3604 VIBRATION - FREQUENCY > 12 HZ											
		Super Imposed Dead Load	SDL = 0.4kPa						SDL = 1.2kPa					
		Bearer Loaded Dimension (mm)	2400	3000	3600	4800	6200	7200	2400	3000	3600	4800	6200	7200
Floor Bearer Beam Size			Max Beam Span (mm)											
Width (mm)	Depth (mm)	Grade (GL)												
65	90	GL10	1220	1090	1000	860	760	700	1050	940	860	740	650	600
	140		1900	1700	1550	1340	1180	1100	1630	1460	1330	1160	1020	940
	190		2570	2300	2100	1820	1600	1490	2140	1980	1810	1570	1380	1280
	240		3250	2910	2660	2300	2030	1880	2550	2410	2290	1980	1740	1620
	290		3810	3510	3210	2780	2450	2270	2940	2780	2660	2390	2110	1960
	315		4050	3810	3480	3020	2660	2470	3120	2960	2830	2600	2290	2130
	360		4460	4240	3980	3450	3040	2820	3450	3270	3120	2910	2620	2430
	405		4860	4620	4430	3880	3420	3170	3760	3570	3410	3180	2940	2730
	450		5240	4990	4790	4310	3800	3520	4070	3860	3690	3440	3230	3030
	495		5610	5340	5130	4730	4170	3870	4370	4140	3960	3690	3470	3330
	540		5970	5690	5460	5120	4530	4200	4650	4410	4220	3940	3700	3570
	595		6400	6100	5860	5490	4960	4610	5000	4740	4540	4230	3980	3840
	890		8500	8130	7830	7360	6950	6570	6720	6380	6110	5710	5370	5180
88	90	GL10	1410	1270	1160	1000	880	820	1160	1070	1000	860	760	700
	140		2180	1980	1800	1560	1380	1280	1800	1670	1550	1340	1180	1100
	190		2960	2680	2450	2120	1870	1730	2310	2180	2090	1830	1610	1490
	240		3560	3380	3090	2680	2360	2190	2750	2600	2490	2300	2030	1880
	290		4080	3880	3720	3230	2850	2640	3160	2990	2860	2670	2450	2280
	315		4330	4120	3950	3510	3090	2870	3360	3180	3040	2840	2660	2470
	360		4770	4540	4360	4010	3530	3280	3710	3520	3360	3140	2950	2820
	405		5190	4940	4750	4450	3970	3690	4040	3840	3670	3420	3220	3100
	450		5590	5330	5120	4800	4410	4100	4370	4150	3970	3700	3480	3350
	495		5980	5710	5490	5150	4850	4510	4690	4450	4260	3970	3740	3600
	540		6360	6070	5840	5480	5170	4910	5000	4740	4540	4240	3980	3840
	595		6810	6510	6260	5880	5550	5370	5370	5090	4880	4560	4280	4130
	890		9000	8630	8330	7850	7430	7190	7190	6840	6560	6130	5770	5570
135	90	GL10	1620	1500	1420	1240	1090	1020	1330	1240	1170	1060	940	870
	140		2510	2330	2200	1930	1700	1580	2040	1930	1810	1650	1470	1360
	190		3310	3140	2980	2620	2310	2140	2560	2420	2320	2160	1990	1850
	240		3910	3730	3580	3310	2920	2710	3040	2880	2760	2570	2420	2330
	290		4480	4270	4100	3840	3520	3270	3500	3320	3180	2960	2780	2680
	315		4750	4530	4350	4080	3820	3550	3720	3530	3380	3150	2960	2850
	360		5220	4980	4790	4500	4250	4050	4100	3890	3730	3480	3270	3150
	405		5670	5420	5220	4900	4630	4470	4470	4240	4070	3800	3570	3440
	450		6100	5840	5620	5290	4990	4830	4830	4590	4390	4100	3860	3720
	495		6510	6240	6010	5660	5350	5170	5170	4910	4710	4400	4140	4000
	540		6920	6630	6390	6020	5700	5510	5510	5240	5020	4690	4420	4260
	595		7390	7090	6840	6450	6110	5910	5910	5620	5390	5040	4750	4580
	890		9680	9330	9040	8560	8140	7890	7890	7520	7230	6770	6390	6170

Woodspan Max Beam length 7200mm.

FLOOR BEARER SPAN TABLE

GL8

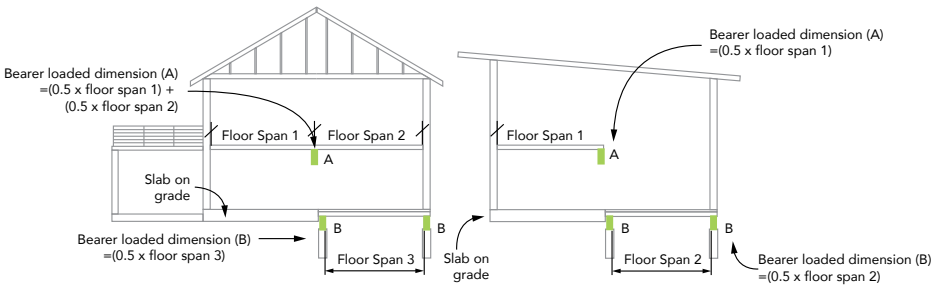


			EUROCODE VIBRATION - LIMITED TO 0.5MM DEFLECTION UNDER 1KN POINT LOAD											
		Super Imposed Dead Load	SDL = 0.6kPa						SDL = 1.2kPa					
		Bearer Loaded Dimension (mm)	2400	3000	3600	4800	6200	7200	2400	3000	3600	4800	6200	7200
Floor Bearer Beam Size			Max Beam Span (mm)											
Width (mm)	Depth (mm)	Grade (GL)												
65	90	GL8	910	910	910	800	700	650	910	870	800	690	610	560
	140		1410	1410	1410	1250	1100	1020	1410	1360	1240	1070	940	880
	190		1920	1920	1920	1690	1490	1380	1920	1840	1680	1460	1280	1190
	240		2430	2430	2430	2140	1880	1750	2430	2330	2130	1840	1620	1500
	290		2930	2930	2930	2590	2280	2110	2930	2810	2570	2230	1960	1820
	315		3190	3190	3190	2810	2470	2290	3190	3050	2790	2420	2130	1970
	360		3640	3640	3640	3210	2820	2620	3640	3490	3190	2760	2430	2260
	405		4100	4100	4100	3610	3180	2950	4100	3920	3580	3110	2740	2540
	450		4550	4550	4550	4000	3530	3280	4550	4350	3980	3450	3040	2820
	495		5010	5010	5010	4390	3870	3590	5010	4770	4360	3790	3330	3090
	540		5470	5470	5470	4780	4210	3910	5470	5190	4740	4110	3620	3360
	595		6020	6020	6020	5230	4610	4280	6020	5680	5200	4510	3970	3690
	890		9010	9010	8570	7450	6570	6110	9010	8090	7400	6430	5670	5260
88	90	GL8	1000	1000	1000	930	820	760	1000	1000	930	800	700	650
	140		1560	1560	1560	1450	1280	1190	1560	1550	1440	1250	1100	1020
	190		2120	2120	2120	1970	1730	1610	2120	2110	1960	1700	1490	1380
	240		2680	2680	2680	2490	2190	2030	2680	2660	2470	2140	1880	1750
	290		3240	3240	3250	3000	2650	2460	3240	3210	2980	2590	2280	2110
	315		3530	3530	3530	3260	2870	2670	3530	3480	3240	2810	2470	2300
	360		4030	4030	4030	3730	3280	3050	4030	3980	3700	3210	2830	2620
	405		4530	4530	4530	4190	3690	3430	4530	4470	4160	3610	3180	2950
	450		5040	5040	5040	4650	4100	3810	5040	4960	4620	4010	3530	3280
	495		5540	5540	5540	5110	4510	4190	5540	5450	5080	4410	3880	3610
	540		6050	6050	6050	5570	4910	4570	6050	5940	5540	4810	4240	3930
	595		6660	6660	6660	6140	5410	5030	6660	6540	6100	5290	4660	4330
	890		9970	9970	9970	9110	8040	7480	9970	9720	9050	7870	6940	6450
135	90	GL8	1160	1160	1160	1160	1020	940	1160	1150	1080	980	870	810
	140		1800	1800	1800	1800	1580	1470	1800	1790	1680	1530	1360	1260
	190		2450	2450	2450	2440	2150	1990	2450	2420	2280	2080	1850	1710
	240		3100	3100	3100	3070	2710	2520	3100	3060	2880	2620	2330	2170
	290		3740	3740	3740	3710	3270	3040	3740	3690	3480	3170	2820	2620
	315		4070	4070	4070	4030	3550	3300	4070	4000	3770	3440	3060	2840
	360		4650	4650	4650	4600	4060	3770	4650	4570	4310	3920	3500	3250
	405		5230	5230	5230	5170	4560	4240	5230	5130	4840	4410	3930	3650
	450		5810	5810	5810	5740	5060	4700	5810	5690	5370	4900	4360	4050
	495		6390	6390	6390	6300	5560	5170	6390	6250	5900	5380	4800	4460
	540		6980	6980	6980	6870	6060	5640	6980	6810	6430	5860	5230	4860
	595		7690	7690	7690	7560	6670	6200	7690	7490	7070	6450	5760	5350
	890		11500	11500	11500	11210	9920	9230	11500	11090	10490	9590	8570	7970

Woodspan Max Beam length 7200mm.

FLOOR BEARER SPAN TABLE

GL10

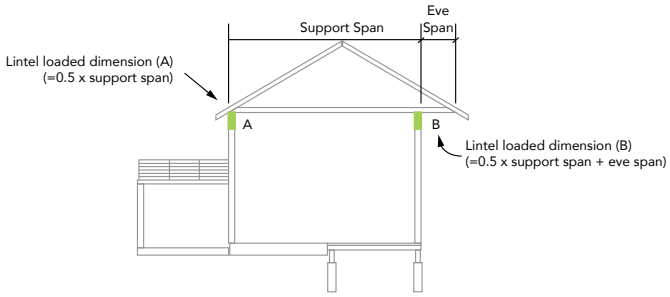


			EUROCODE VIBRATION - LIMITED TO 0.5MM DEFLECTION UNDER 1KN POINT LOAD											
		Super Imposed Dead Load	SDL = 0.6kPa						SDL = 1.2kPa					
		Bearer Loaded Dimension (mm)	2400	3000	3600	4800	6200	7200	2400	3000	3600	4800	6200	7200
Floor Bearer Beam Size			Max Beam Span (mm)											
Width (mm)	Depth (mm)	Grade (GL)												
65	90	GL10	980	980	980	860	760	700	980	940	860	740	650	600
	140		1520	1520	1520	1340	1180	1100	1520	1460	1330	1160	1020	940
	190		2070	2070	2070	1820	1600	1490	2070	1980	1810	1570	1380	1280
	240		2610	2610	2610	2300	2030	1880	2610	2500	2290	1980	1740	1620
	290		3160	3160	3160	2780	2450	2270	3160	3030	2760	2390	2110	1960
	315		3430	3430	3430	3020	2660	2470	3430	3290	3000	2600	2290	2130
	360		3920	3920	3930	3450	3040	2820	3920	3750	3430	2970	2620	2430
	405		4410	4410	4420	3880	3420	3170	4410	4220	3860	3340	2940	2730
	450		4910	4910	4910	4310	3800	3520	4910	4680	4280	3710	3270	3030
	495		5400	5400	5400	4730	4170	3870	5400	5140	4700	4070	3590	3330
	540		5890	5890	5890	5140	4530	4200	5890	5580	5100	4430	3900	3620
	595		6490	6490	6480	5630	4960	4610	6490	6110	5590	4850	4270	3970
	890		9710	9710	9220	8020	7070	6570	9700	8700	7960	6920	6100	5660
88	90	GL10	1080	1080	1080	1000	880	820	1080	1070	1000	860	760	700
	140		1690	1690	1690	1560	1380	1280	1690	1670	1550	1340	1180	1100
	190		2290	2290	2290	2120	1870	1730	2290	2270	2110	1830	1610	1490
	240		2890	2890	2890	2680	2360	2190	2890	2860	2660	2300	2030	1880
	290		3500	3500	3500	3230	2850	2640	3500	3460	3210	2780	2450	2280
	315		3800	3800	3800	3510	3090	2870	3800	3750	3490	3020	2660	2470
	360		4340	4340	4340	4010	3530	3280	4340	4290	3980	3450	3040	2820
	405		4880	4880	4880	4510	3970	3690	4880	4820	4480	3880	3420	3180
	450		5430	5430	5430	5010	4410	4100	5430	5350	4970	4310	3800	3530
	495		5970	5970	5970	5500	4850	4510	5970	5870	5470	4740	4180	3880
	540		6510	6510	6510	6000	5290	4910	6510	6400	5960	5170	4560	4230
	595		7180	7180	7180	6600	5820	5410	7180	7040	6560	5690	5020	4660
	890		10740	10740	10740	9800	8660	8050	10740	10470	9740	8470	7470	6940
135	90	GL10	1250	1250	1250	1240	1090	1020	1250	1240	1170	1060	940	870
	140		1940	1940	1940	1930	1700	1580	1940	1930	1810	1650	1470	1360
	190		2640	2640	2640	2620	2310	2140	2640	2610	2460	2240	1990	1850
	240		3340	3340	3340	3310	2920	2710	3340	3290	3100	2820	2510	2330
	290		4030	4030	4030	3990	3520	3270	4030	3970	3740	3410	3030	2820
	315		4380	4380	4380	4340	3820	3550	4380	4310	4060	3700	3290	3060
	360		5010	5010	5010	4950	4360	4050	5010	4920	4640	4230	3760	3490
	405		5630	5630	5630	5560	4910	4560	5630	5530	5210	4750	4230	3930
	450		6260	6260	6260	6170	5450	5060	6260	6130	5780	5270	4700	4360
	495		6890	6890	6890	6780	5990	5560	6890	6730	6360	5800	5160	4800
	540		7510	7510	7510	7390	6530	6060	7510	7330	6920	6320	5630	5230
	595		8280	8280	8280	8130	7180	6680	8280	8070	7620	6950	6200	5760
	890		12390	12390	12390	12070	10670	9930	12390	11940	11300	10330	9230	8580

Woodspan Max Beam length 7200mm.

LINTEL SPAN TABLE

GL8

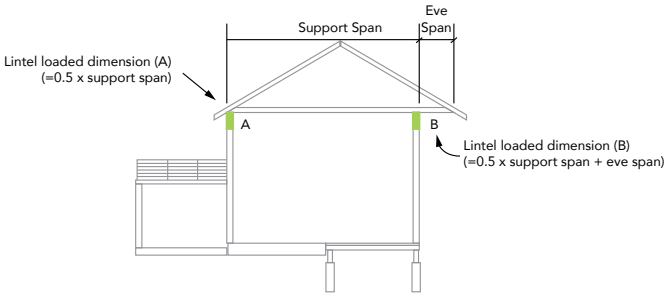


			FOR LIGHT ROOFS WITH PITCH ANGLE LESS THAN 25 DEGREES										
		Lintel Loaded Dimension (mm)	2000	3000	4000	5000	6000	7000	8000	9000	10000	11000	12000
Lintel Size			Max Lintel Span (mm)										
Width (mm)	Depth (mm)	Grade (GL)											
65	90	GL8	1400	1220	1110	1030	970	910	850	800	760	720	690
	140		2170	1900	1730	1600	1510	1420	1320	1250	1180	1130	1080
	190		2930	2570	2340	2180	2050	1920	1800	1700	1610	1530	1470
	240		3670	3240	2950	2750	2580	2410	2270	2140	2030	1940	1860
	290		4220	3720	3350	3080	2880	2710	2570	2450	2350	2260	2180
	315		4440	3840	3470	3200	2990	2830	2690	2570	2470	2370	2290
	360		4660	4050	3650	3380	3170	3000	2860	2740	2640	2540	2460
	405		4860	4220	3820	3530	3310	3140	3000	2870	2770	2680	2600
	450		5040	4380	3970	3670	3450	3270	3120	2990	2880	2790	2710
	495		5220	4530	4100	3800	3570	3380	3230	3110	3000	2900	2810
	540		5380	4670	4230	3910	3680	3490	3330	3200	3090	2990	2900
	595		5570	4830	4370	4050	3800	3610	3450	3310	3190	3090	3000
	890		6460	5580	5050	4670	4380	4160	3970	3810	3680	3560	3450
88	90	GL8	1540	1350	1230	1140	1070	1020	980	930	890	840	810
	140		2390	2100	1910	1770	1670	1590	1520	1450	1380	1310	1260
	190		3230	2840	2580	2400	2260	2150	2060	1970	1870	1790	1710
	240		3940	3570	3260	3030	2860	2720	2600	2490	2360	2250	2160
	290		4530	4120	3840	3640	3450	3280	3140	3010	2860	2720	2610
	315		4810	4380	4090	3870	3710	3560	3410	3270	3100	2960	2830
	360		5300	4830	4510	4280	4090	3940	3740	3570	3420	3290	3170
	405		5780	5260	4920	4670	4440	4190	3990	3810	3660	3520	3410
	450		6230	5690	5320	4950	4640	4390	4180	4000	3850	3720	3600
	495		6680	6100	5560	5130	4810	4550	4350	4170	4010	3880	3760
	540		7110	6340	5730	5310	4980	4710	4490	4310	4150	4020	3900
	595		7580	6560	5930	5490	5150	4890	4670	4480	4310	4170	4040
	890		8810	7590	6850	6330	5940	5630	5370	5160	4980	4820	4670
135	90	GL8	1770	1550	1410	1310	1240	1180	1120	1080	1040	1010	980
	140		2740	2410	2190	2040	1920	1830	1750	1680	1620	1570	1530
	190		3670	3250	2970	2760	2600	2480	2370	2280	2200	2140	2070
	240		4350	3960	3700	3480	3280	3120	2990	2880	2780	2700	2620
	290		4990	4550	4260	4040	3860	3720	3610	3470	3360	3250	3160
	315		5300	4840	4520	4290	4110	3960	3830	3730	3630	3530	3430
	360		5830	5330	4990	4730	4530	4370	4230	4110	4010	3920	3840
	405		6340	5800	5440	5160	4950	4770	4620	4490	4380	4280	4190
	450		6840	6260	5870	5580	5350	5150	4990	4850	4730	4630	4530
	495		7320	6710	6290	5980	5730	5530	5360	5210	5080	4960	4860
	540		7780	7140	6700	6370	6110	5900	5710	5560	5420	5290	5190
	595		8330	7660	7190	6840	6560	6330	6140	5970	5820	5690	5570
	890		11000	10180	9600	9150	8790	8490	8240	7930	7650	7400	7180

Woodspan Max Beam length 7200mm.

LINTEL SPAN TABLE

GL10

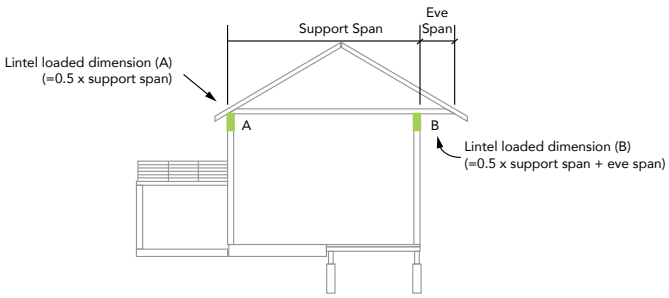


			FOR LIGHT ROOFS WITH PITCH ANGLE LESS THAN 25 DEGREES										
		Lintel Loaded Dimension (mm)	2000	3000	4000	5000	6000	7000	8000	9000	10000	11000	12000
Lintel Size			Max Lintel Span (mm)										
Width (mm)	Depth (mm)	Grade (GL)											
65	90	GL10	1500	1320	1200	1110	1050	980	920	860	820	780	750
	140		2330	2050	1860	1730	1630	1520	1430	1340	1280	1220	1160
	190		3160	2770	2520	2340	2210	2070	1940	1830	1730	1650	1580
	240		3880	3490	3180	2950	2740	2570	2430	2310	2190	2090	2000
	290		4460	3920	3530	3260	3040	2870	2720	2600	2490	2400	2320
	315		4670	4040	3650	3370	3160	2980	2840	2720	2610	2510	2430
	360		4900	4260	3840	3550	3330	3160	3010	2890	2780	2690	2600
	405		5100	4430	4020	3720	3490	3300	3150	3020	2920	2820	2730
	450		5300	4600	4170	3860	3630	3440	3290	3150	3040	2940	2850
	495		5480	4760	4310	3990	3750	3560	3400	3260	3150	3050	2960
	540		5650	4910	4440	4110	3860	3660	3500	3360	3240	3140	3050
	595		5850	5080	4590	4250	4000	3790	3620	3480	3360	3250	3150
	890		6790	5870	5300	4910	4600	4370	4170	4010	3860	3740	3630
88	90	GL10	1660	1450	1320	1230	1160	1100	1050	1000	950	910	870
	140		2570	2260	2060	1910	1800	1710	1640	1560	1480	1420	1350
	190		3480	3060	2780	2590	2440	2320	2220	2120	2010	1920	1840
	240		4170	3790	3510	3270	3080	2930	2800	2680	2540	2430	2320
	290		4790	4350	4060	3850	3680	3530	3380	3240	3070	2930	2810
	315		5090	4630	4320	4100	3920	3770	3650	3480	3330	3190	3050
	360		5610	5100	4770	4520	4330	4170	3970	3780	3630	3490	3370
	405		6110	5570	5200	4930	4680	4420	4210	4030	3870	3730	3610
	450		6590	6010	5620	5200	4880	4620	4400	4220	4060	3920	3800
	495		7060	6450	5840	5400	5060	4790	4570	4390	4230	4090	3960
	540		7520	6660	6020	5570	5230	4960	4730	4530	4370	4230	4100
	595		7960	6890	6230	5770	5410	5130	4900	4710	4540	4390	4250
	890		9250	7970	7190	6650	6240	5910	5650	5420	5230	5060	4910
135	90	GL10	1910	1670	1520	1420	1330	1270	1210	1170	1130	1090	1060
	140		2950	2590	2360	2200	2070	1970	1880	1810	1750	1700	1650
	190		3880	3500	3200	2980	2810	2670	2550	2460	2370	2300	2240
	240		4600	4190	3910	3710	3540	3360	3220	3100	3000	2900	2820
	290		5280	4810	4500	4270	4090	3940	3810	3700	3610	3510	3410
	315		5600	5110	4780	4540	4340	4190	4050	3940	3840	3750	3670
	360		6170	5630	5270	5010	4790	4620	4480	4350	4240	4140	4060
	405		6710	6140	5750	5460	5230	5040	4880	4750	4630	4520	4430
	450		7230	6620	6210	5900	5650	5450	5280	5130	5000	4890	4790
	495		7740	7100	6660	6320	6060	5850	5670	5510	5370	5250	5140
	540		8230	7550	7090	6740	6460	6230	6040	5870	5730	5600	5480
	595		8800	8100	7600	7230	6940	6690	6490	6310	6150	6020	5890
	890		11630	10760	10150	9670	9300	8980	8680	8330	8030	7770	7540

Woodspan Max Beam length 7200mm.

LINTEL SPAN TABLE

GL8

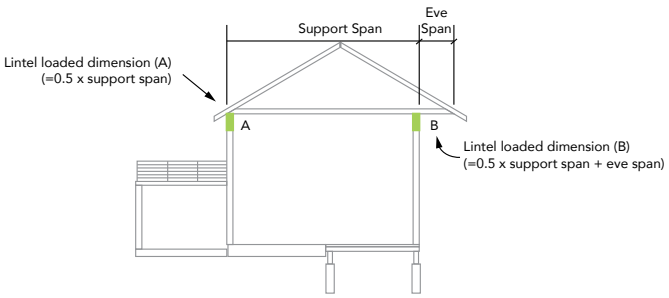


			FOR HEAVY ROOFS WITH PITCH ANGLE LESS THAN 25 DEGREES										
		Lintel Loaded Dimension (mm)	2000	3000	4000	5000	6000	7000	8000	9000	10000	11000	12000
Lintel Size			Max Lintel Span (mm)										
Width (mm)	Depth (mm)	Grade (GL)											
65	90	GL8	1210	1060	960	890	840	800	760	720	680	650	620
	140		1880	1640	1490	1390	1300	1240	1190	1120	1060	1010	970
	190		2540	2230	2030	1880	1770	1680	1610	1520	1440	1370	1320
	240		3210	2810	2560	2380	2240	2130	2030	1920	1820	1740	1660
	290		3800	3390	3090	2870	2700	2570	2460	2320	2200	2100	2010
	315		4040	3660	3350	3120	2930	2790	2670	2520	2390	2280	2180
	360		4460	4040	3770	3520	3300	3130	2980	2860	2730	2610	2490
	405		4860	4390	3980	3690	3450	3270	3120	2990	2890	2790	2710
	450		5250	4560	4130	3820	3590	3410	3260	3120	3000	2910	2820
	495		5430	4710	4270	3950	3710	3520	3360	3230	3120	3020	2930
	540		5610	4860	4400	4070	3830	3630	3470	3330	3210	3110	3020
	595		5810	5030	4550	4210	3960	3750	3590	3440	3320	3220	3120
	890		6740	5820	5260	4860	4560	4330	4130	3970	3830	3700	3590
88	90	GL8	1330	1170	1060	980	930	880	840	810	780	760	720
	140		2070	1810	1650	1530	1440	1370	1310	1260	1220	1180	1130
	190		2800	2460	2240	2080	1960	1860	1780	1710	1650	1600	1530
	240		3530	3100	2820	2620	2470	2350	2250	2160	2090	2020	1930
	290		4080	3700	3410	3170	2980	2840	2720	2610	2520	2440	2340
	315		4340	3940	3670	3440	3240	3080	2950	2840	2740	2650	2540
	360		4790	4350	4060	3840	3680	3520	3370	3240	3130	3030	2900
	405		5220	4740	4430	4190	4010	3860	3740	3630	3520	3410	3260
	450		5640	5130	4790	4540	4340	4180	4040	3930	3830	3740	3620
	495		6050	5500	5140	4870	4660	4490	4340	4220	4110	4020	3920
	540		6440	5870	5480	5190	4970	4790	4630	4490	4330	4180	4060
	595		6910	6300	5890	5580	5340	5090	4860	4670	4490	4340	4210
	890		9200	7920	7140	6590	6180	5860	5590	5370	5180	5010	4860
135	90	GL8	1530	1340	1220	1140	1070	1020	970	930	900	870	850
	140		2380	2090	1900	1770	1660	1580	1510	1450	1400	1360	1320
	190		3220	2830	2570	2390	2250	2140	2050	1970	1910	1850	1790
	240		3930	3560	3250	3020	2840	2700	2590	2490	2410	2330	2270
	290		4510	4100	3830	3630	3430	3260	3130	3010	2900	2820	2740
	315		4800	4360	4070	3860	3690	3540	3390	3270	3150	3060	2970
	360		5290	4810	4500	4260	4080	3930	3800	3700	3600	3490	3390
	405		5760	5250	4900	4650	4450	4290	4150	4030	3930	3840	3760
	450		6220	5670	5300	5030	4810	4640	4490	4360	4250	4150	4070
	495		6660	6080	5690	5390	5170	4980	4820	4680	4570	4460	4370
	540		7090	6480	6060	5750	5510	5310	5140	5000	4870	4760	4660
	595		7600	6950	6510	6180	5920	5700	5520	5370	5230	5120	5010
	890		10110	9290	8720	8290	7950	7670	7440	7230	7050	6900	6750

Woodspan Max Beam length 7200mm.

LINTEL SPAN TABLE

GL10

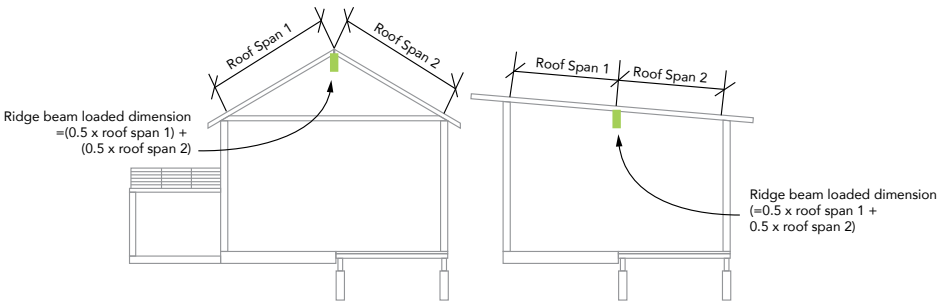


			FOR HEAVY ROOFS WITH PITCH ANGLE LESS THAN 25 DEGREES										
		Lintel Loaded Dimension (mm)	2000	3000	4000	5000	6000	7000	8000	9000	10000	11000	12000
Lintel Size			Max Lintel Span (mm)										
Width (mm)	Depth (mm)	Grade (GL)											
65	90	GL10	1300	1140	1030	960	900	860	820	770	730	700	670
	140		2020	1770	1610	1490	1410	1340	1280	1200	1140	1090	1040
	190		2740	2400	2180	2030	1910	1810	1740	1640	1550	1480	1420
	240		3450	3030	2750	2560	2410	2290	2190	2070	1960	1870	1790
	290		4020	3640	3330	3090	2910	2770	2650	2500	2370	2260	2160
	315		4270	3870	3610	3360	3160	3010	2880	2710	2570	2450	2350
	360		4710	4270	3990	3700	3470	3290	3140	3010	2900	2800	2680
	405		5140	4620	4180	3870	3640	3440	3280	3150	3040	2940	2850
	450		5520	4790	4340	4020	3770	3580	3420	3290	3160	3060	2970
	495		5710	4950	4480	4150	3900	3700	3530	3400	3280	3170	3080
	540		5890	5110	4620	4280	4020	3810	3640	3500	3380	3270	3170
	595		6100	5290	4780	4430	4160	3940	3770	3620	3490	3380	3280
	890		7080	6110	5520	5110	4790	4540	4340	4170	4020	3890	3780
88	90	GL10	1440	1260	1140	1060	1000	950	910	870	840	810	780
	140		2230	1950	1780	1650	1550	1480	1410	1360	1310	1270	1210
	190		3020	2650	2410	2240	2110	2000	1920	1850	1780	1720	1650
	240		3750	3340	3040	2830	2660	2530	2420	2330	2250	2170	2080
	290		4320	3920	3650	3410	3220	3060	2930	2810	2720	2630	2520
	315		4590	4160	3880	3680	3490	3320	3180	3060	2950	2850	2730
	360		5060	4600	4290	4060	3890	3740	3620	3490	3370	3260	3120
	405		5520	5020	4680	4440	4240	4090	3950	3840	3740	3660	3510
	450		5960	5420	5060	4800	4590	4420	4280	4160	4050	3960	3870
	495		6390	5820	5430	5150	4930	4740	4590	4460	4350	4250	4130
	540		6810	6200	5790	5490	5260	5060	4900	4720	4550	4400	4270
	595		7310	6660	6220	5900	5640	5340	5100	4900	4730	4580	4430
	890		9670	8320	7500	6930	6500	6160	5880	5640	5440	5270	5110
135	90	GL10	1650	1450	1320	1220	1150	1090	1050	1010	970	940	910
	140		2560	2250	2050	1900	1790	1700	1630	1570	1510	1470	1420
	190		3470	3040	2770	2580	2430	2310	2210	2130	2050	1990	1930
	240		4150	3770	3500	3250	3060	2910	2790	2680	2590	2510	2440
	290		4770	4340	4050	3840	3670	3520	3370	3240	3130	3030	2950
	315		5070	4610	4310	4080	3910	3760	3640	3520	3400	3290	3200
	360		5590	5090	4750	4510	4310	4150	4020	3910	3810	3720	3640
	405		6090	5550	5190	4920	4710	4530	4390	4270	4160	4060	3980
	450		6570	5990	5610	5320	5090	4900	4750	4610	4500	4390	4300
	495		7040	6430	6010	5700	5460	5260	5100	4950	4830	4720	4620
	540		7500	6850	6410	6080	5820	5610	5440	5280	5150	5030	4930
	595		8030	7350	6880	6530	6260	6030	5840	5680	5540	5410	5300
	890		10690	9820	9220	8770	8410	8120	7860	7650	7460	7290	7140

Woodspan Max Beam length 7200mm.

RIDGE BEAM SPAN TABLE

GL8

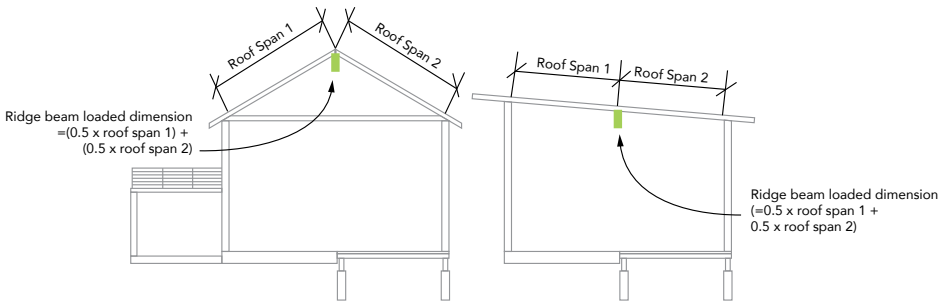


			FOR LIGHT ROOFS WITH PITCH ANGLE LESS THAN 25 DEGREES										
		Ridge Beam Loaded Dimension (mm)	2000	3000	4000	5000	6000	7000	8000	9000	10000	11000	12000
Ridge Beam Size			Max Ridge Beam Span (mm)										
Width (mm)	Depth (mm)	Grade (GL)											
65	90	GL8	1480	1290	1170	1070	970	900	840	790	750	720	690
	140		2290	2010	1830	1660	1520	1400	1310	1240	1170	1120	1070
	190		3100	2720	2450	2220	2040	1890	1770	1680	1590	1520	1450
	240		3790	3240	2890	2630	2440	2280	2150	2040	1950	1870	1800
	290		4110	3550	3190	2940	2740	2580	2440	2330	2230	2140	2070
	315		4240	3670	3310	3050	2850	2690	2560	2440	2340	2260	2180
	360		4460	3860	3490	3230	3030	2860	2730	2610	2510	2420	2350
	405		4650	4040	3660	3380	3170	3000	2860	2750	2650	2560	2480
	450		4820	4190	3790	3520	3300	3120	2980	2860	2760	2670	2590
	495		4990	4330	3920	3630	3410	3240	3090	2970	2860	2770	2680
	540		5140	4470	4040	3740	3520	3340	3190	3060	2960	2860	2780
	595		5320	4620	4180	3870	3640	3450	3300	3170	3060	2960	2870
	890		6160	5340	4820	4460	4190	3980	3800	3650	3520	3410	3310
88	90	GL8	1630	1430	1300	1210	1130	1050	980	920	880	830	800
	140		2520	2210	2020	1870	1770	1630	1530	1440	1370	1300	1250
	190		3410	3000	2730	2540	2390	2220	2080	1960	1860	1770	1690
	240		4280	3770	3440	3200	3000	2790	2610	2470	2340	2240	2140
	290		5150	4540	4140	3770	3480	3250	3070	2910	2770	2650	2550
	315		5580	4870	4350	3970	3680	3450	3260	3090	2950	2830	2720
	360		6020	5190	4660	4280	3990	3750	3550	3390	3240	3120	3000
	405		6290	5440	4910	4520	4230	3990	3790	3630	3480	3350	3240
	450		6550	5670	5110	4730	4430	4190	3990	3820	3670	3540	3430
	495		6780	5880	5310	4900	4600	4350	4150	3980	3830	3700	3590
	540		6990	6060	5480	5080	4750	4500	4290	4120	3970	3840	3720
	595		7240	6270	5670	5250	4930	4680	4460	4280	4120	3980	3860
	890		8400	7250	6540	6050	5680	5380	5140	4940	4760	4610	4470
135	90	GL8	1870	1640	1490	1390	1310	1240	1190	1140	1090	1040	990
	140		2890	2540	2320	2160	2030	1930	1850	1780	1690	1610	1550
	190		3890	3430	3130	2920	2750	2620	2510	2410	2300	2190	2100
	240		4880	4310	3940	3670	3470	3300	3160	3040	2910	2770	2660
	290		5850	5190	4750	4430	4180	3980	3810	3670	3520	3360	3210
	315		6330	5620	5150	4800	4530	4320	4140	3980	3830	3650	3490
	360		7190	6390	5860	5470	5170	4920	4720	4540	4340	4150	3980
	405		8040	7160	6570	6140	5800	5530	5300	5040	4800	4600	4410
	450		8880	7920	7280	6800	6430	6070	5730	5450	5210	4990	4800
	495		9700	8680	7980	7360	6850	6440	6090	5800	5560	5340	5140
	540		10520	9290	8350	7680	7160	6750	6400	6110	5860	5640	5440
	595		11240	9650	8680	8010	7490	7070	6720	6430	6180	5950	5750
	890		13080	11220	10100	9320	8740	8280	7900	7580	7310	7070	6850

Woodspan Max Beam length 7200mm.

RIDGE BEAM SPAN TABLE

GL10

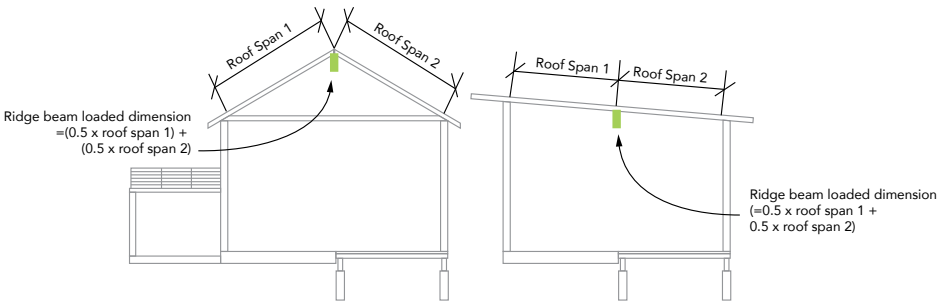


			FOR LIGHT ROOFS WITH PITCH ANGLE LESS THAN 25 DEGREES										
		Ridge Beam Loaded Dimension (mm)	2000	3000	4000	5000	6000	7000	8000	9000	10000	11000	12000
Ridge Beam Size			Max Ridge Beam Span (mm)										
Width (mm)	Depth (mm)	Grade (GL)											
65	90	GL10	1590	1390	1270	1150	1050	970	910	850	810	770	740
	140		2470	2160	1970	1790	1630	1510	1410	1330	1260	1200	1150
	190		3340	2930	2620	2370	2180	2030	1900	1800	1710	1630	1560
	240		4000	3430	3060	2800	2590	2430	2300	2180	2080	2000	1920
	290		4320	3740	3370	3100	2900	2730	2590	2470	2370	2280	2200
	315		4460	3860	3490	3220	3010	2840	2700	2590	2480	2390	2310
	360		4680	4070	3670	3400	3190	3020	2880	2760	2650	2560	2480
	405		4880	4240	3840	3550	3330	3160	3010	2890	2790	2690	2610
	450		5060	4400	3990	3690	3470	3290	3140	3010	2900	2810	2720
	495		5240	4550	4120	3820	3590	3400	3250	3120	3010	2910	2820
	540		5400	4690	4250	3930	3700	3510	3350	3220	3110	3010	2920
	595		5590	4850	4390	4070	3820	3630	3470	3330	3210	3110	3020
	890		6480	5610	5070	4690	4400	4180	3990	3830	3700	3580	3470
88	90	GL10	1760	1540	1400	1300	1220	1130	1050	990	940	900	860
	140		2720	2390	2170	2020	1900	1760	1640	1550	1470	1400	1340
	190		3670	3230	2940	2740	2580	2390	2240	2110	2000	1900	1820
	240		4610	4060	3710	3450	3210	2980	2800	2650	2520	2400	2300
	290		5550	4900	4390	4000	3710	3470	3270	3100	2960	2830	2720
	315		6000	5150	4610	4210	3910	3670	3470	3300	3150	3020	2910
	360		6330	5470	4920	4520	4220	3970	3770	3590	3440	3310	3190
	405		6620	5730	5170	4770	4460	4220	4010	3830	3680	3550	3430
	450		6880	5960	5380	4970	4660	4410	4210	4030	3880	3740	3620
	495		7120	6170	5590	5160	4830	4580	4370	4190	4040	3900	3780
	540		7340	6370	5760	5330	5010	4740	4520	4330	4180	4040	3920
	595		7600	6590	5960	5520	5180	4910	4690	4500	4340	4190	4070
	890		8820	7610	6870	6360	5970	5660	5400	5190	5000	4840	4700
135	90	GL10	2020	1770	1610	1500	1410	1340	1280	1230	1170	1110	1070
	140		3110	2740	2500	2320	2190	2080	1990	1920	1820	1740	1660
	190		4190	3700	3380	3140	2960	2820	2700	2600	2480	2360	2260
	240		5250	4650	4250	3960	3730	3550	3400	3280	3130	2990	2860
	290		6300	5590	5110	4770	4500	4290	4110	3950	3790	3610	3460
	315		6820	6050	5540	5170	4880	4650	4460	4290	4120	3930	3760
	360		7740	6890	6310	5890	5570	5300	5080	4890	4660	4450	4270
	405		8660	7710	7080	6610	6250	5960	5670	5380	5130	4910	4720
	450		9560	8530	7840	7330	6870	6450	6100	5800	5540	5320	5120
	495		10450	9350	8470	7780	7250	6820	6460	6160	5900	5670	5470
	540		11340	9770	8800	8100	7560	7130	6770	6470	6210	5980	5770
	595		11810	10150	9140	8430	7890	7460	7100	6790	6530	6290	6090
	890		13740	11790	10610	9800	9180	8700	8300	7970	7680	7430	7210

Woodspan Max Beam length 7200mm.

RIDGE BEAM SPAN TABLE

GL8

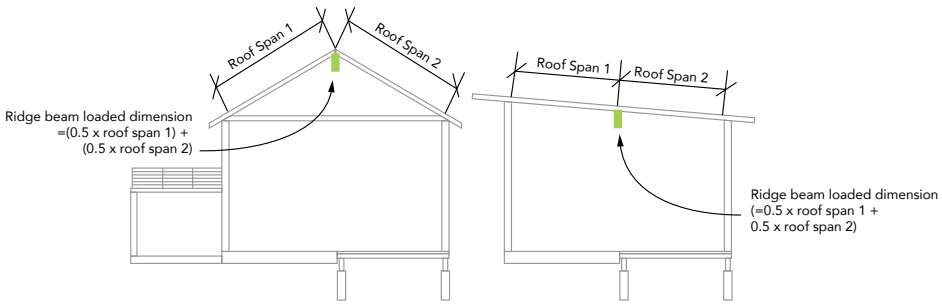


			FOR HEAVY ROOFS WITH PITCH ANGLE LESS THAN 25 DEGREES										
		Ridge Beam Loaded Dimension (mm)	2000	3000	4000	5000	6000	7000	8000	9000	10000	11000	12000
Ridge Beam Size			Max Ridge Beam Span (mm)										
Width (mm)	Depth (mm)	Grade (GL)											
65	90	GL8	1250	1090	990	920	870	820	770	730	690	660	630
	140		1940	1700	1550	1440	1350	1280	1210	1140	1080	1030	990
	190		2630	2300	2100	1950	1830	1740	1640	1550	1470	1400	1340
	240		3320	2910	2650	2460	2320	2200	2070	1950	1850	1760	1690
	290		4000	3510	3200	2970	2800	2650	2480	2340	2220	2120	2030
	315		4340	3810	3470	3200	2990	2830	2680	2530	2400	2290	2190
	360		4660	4050	3650	3380	3170	3000	2860	2740	2640	2540	2460
	405		4860	4220	3820	3530	3310	3140	3000	2870	2770	2680	2600
	450		5040	4380	3970	3670	3450	3270	3120	2990	2880	2790	2710
	495		5220	4530	4100	3800	3570	3380	3230	3110	3000	2900	2810
	540		5380	4670	4230	3910	3680	3490	3330	3200	3090	2990	2900
	595		5570	4830	4370	4050	3800	3610	3450	3310	3190	3090	3000
	890		6460	5580	5050	4670	4380	4160	3970	3810	3680	3560	3450
88	90	GL8	1380	1210	1100	1020	960	910	870	840	810	770	740
	140		2140	1880	1710	1590	1490	1420	1360	1310	1260	1200	1150
	190		2900	2540	2320	2150	2030	1930	1840	1770	1710	1630	1560
	240		3660	3210	2920	2720	2560	2430	2330	2240	2150	2050	1970
	290		4400	3870	3530	3280	3090	2940	2810	2710	2600	2480	2380
	315		4780	4200	3830	3560	3360	3190	3050	2940	2830	2700	2580
	360		5440	4790	4370	4060	3830	3640	3490	3360	3230	3080	2950
	405		6110	5380	4910	4570	4310	4100	3920	3770	3630	3460	3320
	450		6770	5940	5350	4950	4640	4390	4180	4010	3850	3720	3600
	495		7090	6150	5560	5130	4810	4550	4350	4170	4010	3880	3760
	540		7320	6340	5730	5310	4980	4710	4490	4310	4150	4020	3900
	595		7580	6560	5930	5490	5150	4890	4670	4480	4310	4170	4040
	890		8810	7590	6850	6330	5940	5630	5370	5160	4980	4820	4670
135	90	GL8	1590	1390	1270	1180	1110	1050	1010	970	930	900	880
	140		2460	2160	1970	1830	1720	1640	1570	1510	1450	1410	1370
	190		3330	2920	2660	2480	2330	2220	2120	2040	1970	1910	1860
	240		4180	3680	3360	3120	2940	2800	2680	2580	2490	2410	2350
	290		5030	4440	4050	3770	3550	3380	3240	3110	3010	2910	2830
	315		5450	4810	4390	4090	3860	3670	3510	3380	3270	3170	3080
	360		6210	5480	5010	4670	4400	4190	4010	3860	3730	3610	3510
	405		6950	6150	5620	5240	4940	4710	4510	4340	4190	4060	3950
	450		7700	6820	6240	5810	5490	5220	5000	4820	4650	4510	4390
	495		8430	7480	6850	6380	6030	5740	5500	5290	5120	4960	4820
	540		9160	8130	7450	6950	6570	6250	5990	5770	5580	5410	5260
	595		10050	8930	8190	7650	7220	6880	6590	6350	6140	5950	5790
	890		13760	11770	10580	9760	9150	8660	8270	7930	7650	7400	7180

Woodspan Max Beam length 7200mm.

RIDGE BEAM SPAN TABLE

GL10



			FOR HEAVY ROOFS WITH PITCH ANGLE LESS THAN 25 DEGREES										
		Ridge Beam Loaded Dimension (mm)	2000	3000	4000	5000	6000	7000	8000	9000	10000	11000	12000
Ridge Beam Size			Max Ridge Beam Span (mm)										
Width (mm)	Depth (mm)	Grade (GL)											
65	90	GL10	1350	1180	1070	990	940	890	830	790	750	710	680
	140		2090	1830	1670	1550	1460	1380	1300	1230	1160	1110	1060
	190		2830	2480	2260	2100	1980	1880	1760	1660	1580	1510	1440
	240		3570	3130	2850	2650	2500	2370	2230	2100	1990	1900	1820
	290		4310	3780	3440	3200	3010	2850	2670	2520	2390	2280	2180
	315		4670	4040	3650	3370	3160	2980	2840	2720	2580	2460	2360
	360		4900	4260	3840	3550	3330	3160	3010	2890	2780	2680	2600
	405		5100	4430	4020	3720	3490	3300	3150	3020	2920	2820	2730
	450		5300	4600	4170	3860	3630	3440	3290	3150	3040	2940	2850
	495		5480	4760	4310	3990	3750	3560	3400	3260	3150	3050	2960
	540		5650	4910	4440	4110	3860	3660	3500	3360	3240	3140	3050
	595		5850	5080	4590	4250	4000	3790	3620	3480	3360	3250	3150
	890		6790	5870	5300	4910	4600	4370	4170	4010	3860	3740	3630
88	90	GL10	1490	1300	1180	1100	1030	980	940	900	870	830	790
	140		2310	2020	1840	1710	1610	1530	1460	1410	1350	1290	1230
	190		3130	2740	2500	2320	2180	2080	1990	1910	1840	1750	1680
	240		3940	3460	3150	2930	2760	2620	2510	2410	2320	2210	2120
	290		4740	4170	3800	3530	3330	3170	3030	2910	2800	2670	2560
	315		5150	4530	4120	3840	3620	3440	3290	3160	3040	2900	2780
	360		5860	5160	4710	4380	4130	3920	3760	3620	3470	3310	3170
	405		6580	5800	5290	4920	4640	4410	4210	4030	3870	3730	3570
	450		7200	6250	5630	5200	4880	4620	4400	4220	4060	3920	3800
	495		7450	6460	5840	5400	5060	4790	4570	4390	4230	4090	3960
	540		7690	6660	6020	5570	5230	4960	4730	4530	4370	4230	4100
	595		7960	6890	6230	5770	5410	5130	4900	4710	4540	4390	4250
	890		9250	7970	7190	6650	6240	5910	5650	5420	5230	5060	4910
135	90	GL10	1710	1500	1360	1270	1190	1130	1080	1040	1010	980	950
	140		2650	2330	2120	1970	1850	1760	1690	1620	1570	1520	1470
	190		3580	3150	2870	2670	2510	2390	2290	2200	2130	2060	2000
	240		4510	3970	3620	3370	3170	3020	2890	2780	2680	2600	2530
	290		5420	4780	4360	4060	3830	3640	3490	3350	3240	3140	3050
	315		5870	5180	4730	4410	4150	3950	3780	3640	3520	3410	3310
	360		6680	5910	5400	5030	4740	4510	4320	4160	4020	3890	3790
	405		7490	6630	6060	5650	5330	5070	4860	4670	4520	4380	4260
	450		8290	7340	6720	6260	5910	5630	5390	5190	5010	4860	4720
	495		9080	8050	7370	6880	6490	6180	5920	5700	5510	5340	5200
	540		9870	8760	8030	7490	7070	6740	6450	6220	6010	5830	5660
	595		10820	9620	8820	8240	7780	7410	7100	6840	6610	6410	6240
	890		14450	12370	11120	10260	9610	9100	8680	8330	8030	7770	7540

Woodspan Max Beam length 7200mm.

COMPARISON TO COMPETITION

Comparison to SG8

SG8	Woodspan GL8 Alternative		
	x 65	x 88	x 135
140 x 45	140 x 65		
190 x 45	190 x 65		
240 x 45	190 x 65		
290 x 45	240 x 65		
140 x 70 (2*35)	140 x 65	140 x 88	
190 x 70 (2*35)	190 x 65	190 x 88	
240 x 70 (2*35)	240 x 65	240 x 88	
290 x 70 (2*35)	290 x 65	290 x 88	
140 x 90 (2*45)		140 x 88	140 x 135
190 x 90 (2*45)		190 x 88	190 x 135
240 x 90 (2*45)		240 x 88	240 x 135
290 x 90 (2*45)		290 x 88	240 x 135

Comparison to Prolam PL8

PL8	Woodspan GL8 Alternative		
	x 65	x 88	x 135
140 x 63	140 x 65	140 x 88	
190 x 63	190 x 65	190 x 88	
240 x 63	240 x 65	240 x 88	
290 x 63	290 x 65	290 x 88	
315 x 63	315 x 65	290 x 88	
140 x 88		140 x 88	140 x 135
190 x 88		190 x 88	190 x 135
240 x 88		240 x 88	240 x 135
290 x 88		290 x 88	290 x 135
315 x 88		315 x 88	290 x 135
360 x 88		360 x 88	315 x 135
405 x 88		405 x 88	360 x 135
450 x 88		450 x 88	405 x 135
495 x 88		495 x 88	450 x 135
540 x 88		540 x 88	495 x 135
595 x 88		595 x 88	540 x 135

Comparison to LVL11

LVL11	Woodspan GL8 Alternative		
	x 65	x 88	x 135
140 x 45	140 x 65	140 x 88	
190 x 45	190 x 65	190 x 88	
240 x 45	240 x 65	240 x 88	
300 x 45	315 x 65	290 x 88	
360 x 45	360 x 65	360 x 88	
400 x 45	405 x 65	360 x 88	
140 x 63	190 x 65	140 x 88	
190 x 63	240 x 65	190 x 88	
240 x 63	290 x 65	240 x 88	
300 x 63	360 x 65	315 x 88	
360 x 63	405 x 65	360 x 88	
400 x 63	450 x 65	405 x 88	
140 x 90		190 x 88	140 x 135
190 x 90		240 x 88	190 x 135
240 x 90		290 x 88	240 x 135
300 x 90		360 x 88	315 x 135
360 x 90		450 x 88	360 x 135
400 x 90		495 x 88	450 x 135

GL12 - GL10 - GL8 Comparison

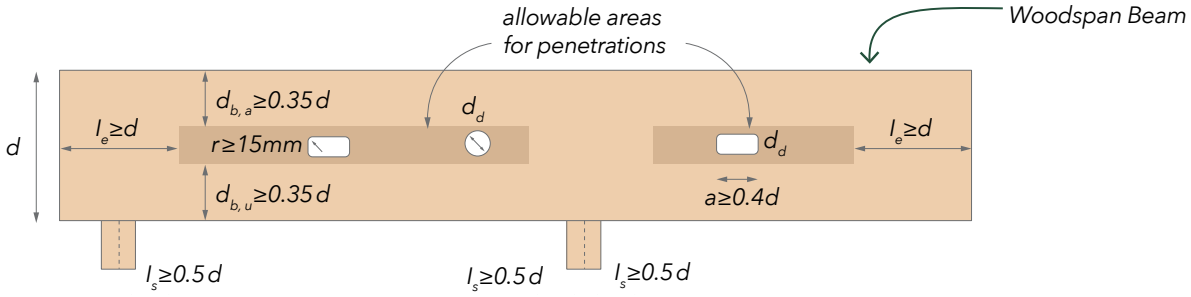
Typical GL12	Typical GL10	Woodspan GL8 alternative	
		x 88	x 135
140 x 88	190 x 88	190 x 88	140 x 135
240 x 88	290 x 88	290 x 88	240 x 135
360 x 88	405 x 88	450 x 88	360 x 135
450 x 88	495 x 88	540 x 88	450 x 135
540 x 88	595 x 88	890 x 88	540 x 135
595 x 88		890 x 88	595 x 135
140 x 135	190 x 135		190 x 135
240 x 135	290 x 135		290 x 135
360 x 135	405 x 135		450 x 135
450 x 135	495 x 135		540 x 135
540 x 135	595 x 135		890 x 135
595 x 135			890 x 135

PENETRATIONS

SED Designed Beams

Unreinforced Penetrations

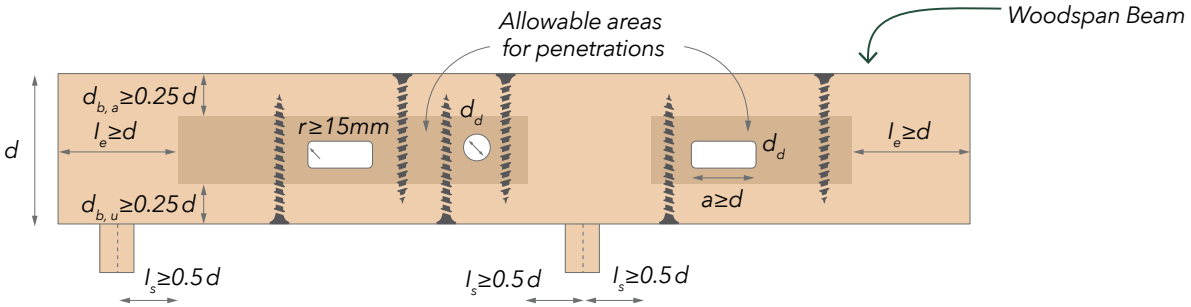
NZ Wood Design Guides: Reinforcement of Timber Members (Section 6.1).



d_d<=0.15d for unreinforced penetrations.

Reinforced Penetrations (Screws)

NZ Wood Design Guides: Reinforcement of Timber Members (Section 6.2).



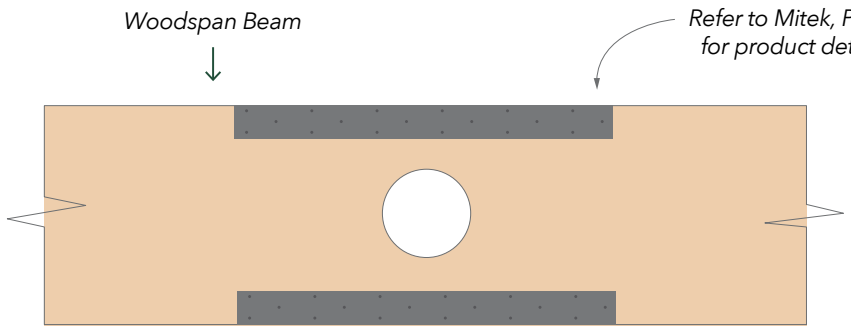
$d_d \leq 0.3d$ for penetrations with internal reinforcement (fully threaded screws or glued-in rods).

*design and spacing of reinforcement as per NZ Wood Design Guides: Reinforcement of Timber Members 6.2.1 and 6.2.2.

Once the glulam is cut or drilled, seal the open timber immediately.

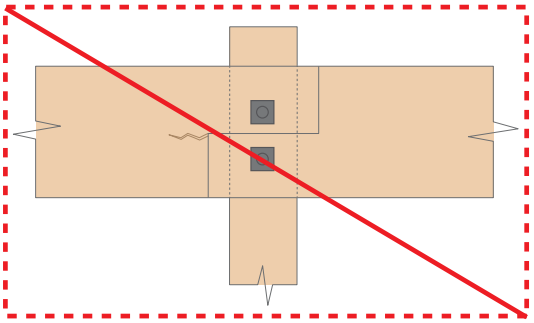
NZS 3604 Designed Beams

Reinforced penetrations (proprietary brackets) for beams in line with NZS3604 design only.

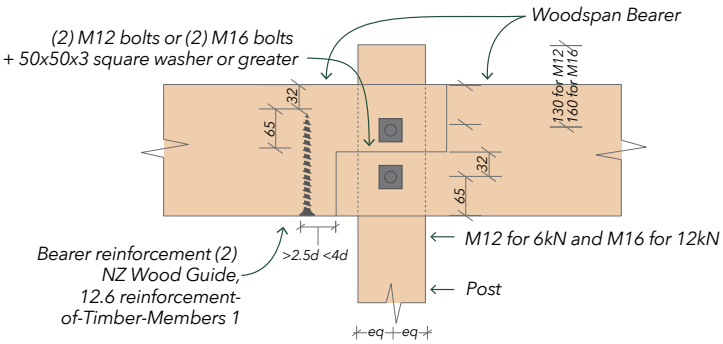


CONNECTION DETAILS

Reinforced Splice to Post

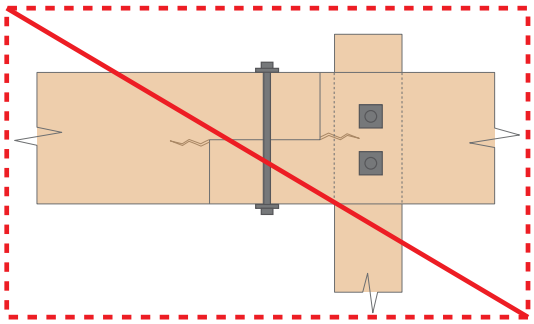


Un-reinforced notch prone to cracking under vertical downward load, which opens crack.

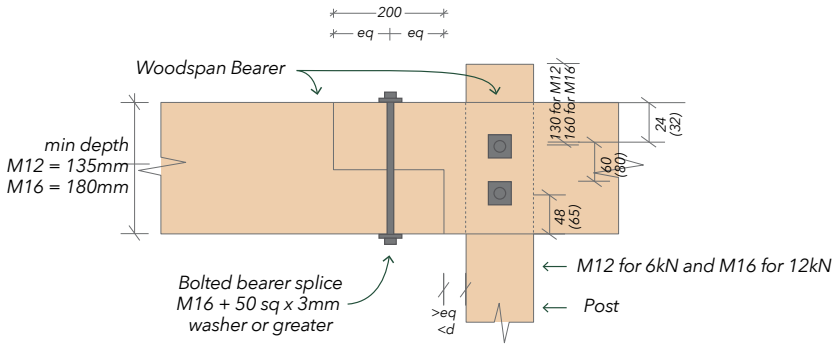


Reinforced notch prevents crack from opening under vertical downward load.

Reinforced Splice Beside Post

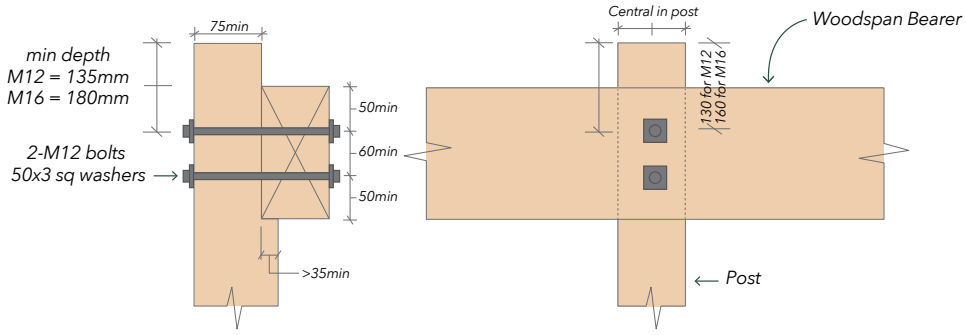


Un-reinforced notch prone to cracking under vertical downward load, which opens crack.

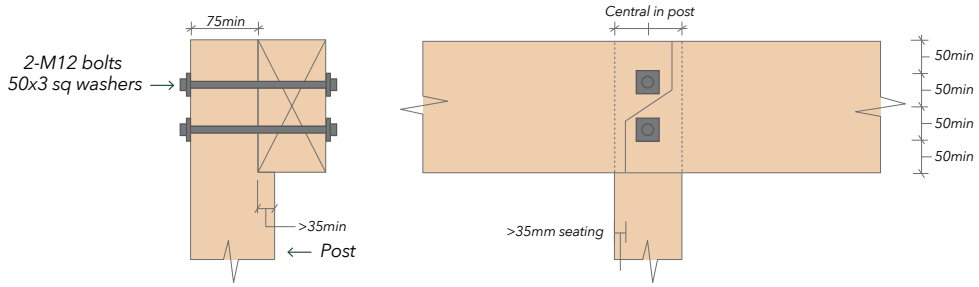


Appropriate notch orientation not prone to cracking as vertical downward load closes crack.

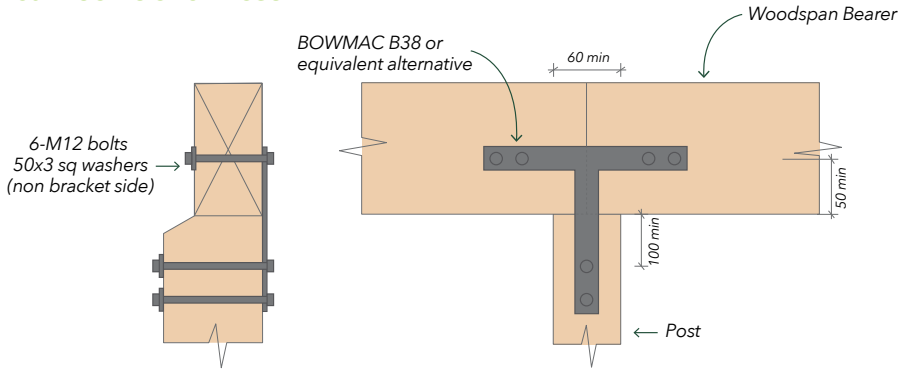
Seated Beam Fixing on Post



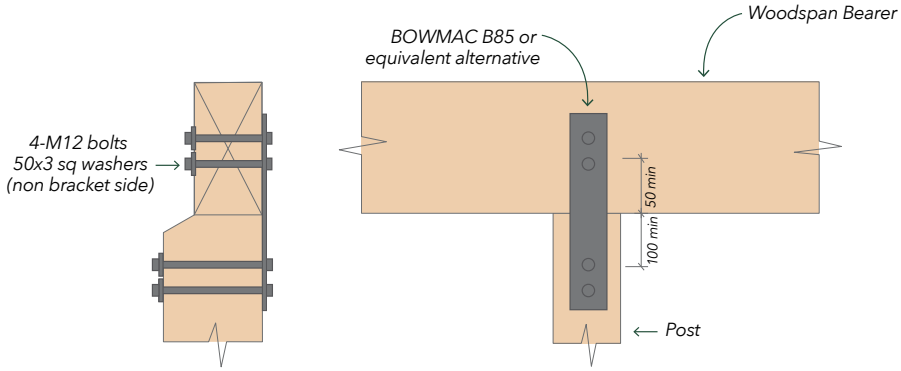
Seated Spliced Joint on Post

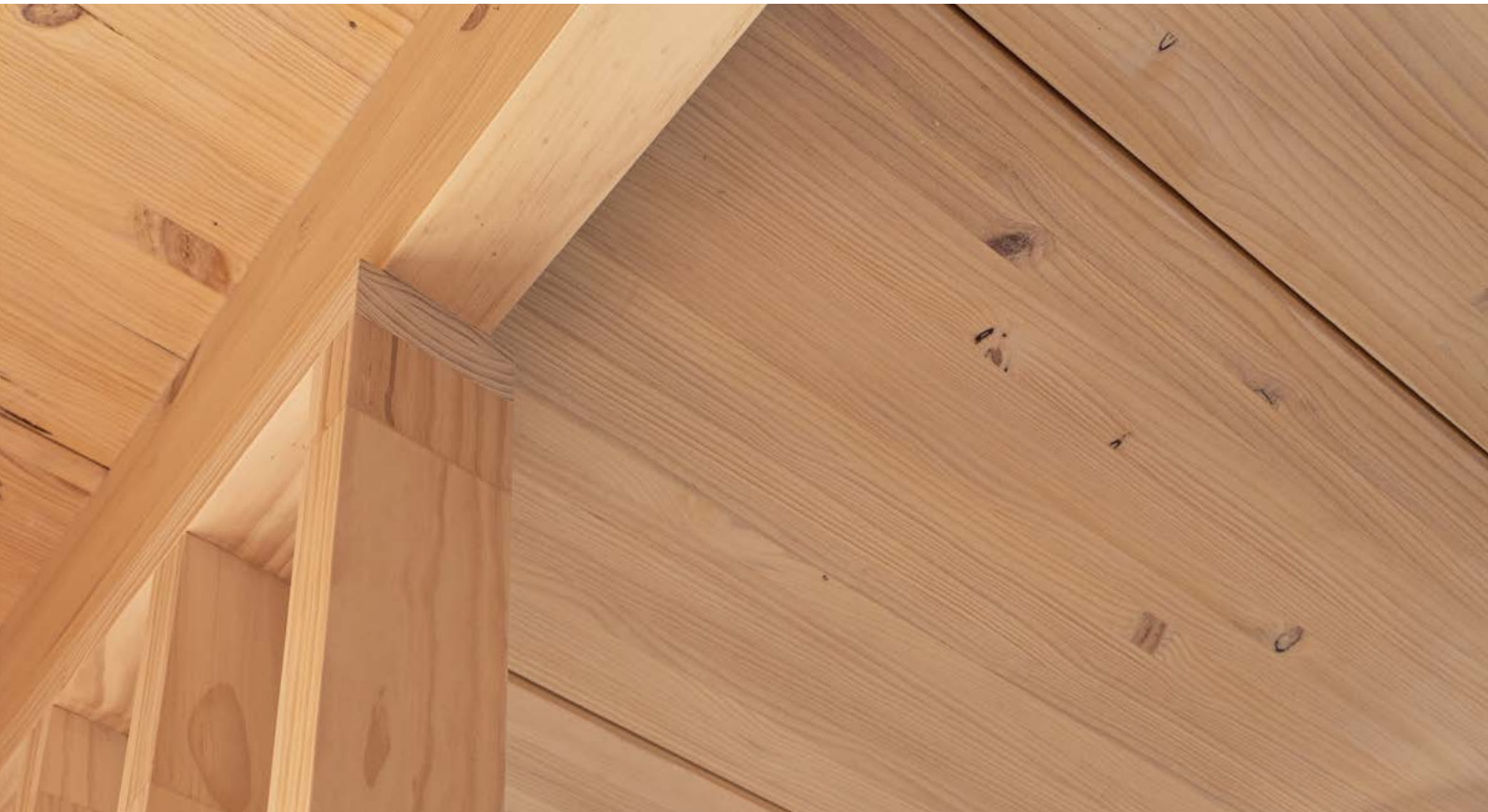


Beam Joint over Post



Beam Fixing over Post





APPENDIX

APPENDIX A

Disclaimer: Whilst every care has been taken to ensure that the span tables in this guide are accurate, the authors ENGCO Consulting Engineers take no responsibility for any errors or omissions or for any specifications or work based on its contents. Furthermore, the designer must satisfy themselves that the design assumptions listed in this guide are appropriate for the beams intended purpose.

BASIS OF ENGINEERED SPAN TABLES

Relevant Standards	
NZS3604:2011	Timber-framed buildings
NZS3603:1993	Timber structures standard
NZS AS 1720.1:2022	Timber Structures, Part 1: Design Methods
AS/NZS 1170	Structural design actions
Eurocode 5*	Design of timber structures

*(Recommendation for vibration only).

LOAD CASES

Ultimate Limit State Cases

Area	Load Case	Description
Roof – Floor – Deck	1.35G	Permanent action
	1.2G + 1.5Q	Permanent and imposed action
Roof – Deck	1.2G + Su	Permanent and wind action
Roof	0.9G + Wu	Permanent and snow action

Serviceability Limit State Cases

Area	Load Case	Description
Roof – Floor – Deck	G	Permanent deflection
	Q	Imposed deflection
	G + ΨsQ	Short term deflection
Floor – Deck	G + ΨLQ	Long term deflection
Roof – Deck	Ss	Snow deflection
	G + Ss	Permanent and snow deflection
Roof	Ws	Wind deflection
	G + Ws	Permanent and wind deflection

LOADS

Dead Loads

Area	Weight	Permanent Load – G (kPa)
Roof	Light Roof	0.3 (0.1 with wind)
	Heavy Roof	0.7 (0.4 with wind)
Roof supported by posts	Light Roof	0.2
	Heavy Roof	0.6
Floor	Light SDL	0.6
	Heavy SDL	1.2
	Deck	0.4

Roof and deck dead loads as per NZS3604:2011. Floor loads correspond to the use of PLT panels, rather than joists, with a super imposed dead load (SDL) applied. G = 0.6 kPa should be used for NZS3604:2011 loading.

Live Loads

Area	Distributed Actions	Concentrated Actions
Roof	0.25	1.1
Floor	1.5	-
Deck	2.0	-

Live loads used in these span tables appropriate for residential spaces. Beams for uses outside of residential buildings or roofs that are subject to floor like loading require specific engineering design (SED).

Wind Loads

Wind Zone	Ultimate Limit State (Wu)		Serviceability Limit State (Ws)	
	Wind Speed (Vdes) (m/s)	Design Wind Pressure (p) (kPa)	Wind Speed (Vdes) (m/s)	Design Wind Pressure (p) (kPa)
Low	32	0.62	26	0.40
Medium	37	0.82	32	0.53
High	44	1.16	35	0.76
Very High	50	1.50	40	0.98
Extra High	55	1.82	44	1.16

Wind loading as per NZS3604:2011. Cfig = 1.1 is applied for wind uplift cases.

For roofs up to 25° slope only.

Snow Loads

Snow Zone	Ultimate Limit State (Su)	Serviceability Limit State (Ss)
	Snow Load (sg)	Snow Load (sg)
kPa zones only	1.0	0.68

1.5 kPa and 2.0 kPa snow zones are outside of the scope of these span tables, designs within these zones require specific engineering design (SED).

μi = 0.7 shape factor for roofs as per NZS 3604:2011 (for roofs up to 10°).

DESIGN ACTIONS

Load Factors

Factor Type	Factor	Description
Strength reduction factor	ø = 0.8	For Glulam
Duration load factor for strength	k1 = 0.6	Permanent (Dead and live loads that are permanent)
	k1 = 0.8	Medium (Live and snow loads)
	k1 = 1.0	Brief (Wind loads)
Duration load factor for deflection	k2 = 2.0	Beams loaded for 12 months or more*
Parallel support factor	k4 = 1.0	Parallel support systems**
Column effective length	k10 = 1.0	Retrained in position only (both ends)

*1 k2 for wet conditions shall be used as 3.0 see span tables for deck bearer only.
** parallel support factor shall not be used when using property values of these tables in line with AS NZS 1328:1998- Part 1.

Deflection Limits

Load Case	Rafter	Lintel	Ridge Beam	Joist	Bearer
G + ΨlQ	L/300	L/300 ≤ 12mm	L/300	L/300	L/300
G + ΨsQ	L/300	L/300 ≤ 12mm	L/300	L/300	L/300
G + Ws	L/200 ≤ 25mm	L/200 ≤ 12mm	L/300	L/300	L/300
G + Ss	L/200 ≤ 25mm	L/300 ≤ 12mm	L/300	L/300	L/300

Deflection limits as per NZS3604:2011 L is equal to the span of the timber member.

Vibration

Location	Vibration Limit		
	NZS3604:2011	ASNZS1170	Eurocode 5
Joist	Frequency > 12Hz	1mm deflection under 0.5kN point load	0.5 mm deflection under 1kN point load
Bearer	Frequency > 12Hz	1mm deflection under 1kN point load	<0.5 mm deflection under 1kN point load

Woodspan Recommends Incorporating Eurocode 5 Increased Vibration Criteria for Beam Design When:

The project prioritizes user comfort or serviceability. Vibrations can be distracting or even nauseating in sensitive areas like offices, footbridges, or performance venues. As this is highly subjective, please find recommended criteria below.

If the beams support machinery, pedestrian traffic, or activities that induce significant dynamic loads, then considering vibration helps ensure the beams perform well under these conditions. The beams have a slender profile and low natural frequency. These characteristics make them more susceptible to excessive vibration under even moderate loads. By proactively considering vibration, you can design beams that are not only structurally sound but also meet user comfort expectations and minimize the risk of serviceability issues. Please see Suggested criteria below.

Recommended Vibration Criteria to Eurocode 5:

Criteria	Level I	Level II	Level III	Level IV	Level V	Level VI
Stiffness criteria 1kN < [mm deflection]	0.25	0.5	0.5	0.8	1.2	1.6

Selection Criteria budget and Performance Based:

Use category	Quality choice	Base choice	Economy choice
A (residential)	Level III	Level IV	Level V
B (office)	Level II	Level III	Level IV

APPENDIX B

Sustainability & Environmental Impact

The combination of carbon sequestration in growing trees and the long-term carbon storage in wood products represents a significant net sink and store of carbon and can significantly reduce the environmental impact of construction.

The environmental impact of the production of Woodspan has been assessed independently and is available in the form of a New Zealand industry average Environmental Product Declaration (EPD). www.woodspan.co.nz/environmental-product-declaration-epd-released/

An EPD is an independently verified and registered document that communicates transparent and comparable data and other relevant environmental information about the life cycle environmental impact of a product. Building materials are measured using a range of indicators, one of which is Global Warming Potential; this is measured in units of carbon dioxide equivalent (CO^2 e).

The production of Woodspan has a negative GWP (global warming potential) of **-596kg CO^2 eq/m^3**. This compares favourably to average concrete production which is **+350kg CO^2 eq/m^3**, an almost 1 tonne per m^3 difference in CO^2 released in the atmosphere.

References:

1 2022 Vol30Iss3 - Moroder - TDS Tech Note - Design of Glulam Members.

2 NZ Wood Guide, 12.6-Reinforcement-of-Timber-Members 1.

3 Reinforcement of Timber Members, ERRATA SHEET - NZ WOOD DESIGN GUIDE: CHAPTER 12.6, MAY 2024.

4 NZS3603-1993 A1 A2 A4 Timber Structures.

5 NZSAS 1720.1 Timber Structures 2022-Nov.

6 AS 1720.1. Timber Structures. Part 1: Design methods. Standards Australia, 2010.

7 AS/NZS 1328.1. Glued Laminated Structural Standard. Part 1: Performance requirements and minimum production requirements. Standards New Zealand, 1998.

8 AS/NZS 1328.2. Glued Laminated Structural Standard. Part 2: Guidelines for AS/NZS 1328: Part 1 for the selection, production and installation of glued laminated structural timber. Standards New Zealand, 1998.

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Our skilled team are with you every step of the way. We have the industry experience, technical knowledge and superior systems and processes to specify, create and deliver custom-made solutions alongside exceptional customer service.