



**BOXSPAN® RESIDENTIAL SPAN TABLES**  
Non Cyclonic up to N3 Wind Class

Joists → Bearers → Rafters → Lintels → Roof Beams

**BOXSPAN®**

FLOORING & ROOFING SYSTEMS

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## BOXSPAN SPAN TABLES

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### RESIDENTIAL FLOORS

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These Boxspan® Residential Span Tables provide detailed product, design and typical installation information. The information in this guide can be used for the design of sub-floors, second storey floors, and a number of roof types and beams including lintels.

### BOXSPAN - STEEL BEAMS USED IN AUSTRALIAN BUILDING FOR OVER 20 YEARS

Boxspan® is a roll formed beam manufactured from two interlocked "C" shaped sections of high tensile, zinc coated steel, which provide a rectangular profile resembling traditional timber. Unlike timber, the high-tensile steel and hollow section produces a strong and long spanning beam, which will not twist or sag with time. This unique system provides the benefits of a full protective zinc coating on the inside and outside of the beam.

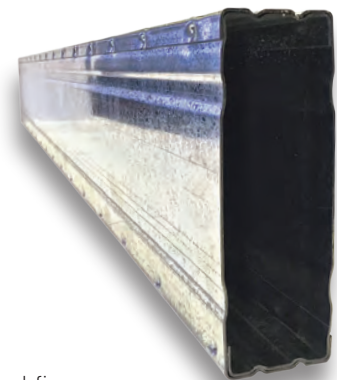
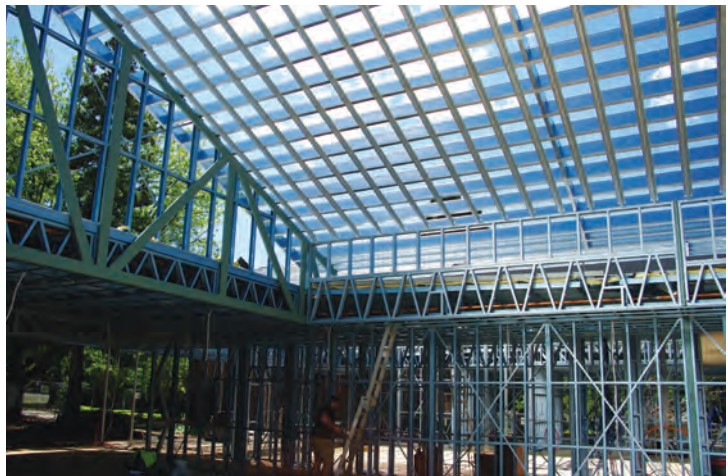
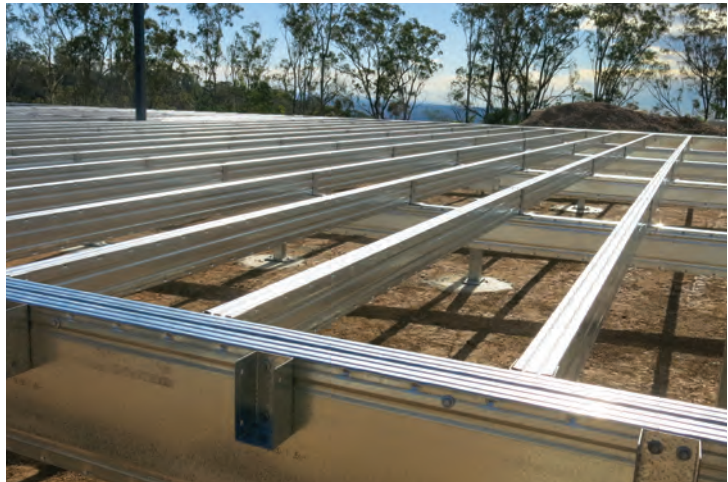
Boxspan® has the unique qualities of having a double thickness flange and a single thickness web that effectively puts the strength where it needs to be. The beam is strong, easy to use and has high torsional stability, unlike some other steel profiles.

Boxspan is manufactured in a range sizes from 100 x 50 mm to 250 x 50 mm, ensuring that an economical beam selection can be obtained for each project.

The beams are produced to controlled tolerances to the required length up to 12.5m or can be easily cut on site if necessary. The extensive range of brackets and accessories available with Boxspan makes it easy to use and a simple substitute for timber.

#### The Benefits of using Boxspan

- **Minimal maintenance**, galvanized inside and out.
- **Rolled to exact lengths**, minimal waste produced.
- **Won't rot, twist or shrink**, steel is a stable, durable product that is not permanently affected by the environment.
- **Straight and true to size**, manufactured to tight tolerances.
- **Termites won't eat it**, will not attract or harbor termites and no on-going chemical treatments required.
- **Lightweight**, the efficient use of steel allows a strong beam to be produced from thin steel sheet.
- **Easy to install**, an extensive range of brackets ensures easy fixing in a large range of applications.
- **Non-combustible**, steel is a non-flammable material and ideal for construction in bushfire prone areas.



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#### Structural Assessment of Spantec Systems BOXSPAN® Residential Span Tables BST-R-1.1 January 2016 Publication

This assessment has been certified by Spantec's third party engineers for the structural design spreadsheets and span tables as described in Spantec Systems publication BST-R-1.1 January 2016, and consider that they comply with the following Structural Provisions of the Building Code of Australia, 2014:

- Volume One, Part B1.4 (c) (ii)
- Volume Two, Part 3.4.2.0 (b)

The assessment considered the following:

- The design spreadsheets to determine the values of frame spacing, member span, and connection capacity to populate the span tables in the publication BST-R-1.1, comply with generally accepted engineering principles and the following Australian Standards:
  - AS/NZS 1170.0:2002 Structural design actions – Part 0: General principles
  - AS/NZS 1170.1:2002 Structural design actions – Part 1: Permanent imposed and other actions
  - AS/NZS 1170.2:2011 Structural design actions – Part 2: Wind actions
  - AS 4055–2012 Wind loads for housing
  - AS/NZS 4600:2005 Cold-formed steel structures
  - AS 3566.1–2002 Self-drilling screws for the building and construction industries – Part 1: General requirements and mechanical properties
  - NASH Standard: 2005 Residential and low-rise steel framing – Part 1: Design criteria
- The design capacities of: shear ( $\phi_v V_s$ ), compression ( $\phi_c N_c$ ), tension ( $\phi_t N_t$ ), and bearing ( $\phi_w R_b$ ); and connection capacities have been determined in accordance with Australian Standards AS/NZS 4600:2005 – Cold-formed steel structures and AS 3566.1:2002 – Self-drilling screws for the building and construction industries – Part 1: General requirements and mechanical properties.
- For wind loading in accordance with AS/NZS 1170.2:2002, the following assumptions were considered adequate for the pitched roof applications outlined in publication BST-R-1.0:
  - Importance Level of 2
  - Design Life of 50 years
  - Reference Probability of Exceedance (Non-Cyclonic Areas) of 1:500 (ultimate) and 1:2 (serviceability)
  - Serviceability wind speeds have a default minimum value as presented in AS 4055–2012 Wind loads for housing
- The scope of this structural assessment considers design wind pressures for Non-Cyclonic Areas only.

This certification may be considered as "Evidence of Suitability" under the Building Code of Australia 2014, Volume One Clause A2.2 (a) (iii) / Volume Two Clause 1.2.2 (a) (iii). Information in the Spantec Systems publication BST-R-1.1 not specifically referenced in this certification is outside the scope of this assessment. This certification does not relieve other parties of their responsibilities.



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Enertren Pty. Ltd.



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1. These span tables have been prepared for a range of flooring and roofing applications in non-cyclonic wind regions using Boxspan® steel beams and brackets produced by Spantec Systems Pty Ltd.
2. This Design Notes section shall be read in conjunction with Boxspan Residential Span Tables – Non Cyclonic Areas publication.
3. Spantec Boxspan and connection components, comply with the following Australian Standards:
  - AS 1397:2001 Steel sheet and strip – Hot dipped zinc-coated or aluminium/zinc-coated
  - AS 3566.1:2002 Self drilling screws
4. The design of Boxspan and connection components, comply with the following Australian Standards:
  - AS/NZS 1170.0:2002 Structural design actions – Part 0: General principles
  - AS/NZS 1170.1:2002 Structural design actions – Part 1: Permanent imposed and other actions
  - AS/NZS 1170.2:2011 Structural design actions – Part 2: Wind actions
  - AS 4055:2012 Wind loads for housing
  - AS/NZS 4600:2005 Cold-formed steel structures
  - NASH Standard, Residential and Low-rise Steel Framing, Part 1: Design Criteria 2005
5. The connection details shall be in accordance with the details in this publication. For the complete range of connections please refer to Spantec.com.au website or speak with Spantec's Technical department.
6. The loads to determine the span tables in the Spantec publication – Boxspan Residential Span Tables – Non Cyclonic Areas are as follows:

#### FLOOR LOADS

- Dead Loads: 0.75kPa (includes the weight of either particle board and carpet or up to 15mm compressed FC sheet with tiles and including Boxspan beams only).
- Dead Loads: 1.1kPa (includes the weight of either 75mm aerated concrete panels or up to 18mm compressed FC sheet with tiles and including Boxspan beams only).
- Live Loads: 1.5kPa for internal residential floor loads and deck floor loads that are no greater than 1m above ground. 2.0kPa for external deck floor loads greater than 1m above ground level.

#### ROOF LOADS

- Dead Loads: 0.20kPa, 0.40kPa (includes the weight of the roof (sheeting & flashings) and Boxspan beams only).
  - Dead Loads: 0.15kPa (includes the weight of plasterboard ceiling and Boxspan beams only).
  - Live Loads: 0.25kPa (non trafficable roof). The span tables have NOT considered the 1.4kN maintenance loading and propping and crawl boards are recommended when accessing the roof.
  - Wind Loads: Wind classes in accordance with AS4055:2012 and wind pressures in accordance with AS1170.0:2002 and AS1170.2:2002.
7. The maximum height of single storey construction allowed for in the Boxspan span tables shall be in accordance with AS/NZS 1170.2:2011 requirements.
  8. These span tables do not take into account the design, certification or structural adequacy of any:
    - Existing foundation
    - New foundation
    - Connection to the foundation
    - Connection to the existing structure
    - Structural adequacy of the structure to support additional floor and or roof loads

The builder/owner is to ensure that the necessary approvals (certifications) are obtained for the structure from a structural engineer or other relevant parties.

The builder/owner should also ensure the requirements of local authorities and government regulations are addressed.

9. Proprietary items supplied by others shall be installed in accordance with the manufacturer's specification.
10. The span tables have been prepared for attached 1 side and free-standing, 4 sides open or 3 sides open/1 enclosed sides pitched roofs that are 'Empty Under' ( $\leq 50\%$  blocking) in accordance with AS/NZS 1170.2:2002 requirements. For other awning arrangements, use the 'Awning Selection Tables' section to determine type and reduction factor.
11. The designer shall ensure that the Boxspan protective coating (Z275) meets acceptable construction practice (steel framing) reference BCA 3.4.2.1 & 2. Z600 coating is available on most products should a higher coating be required.

**SPANS**

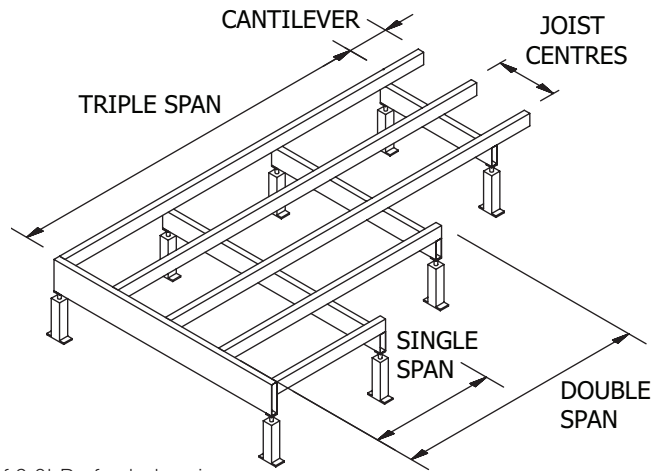
The tables in this publication refer to three types of spans. See diagram on the right. For a member to be in continuous span the smallest span must be greater than 80% of the other span/s or equal to them. Under no circumstances should there be a join unsupported.

**SPACING/CENTRES**

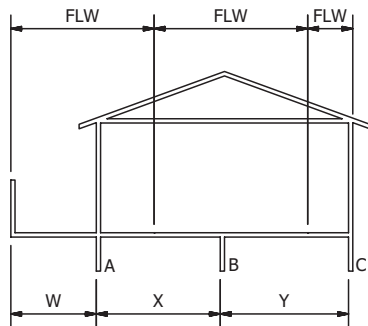
Span tables for floor joists, rafters and ceiling joist are determined using their spacing (centre to centre) to determine their respective spans. Please refer to spacing diagram above each table.

**CANTILEVER**

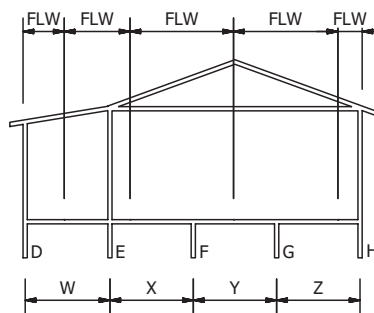
Cantilevered joists have been designed to support a live load of 3.0kPa for balconies. Care is to be taken by the builder to ensure total weather protection to prevent moisture entering the building. As a rule the back span of the member shall not be less than 2 x the cantilevered span.



**FLOOR LOAD WIDTHS**



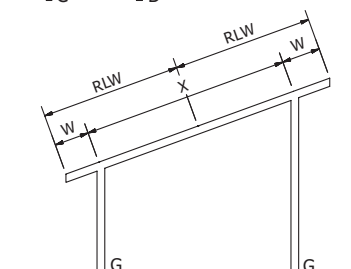
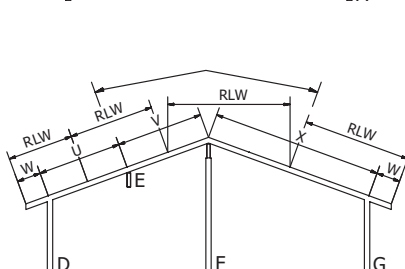
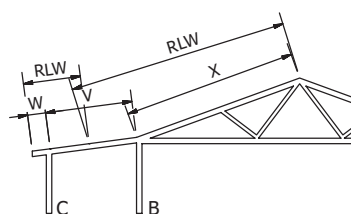
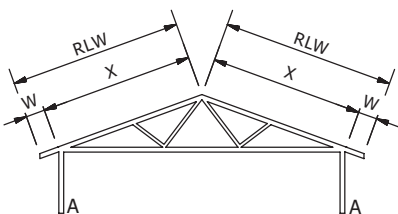
Floor with cantilevered balcony



Floor with verandah roof & deck

BEARER	FLW CALCULATION
<b>A</b>	$FLW = (X \times 0.375) + W$
<b>B</b>	$FLW = 1.25 \times \frac{(X + Y)}{2}$
<b>C</b>	$FLW = Y \times 0.375$
<b>D</b>	$FLW = \frac{W}{2}$
<b>E</b>	$FLW = (X \times 0.4) + \frac{W}{2}$
<b>F</b>	$FLW = 1.1 \times \frac{(X + Y)}{2}$
<b>G</b>	$FLW = 1.1 \times \frac{(Y + Z)}{2}$
<b>H</b>	$FLW = 0.4 \times Z$

**ROOF LOAD WIDTHS**



WALL	RLW CALCULATION
<b>A</b>	$RLW = X + W$
<b>B</b>	$RLW = X + \frac{V}{2}$
<b>C</b>	$RLW = W + \frac{V}{2}$
<b>D</b>	$RLW = W + \frac{U}{2}$
<b>E</b>	$RLW = \frac{(U + V)}{2}$
<b>F</b>	$RLW = \frac{(V + X)}{2}$
<b>G</b>	$RLW = W + \frac{X}{2}$

**JOISTS**

SUPPORTING FLOOR LOADS ONLY  
(OR DECKS LESS THAN 1m ABOVE GROUND)

- Live Load: **1.5kPa**
- Dead Load: **0.75kPa**

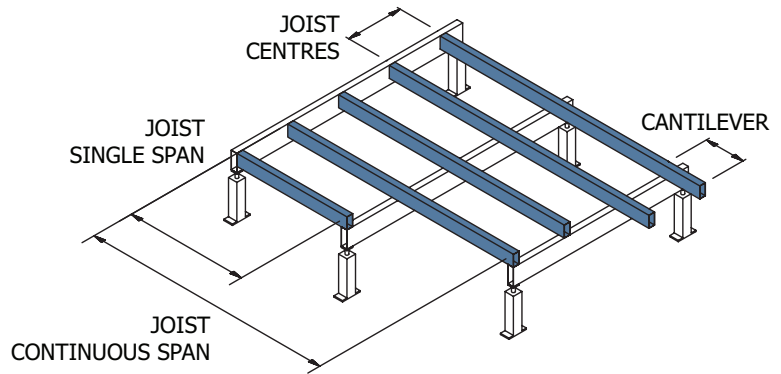


Table 1		MAXIMUM FLOOR JOIST SPAN (m)								
BOXSPAN SECTION	SINGLE SPAN			CONTINUOUS SPAN			CANTILEVERED SPAN			
	FLOOR JOIST CENTRES (mm)									
	400	450	600	400	450	600	400	450	600	
B100-12	2.48	2.38	2.20	2.77	2.50	2.27	1.33	1.28	1.03	
B100-16	2.73	2.60	2.41	3.03	2.78	2.53	1.46	1.40	1.27	
B150-12	3.02	2.90	2.73	3.93	3.52	3.20	1.64	1.44	1.09	
B150-16	3.48	3.35	3.04	4.30	4.14	3.76	2.06	1.98	1.67	
B150-20	3.74	3.55	3.22	4.62	4.44	4.03	2.22	2.13	1.94	
B200-16	4.69	4.47	4.13	5.62	5.30	4.82	2.68	2.50	2.13	
B200-20	5.03	4.80	4.43	6.02	5.78	5.25	2.89	2.78	2.52	
B250-20	6.03	5.74	5.31	7.37	6.84	6.22	3.54	3.40	3.09	

Spans governed by dynamic performance

**FLOOR PERFORMANCE**

Suspended floor frame performance can be subjective based on the end user’s perception. In order to satisfy the large majority of users it is noted that:

1. The maximum allowable spans have been designed to meet the strength and serviceability limits specified in NASH Standard, Residential and Low-rise Steel Framing, Part 1: Design Criteria 2005.
2. In some cases spans calculated by the above criteria have been reduced based on testing carried out at a NATA approved testing laboratory and extensive field testing carried out over more than 20 years.

Should a stiffer floor be required joist spans or joist spacing can be reduced or mid span blocking introduced. It is noted that floor carrying higher distributed loads (such as floor tiles or aerated concrete floors panels) or supporting non load bearing walls will be stiffer than floors carrying lower loads.

Floors will not reach their peak performance until carrying design dead loads. This includes, in particular, loads applied by internal and external walls including plasterboard and (for upper floors) ceilings fixed below.



**BEARERS**

SUPPORTING FLOOR LOADS ONLY  
(OR DECKS LESS THAN 1m ABOVE GROUND)

- Live Load: **1.5kPa**
- Dead Load: **0.75kPa**

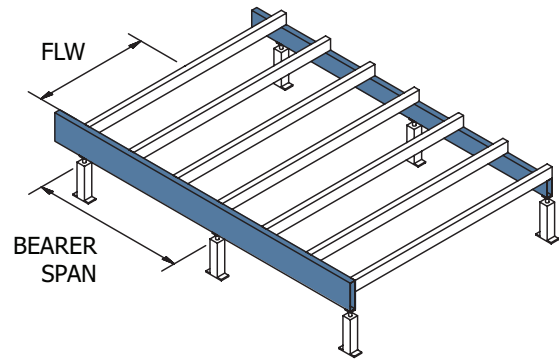


Table 2		MAXIMUM BEARER SPAN (m)										
BOXSPAN SECTION	FLOOR LOAD WIDTH – FLW (m)*											
	0.9	1.2	1.5	1.8	2.1	2.4	3.0	3.6	4.2	4.8	5.4	
<b>SINGLE SPAN**</b>												
B100-16	2.36	2.15	1.99	1.87	1.78	1.7	1.58	1.49	1.41	1.35	1.3	
B150-16	3.23	2.94	2.73	2.57	2.44	2.33	2.16	2.04	1.93	1.85	1.78	
B150-20	3.47	3.15	2.93	2.75	2.62	2.5	2.32	2.19	2.08	1.99	1.91	
B200-16	4.06	3.69	3.42	3.22	2.91	2.55	2.04	1.7	1.46	1.28	1.13	
B200-20	4.35	3.95	3.67	3.45	3.28	3.14	2.91	2.74	2.6	2.47	2.2	
B250-20	5.21	4.73	4.39	4.14	3.93	3.76	3.03	2.52	2.16	1.89	1.68	
2/B100-16	2.97	2.7	2.51	2.36	2.24	2.15	1.99	1.87	1.78	1.7	1.64	
2/B150-16	4.07	3.7	3.43	3.23	3.07	2.94	2.73	2.57	2.44	2.33	2.24	
2/B150-20	4.37	3.97	3.69	3.47	3.29	3.15	2.93	2.75	2.62	2.5	2.41	
2/B200-16	5.11	4.64	4.31	4.06	3.85	3.69	3.42	3.22	2.91	2.55	2.27	
2/B200-20	5.48	4.98	4.62	4.35	4.13	3.95	3.67	3.45	3.28	3.14	3.02	
2/B250-20	6.56	5.96	5.54	5.21	4.95	4.73	4.39	4.14	3.93	3.76	3.36	
<b>CONTINUOUS DOUBLE SPAN**</b>												
B100-16	3.16	2.65	2.26	1.97	1.76	1.59	1.33	1.13	0.97	0.85	0.75	
B150-16	3.74	3.02	2.55	2.21	1.93	1.69	1.35	1.13	0.97	0.85	0.75	
B150-20	4.65	3.87	3.3	2.89	2.57	2.32	1.95	1.65	1.42	1.24	1.1	
B200-16	4.09	3.27	2.7	2.25	1.93	1.69	1.35	1.13	0.97	0.85	0.75	
B200-20	5.26	4.27	3.61	3.14	2.78	2.48	1.98	1.65	1.42	1.24	1.1	
B250-20	5.67	4.56	3.84	3.3	2.83	2.48	1.98	1.65	1.42	1.24	1.1	
2/B100-16	3.99	3.62	3.36	3.16	2.91	2.65	2.26	1.97	1.76	1.59	1.45	
2/B150-16	5.46	4.96	4.26	3.74	3.34	3.02	2.55	2.21	1.93	1.69	1.5	
2/B150-20	5.86	5.32	4.94	4.65	4.26	3.87	3.3	2.89	2.57	2.32	2.12	
2/B200-16	6.77	5.52	4.69	4.09	3.63	3.27	2.7	2.25	1.93	1.69	1.5	
2/B200-20	7.35	6.68	5.98	5.26	4.7	4.27	3.61	3.14	2.78	2.48	2.2	
2/B250-20	8.8	7.59	6.48	5.67	5.05	4.56	3.84	3.3	2.83	2.48	2.2	
<b>CONTINUOUS TRIPLE SPAN**</b>												
B100-16	2.92	2.65	2.46	2.22	1.98	1.79	1.50	1.28	1.10	0.96	0.85	
B150-16	3.99	3.41	2.87	2.49	2.19	1.92	1.54	1.28	1.10	0.96	0.85	
B150-20	4.29	3.89	3.62	3.25	2.90	2.62	2.20	1.88	1.61	1.41	1.25	
B200-16	4.61	3.69	3.07	2.56	2.19	1.92	1.54	1.28	1.10	0.96	0.85	
B200-20	5.38	4.81	4.07	3.54	3.13	2.81	2.25	1.88	1.61	1.41	1.25	
B250-20	6.39	5.15	4.33	3.75	3.22	2.81	2.25	1.88	1.61	1.41	1.25	
2/B100-16	3.68	3.34	3.10	2.92	2.77	2.65	2.46	2.22	1.98	1.79	1.63	
2/B150-16	5.03	4.57	4.24	3.99	3.76	3.41	2.87	2.49	2.19	1.92	1.71	
2/B150-20	5.40	4.91	4.56	4.29	4.07	3.89	3.62	3.25	2.90	2.62	2.39	
2/B200-16	6.32	5.74	5.28	4.61	4.10	3.69	3.07	2.56	2.19	1.92	1.71	
2/B200-20	6.78	6.16	5.71	5.38	5.11	4.81	4.07	3.54	3.13	2.81	2.50	
2/B250-20	8.11	7.37	6.84	6.39	5.69	5.15	4.33	3.75	3.22	2.81	2.50	

\* FLW: refer to page 4 for floor load width calculations. \*\* Bearer Span: refer to page 4 for bearer span definitions.



### BEARERS

#### SUPPORTING FLOOR LOADS & LOAD BEARING WALLS (SINGLE STOREY - SHEET ROOF)

- Roof Mass: **40kg**
- Wall: **0.45kPa @ 2.7m ht**
- Live Load: **1.5kPa**
- Dead Load: **0.75kPa**

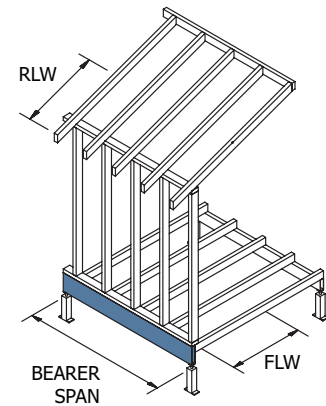


Table 3		MAXIMUM BEARER SPAN (m)															
BOXSPAN SECTION	ROOF LOAD WIDTH – RLW (m)***																
	2				4.5				6				8				
	FLOOR LOAD WIDTH – FLW (m)*																
	0.9	1.2	2.1	3.0	0.9	1.2	2.1	3.0	0.9	1.2	2.1	3.0	0.9	1.2	2.1	3.0	
<b>SINGLE SPAN**</b>																	
B100-16	1.58	1.52	1.38	1.28	1.44	1.40	1.29	1.22	1.38	1.34	1.25	1.18	1.31	1.28	1.21	1.14	
B150-16	2.16	2.08	1.89	1.75	1.97	1.92	1.77	1.66	1.89	1.84	1.72	1.62	1.80	1.75	1.65	1.57	
B150-20	2.32	2.23	2.02	1.88	2.12	2.06	1.90	1.79	2.03	1.97	1.84	1.74	1.93	1.88	1.77	1.68	
B200-16	2.71	2.61	2.12	1.61	2.48	2.40	1.86	1.46	2.37	2.31	1.74	1.39	2.25	2.09	1.60	1.29	
B200-20	2.91	2.80	2.54	2.36	2.66	2.58	2.39	2.24	2.54	2.48	2.31	2.18	2.42	2.36	2.22	2.11	
B250-20	3.48	3.35	3.04	2.40	3.18	3.09	2.77	2.17	3.05	2.96	2.58	2.06	2.89	2.83	2.37	1.92	
2/B100-16	1.99	1.91	1.74	1.61	1.66	1.61	1.49	1.40	1.74	1.69	1.58	1.49	1.65	1.61	1.52	1.44	
2/B150-16	2.72	2.62	2.38	2.21	2.27	2.20	1.86	1.46	2.38	2.32	2.16	2.04	2.26	2.21	2.08	1.97	
2/B150-20	2.92	2.81	2.55	2.37	2.67	2.59	2.40	2.25	2.55	2.49	2.32	2.19	2.43	2.37	2.23	2.12	
2/B200-16	3.42	3.28	2.98	2.77	3.12	3.03	2.80	2.63	2.99	2.91	2.71	2.56	2.84	2.77	2.61	2.48	
2/B200-20	3.66	3.52	3.20	2.97	3.35	3.25	3.01	2.82	3.20	3.12	2.91	2.75	3.04	2.97	2.80	2.66	
2/B250-20	4.39	4.22	3.83	3.56	4.01	3.89	3.60	3.38	3.84	3.74	3.48	3.29	3.65	3.56	3.35	3.18	
<b>CONTINUOUS DOUBLE SPAN**</b>																	
B100-16	2.07	1.83	1.37	1.07	1.77	1.59	1.24	0.97	1.63	1.48	1.15	0.92	1.48	1.36	1.06	0.86	
B150-16	2.32	2.04	1.40	1.07	1.95	1.70	1.24	0.97	1.75	1.55	1.15	0.92	1.54	1.38	1.06	0.86	
B150-20	3.02	2.68	2.01	1.57	2.59	2.33	1.81	1.42	2.38	2.17	1.69	1.35	2.16	1.98	1.55	1.26	
B200-16	2.40	2.04	1.40	1.07	1.95	1.70	1.24	0.97	1.75	1.55	1.15	0.92	1.54	1.38	1.06	0.86	
B200-20	3.29	2.90	2.06	1.57	2.80	2.49	1.81	1.42	2.56	2.27	1.69	1.35	2.26	2.03	1.55	1.26	
B250-20	3.49	2.99	2.06	1.57	2.85	2.49	1.81	1.42	2.56	2.27	1.69	1.35	2.26	2.03	1.55	1.26	
2/B100-16	2.67	2.56	2.32	1.90	2.44	2.36	2.11	1.76	2.33	2.27	2.01	1.69	2.21	2.16	1.88	1.60	
2/B150-16	3.65	3.47	2.62	2.12	3.33	3.04	2.37	1.94	3.10	2.83	2.25	1.84	2.82	2.59	2.10	1.71	
2/B150-20	3.92	3.76	3.39	2.78	3.58	3.47	3.09	2.58	3.42	3.33	2.94	2.47	3.25	3.18	2.75	2.34	
2/B200-16	4.29	3.78	2.81	2.14	3.65	3.29	2.47	1.94	3.36	3.05	2.31	1.84	3.04	2.77	2.12	1.71	
2/B200-20	4.91	4.72	3.71	3.01	4.49	4.29	3.37	2.79	4.30	4.00	3.19	2.67	3.98	3.67	2.99	2.51	
2/B250-20	5.88	5.26	3.95	3.14	5.08	4.59	3.57	2.84	4.69	4.27	3.38	2.69	4.25	3.91	3.10	2.51	
<b>CONTINUOUS TRIPLE SPAN**</b>																	
B100-16	1.95	1.88	1.55	1.22	1.78	1.73	1.40	1.10	1.71	1.66	1.31	1.04	1.62	1.53	1.20	0.97	
B150-16	2.62	2.30	1.59	1.22	2.21	1.93	1.40	1.10	1.99	1.76	1.31	1.04	1.75	1.57	1.20	0.97	
B150-20	2.87	2.75	2.26	1.78	2.62	2.54	2.05	1.61	2.51	2.44	1.92	1.53	2.38	2.24	1.76	1.43	
B200-16	2.73	2.32	1.59	1.22	2.21	1.93	1.40	1.10	1.99	1.76	1.31	1.04	1.75	1.57	1.20	0.97	
B200-20	3.59	3.27	2.34	1.78	3.16	2.83	2.06	1.61	2.90	2.58	1.92	1.53	2.57	2.30	1.76	1.43	
B250-20	3.94	3.39	2.34	1.78	3.24	2.83	2.06	1.61	2.91	2.58	1.92	1.53	2.57	2.30	1.76	1.43	
2/B100-16	2.46	2.36	2.15	1.99	2.25	2.18	2.02	1.89	2.15	2.09	1.95	1.84	2.04	2.00	1.88	1.78	
2/B150-16	3.36	3.23	2.94	2.39	3.07	2.98	2.68	2.20	2.94	2.86	2.54	2.09	2.80	2.73	2.37	1.95	
2/B150-20	3.61	3.47	3.15	2.93	3.30	3.20	2.96	2.78	3.16	3.07	2.87	2.71	3.00	2.93	2.76	2.62	
2/B200-16	4.22	4.06	3.19	2.43	3.86	3.71	2.81	2.20	3.69	3.45	2.62	2.09	3.43	3.14	2.41	1.95	
2/B200-20	4.53	4.35	3.95	3.40	4.14	4.01	3.72	3.14	3.96	3.86	3.60	3.01	3.76	3.68	3.37	2.85	
2/B250-20	5.42	5.21	4.46	3.56	4.96	4.81	4.03	3.23	4.74	4.62	3.82	3.06	4.51	4.40	3.53	2.85	

\* FLW: refer to page 4 for floor load width calculations. \*\* Bearer Span: Refer to page 4 for bearer span definitions. \*\*\* RLW: refer to page 4 for roof load width types.

### BEARERS

#### SUPPORTING FLOOR LOADS & LOAD BEARING WALLS (SINGLE STOREY - TILED ROOF)

- Roof Mass: **90kg**
- Wall: **0.45kPa @ 2.7m ht**
- Live Load: **1.5kPa**
- Dead Load: **0.75kPa**

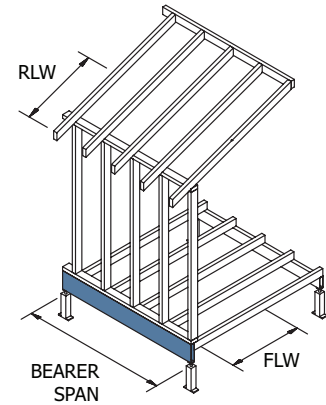


Table 4 MAXIMUM BEARER SPAN (m)																
BOXSPAN SECTION	ROOF LOAD WIDTH – RLW (m)***															
	2				4.5				6				8			
	FLOOR LOAD WIDTH – FLW (m)*															
	0.9	1.2	2.1	3.0	0.9	1.2	2.1	3.0	0.9	1.2	2.1	3.0	0.9	1.2	2.1	3.0
<b>SINGLE SPAN**</b>																
B100-16	1.44	1.40	1.36	1.29	1.25	1.23	1.20	1.16	1.17	1.16	1.14	1.10	1.10	1.08	1.07	1.04
B150-16	1.97	1.92	1.86	1.77	1.71	1.68	1.65	1.59	1.61	1.58	1.56	1.51	1.50	1.48	1.46	1.43
B150-20	2.12	2.06	2.00	1.90	1.84	1.80	1.77	1.71	1.73	1.70	1.67	1.62	1.61	1.59	1.57	1.53
B200-16	2.48	2.40	2.28	1.86	2.06	1.87	1.72	1.47	1.75	1.61	1.49	1.30	1.46	1.36	1.28	1.13
B200-20	2.66	2.58	2.51	2.39	2.31	2.26	2.22	2.14	2.17	2.13	2.10	2.03	2.02	1.99	1.97	1.92
B250-20	3.18	3.09	3.00	2.77	2.76	2.71	2.55	2.18	2.59	2.39	2.22	1.93	2.16	2.02	1.89	1.68
2/B100-16	1.82	1.76	1.63	1.53	1.58	1.54	1.46	1.40	1.48	1.46	1.39	1.33	1.38	1.36	1.31	1.27
2/B150-16	2.49	2.41	2.23	2.10	2.16	2.11	2.00	1.91	2.03	1.99	1.90	1.83	1.89	1.87	1.80	1.73
2/B150-20	2.67	2.59	2.40	2.25	2.32	2.27	2.15	2.05	2.17	2.14	2.04	1.96	2.03	2.00	1.93	1.86
2/B200-16	3.12	3.03	2.80	2.63	2.71	2.65	2.51	2.40	2.54	2.50	2.39	2.19	2.37	2.34	2.25	1.94
2/B200-20	3.35	3.25	3.01	2.82	2.91	2.85	2.70	2.57	2.73	2.68	2.56	2.46	2.55	2.51	2.42	2.34
2/B250-20	4.01	3.89	3.60	3.38	3.48	3.41	3.23	3.08	3.27	3.21	3.07	2.95	3.05	3.01	2.89	2.80
<b>CONTINUOUS DOUBLE SPAN**</b>																
B100-16	1.77	1.59	1.45	1.24	1.34	1.24	1.14	0.97	1.16	1.07	0.99	0.86	0.97	0.90	0.85	0.75
B150-16	1.95	1.70	1.51	1.24	1.37	1.24	1.14	0.97	1.16	1.07	0.99	0.86	0.97	0.90	0.85	0.75
B150-20	2.59	2.33	2.13	1.81	1.97	1.82	1.67	1.43	1.70	1.57	1.45	1.27	1.42	1.32	1.24	1.10
B200-16	1.95	1.70	1.51	1.24	1.37	1.24	1.14	0.97	1.16	1.07	0.99	0.86	0.97	0.90	0.85	0.75
B200-20	2.80	2.49	2.22	1.81	2.00	1.82	1.67	1.43	1.70	1.57	1.45	1.27	1.42	1.32	1.24	1.10
B250-20	2.85	2.49	2.22	1.81	2.00	1.82	1.67	1.43	1.70	1.57	1.45	1.27	1.42	1.32	1.24	1.10
2/B100-16	2.44	2.36	2.11	1.76	2.11	2.07	1.77	1.52	1.98	1.90	1.61	1.41	1.76	1.67	1.45	1.28
2/B150-16	3.33	3.04	2.37	1.94	2.57	2.38	1.95	1.60	2.26	2.12	1.73	1.45	1.93	1.80	1.50	1.29
2/B150-20	3.58	3.47	3.09	2.58	3.10	3.04	2.59	2.22	2.91	2.77	2.36	2.06	2.57	2.44	2.12	1.87
2/B200-16	3.65	3.29	2.47	1.94	2.74	2.48	1.95	1.60	2.32	2.14	1.73	1.45	1.93	1.80	1.50	1.29
2/B200-20	4.49	4.29	3.37	2.79	3.64	3.38	2.80	2.35	3.21	3.01	2.53	2.12	2.78	2.63	2.20	1.89
2/B250-20	5.08	4.59	3.57	2.84	3.87	3.59	2.85	2.35	3.40	3.13	2.53	2.12	2.83	2.64	2.20	1.89
<b>CONTINUOUS TRIPLE SPAN**</b>																
B100-16	1.78	1.73	1.64	1.40	1.52	1.40	1.29	1.11	1.32	1.22	1.13	0.98	1.10	1.02	0.96	0.85
B150-16	2.21	1.93	1.72	1.40	1.55	1.41	1.29	1.11	1.32	1.22	1.13	0.98	1.10	1.02	0.96	0.85
B150-20	2.62	2.54	2.40	2.05	2.22	2.06	1.89	1.62	1.93	1.78	1.65	1.44	1.61	1.50	1.41	1.25
B200-16	2.21	1.93	1.72	1.40	1.55	1.41	1.29	1.11	1.32	1.22	1.13	0.98	1.10	1.02	0.96	0.85
B200-20	3.16	2.83	2.52	2.06	2.28	2.07	1.89	1.62	1.93	1.78	1.65	1.44	1.61	1.50	1.41	1.25
B250-20	3.24	2.83	2.52	2.06	2.28	2.07	1.89	1.62	1.93	1.78	1.65	1.44	1.61	1.50	1.41	1.25
2/B100-16	2.25	2.18	2.02	1.89	1.95	1.91	1.81	1.72	1.83	1.80	1.72	1.59	1.71	1.68	1.62	1.44
2/B150-16	3.07	2.98	2.68	2.20	2.67	2.61	2.21	1.82	2.50	2.39	1.96	1.65	2.19	2.05	1.71	1.46
2/B150-20	3.30	3.20	2.96	2.78	2.86	2.81	2.66	2.51	2.69	2.64	2.52	2.32	2.51	2.47	2.38	2.11
2/B200-16	3.86	3.71	2.81	2.20	3.11	2.82	2.21	1.82	2.64	2.43	1.96	1.65	2.19	2.05	1.71	1.46
2/B200-20	4.14	4.01	3.72	3.14	3.59	3.52	3.16	2.67	3.37	3.32	2.87	2.41	3.13	2.97	2.50	2.14
2/B250-20	4.96	4.81	4.03	3.23	4.30	4.05	3.24	2.67	3.84	3.56	2.88	2.41	3.22	3.00	2.50	2.14

\* FLW: refer to page 4 for floor load width calculations. \*\* Bearer Span: Refer to page 4 for bearer span definitions. \*\*\* RLW: refer to page 4 for roof load width types.

**JOISTS**  
SUPPORTING DECKS MORE THAN  
1m ABOVE GROUND

- Live Load: **2.0kPa**
- Dead Load: **0.75kPa**

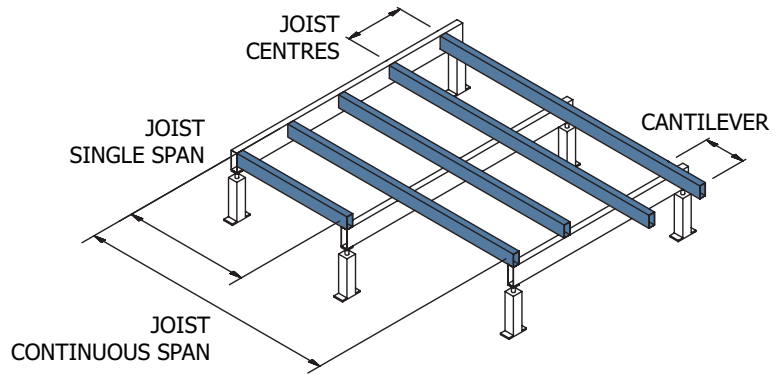


Table 5		MAXIMUM FLOOR JOIST SPAN (m)								
BOXSPAN SECTION	SINGLE SPAN			CONTINUOUS SPAN			CANTILEVERED SPAN			
	FLOOR JOIST CENTRES (mm)									
	400	450	600	400	450	600	400	450	600	
B100-12	2.48	2.38	2.20	2.77	2.50	2.27	1.33	1.28	1.03	
B100-16	2.73	2.60	2.41	3.03	2.78	2.53	1.46	1.40	1.27	
B150-12	3.02	2.90	2.73	3.93	3.52	3.20	1.64	1.44	1.09	
B150-16	3.48	3.35	3.04	4.30	4.14	3.76	2.06	1.98	1.67	
B150-20	3.74	3.55	3.22	4.62	4.44	4.03	2.22	2.13	1.94	
B200-16	4.69	4.47	4.13	5.62	5.30	4.82	2.68	2.50	2.13	
B200-20	5.03	4.80	4.43	6.02	5.78	5.25	2.89	2.78	2.52	
B250-20	6.03	5.74	5.31	7.37	6.84	6.22	3.54	3.40	3.09	

Spans governed by dynamic performance

**FLOOR PERFORMANCE**

Suspended floor frame performance can be subjective based on the end user’s perception. In order to satisfy the large majority of users it is noted that:

1. The maximum allowable spans have been designed to meet the strength and serviceability limits specified in NASH Standard, Residential and Low-rise Steel Framing, Part 1: Design Criteria 2005.
2. In some cases spans calculated by the above criteria have been reduced based on testing carried out at a NATA approved testing laboratory and extensive field testing carried out over more than 20 years.

Should a stiffer floor be required joist spans or joist spacing can be reduced or mid span blocking introduced. It is noted that floor carrying higher distributed loads (such as floor tiles or aerated concrete floors panels) or supporting non load bearing walls will be stiffer than floors carrying lower loads.

Floors will not reach their peak performance until carrying design dead loads. This includes, in particular, loads applied by internal and external walls including plasterboard and (for upper floors) ceilings fixed below.

**BEARERS**  
SUPPORTING DECKS MORE THAN  
1m ABOVE GROUND

- Decking boards
- 15mm compressed FC sheeting + tiles
- Live Load: **2.0kPa**
- Dead Load: **0.75kPa**

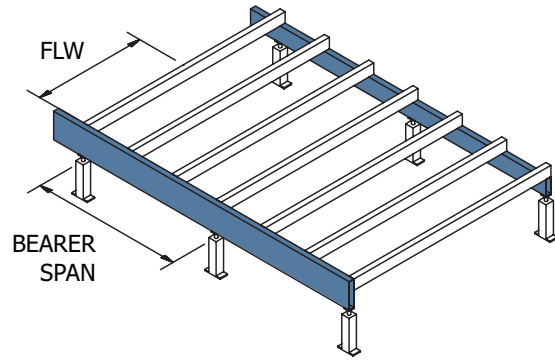


Table 6 MAXIMUM BEARER SPAN (m)											
BOXSPAN SECTION	FLOOR LOAD WIDTH – FLW (m)*										
	0.9	1.2	1.5	1.8	2.1	2.4	3.0	3.6	4.2	4.8	5.4
<b>SINGLE SPAN**</b>											
B100-16	2.15	1.95	1.81	1.70	1.62	1.55	1.44	1.35	1.28	1.23	1.18
B150-16	2.94	2.67	2.48	2.33	2.21	2.12	1.97	1.85	1.76	1.68	1.62
B150-20	3.15	2.86	2.66	2.50	2.38	2.27	2.11	1.99	1.89	1.80	1.73
B200-16	3.69	3.35	3.11	2.75	2.36	2.06	1.65	1.38	1.18	1.03	0.92
B200-20	3.95	3.59	3.33	3.14	2.98	2.85	2.65	2.49	2.29	2.00	1.78
B250-20	4.73	4.30	3.99	3.76	3.50	3.06	2.45	2.04	1.75	1.53	1.36
2/B100-16	2.70	2.46	2.28	2.15	2.04	1.95	1.81	1.70	1.62	1.55	1.49
2/B150-16	3.70	3.36	3.12	2.94	2.79	2.67	2.48	2.33	2.21	2.12	2.04
2/B150-20	3.97	3.61	3.35	3.15	2.99	2.86	2.66	2.50	2.38	2.27	2.19
2/B200-16	4.64	4.22	3.92	3.69	3.50	3.35	3.11	2.75	2.36	2.06	1.83
2/B200-20	4.98	4.53	4.20	3.95	3.76	3.59	3.33	3.14	2.98	2.85	2.74
2/B250-20	5.96	5.42	5.03	4.73	4.50	4.30	3.99	3.76	3.50	3.06	2.72
<b>CONTINUOUS DOUBLE SPAN**</b>											
B100-16	2.80	2.28	1.93	1.68	1.49	1.34	1.09	0.91	0.78	0.68	0.61
B150-16	3.20	2.57	2.16	1.82	1.56	1.37	1.09	0.91	0.78	0.68	0.61
B150-20	4.09	3.33	2.82	2.46	2.18	1.97	1.60	1.34	1.15	1.00	0.89
B200-16	3.47	2.74	2.19	1.82	1.56	1.37	1.09	0.91	0.78	0.68	0.61
B200-20	4.51	3.64	3.07	2.65	2.29	2.00	1.60	1.34	1.15	1.00	0.89
B250-20	4.84	3.87	3.21	2.67	2.29	2.00	1.60	1.34	1.15	1.00	0.89
2/B100-16	3.62	3.29	3.06	2.80	2.51	2.28	1.93	1.68	1.49	1.34	1.22
2/B150-16	4.96	4.30	3.66	3.20	2.85	2.57	2.16	1.82	1.56	1.37	1.22
2/B150-20	5.32	4.84	4.49	4.09	3.67	3.33	2.82	2.46	2.18	1.97	1.78
2/B200-16	5.83	4.73	4.00	3.47	3.08	2.74	2.19	1.82	1.56	1.37	1.22
2/B200-20	6.68	6.03	5.15	4.51	4.03	3.64	3.07	2.65	2.29	2.00	1.78
2/B250-20	7.99	6.53	5.55	4.84	4.30	3.87	3.21	2.67	2.29	2.00	1.78
<b>CONTINUOUS TRIPLE SPAN**</b>											
B100-16	2.65	2.41	2.18	1.90	1.68	1.52	1.24	1.04	0.89	0.78	0.69
B150-16	3.61	2.90	2.44	2.07	1.78	1.55	1.24	1.04	0.89	0.78	0.69
B150-20	3.89	3.54	3.18	2.77	2.46	2.22	1.82	1.52	1.30	1.14	1.01
B200-16	3.92	3.11	2.49	2.07	1.78	1.55	1.24	1.04	0.89	0.78	0.69
B200-20	4.89	4.10	3.46	3.00	2.60	2.28	1.82	1.52	1.30	1.14	1.01
B250-20	5.45	4.37	3.64	3.04	2.60	2.28	1.82	1.52	1.30	1.14	1.01
2/B100-16	3.34	3.03	2.82	2.65	2.52	2.41	2.18	1.90	1.68	1.52	1.38
2/B150-16	4.57	4.15	3.86	3.61	3.21	2.90	2.44	2.07	1.78	1.55	1.38
2/B150-20	4.91	4.46	4.14	3.89	3.70	3.54	3.18	2.77	2.46	2.22	2.02
2/B200-16	5.74	5.21	4.51	3.92	3.47	3.11	2.49	2.07	1.78	1.55	1.38
2/B200-20	6.16	5.59	5.19	4.89	4.54	4.10	3.46	3.00	2.60	2.28	2.02
2/B250-20	7.37	6.70	6.22	5.45	4.85	4.37	3.64	3.04	2.60	2.28	2.02

\* FLW: refer to page 4 for floor load width calculations. \*\* Bearer Span: refer to page 4 for bearer span definitions.



**JOISTS**

SUPPORTING FLOOR LOADS ONLY  
(OR DECKS LESS THAN 1m ABOVE  
GROUND)

- Live Load: **1.5kPa**
- Dead Load: **1.1kPa**

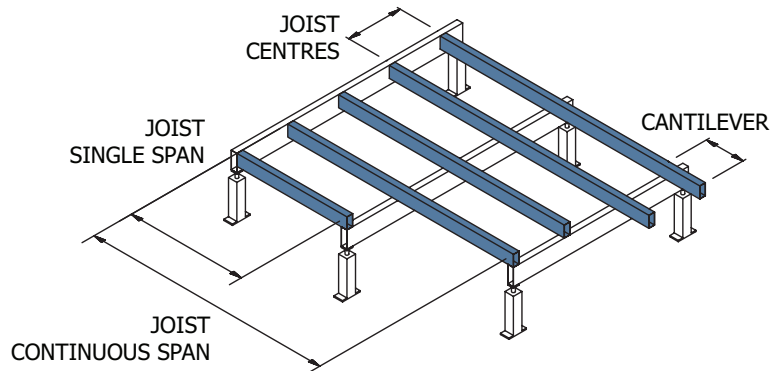


Table 7									
MAXIMUM FLOOR JOIST SPAN (m)									
BOXSPAN SECTION	SINGLE SPAN			CONTINUOUS SPAN			CANTILEVERED SPAN		
	FLOOR JOIST CENTRES (mm)								
	400	450	600	400	450	600	400	450	600
<b>B100-12</b>	2.45	2.36	2.14	2.84	2.59	2.08	1.40	1.24	0.91
<b>B100-16</b>	2.68	2.58	2.34	3.60	3.46	2.90	1.59	1.53	1.28
<b>B150-12</b>	3.36	3.23	2.93	3.16	2.84	2.13	1.61	1.41	1.07
<b>B150-16</b>	3.67	3.53	3.21	4.45	4.08	3.28	2.18	2.08	1.68
<b>B150-20</b>	3.94	3.79	3.44	5.28	5.08	4.26	2.34	2.25	2.04
<b>B200-16</b>	4.61	4.43	4.03	4.85	4.43	3.50	2.56	2.34	1.88
<b>B200-20</b>	4.94	4.75	4.32	6.29	5.78	4.66	2.93	2.82	2.46
<b>B250-20</b>	5.92	5.69	5.17	6.77	6.20	4.97	3.51	3.26	2.63

Spans governed by dynamic performance

**FLOOR PERFORMANCE**

Suspended floor frame performance can be subjective based on the end user’s perception. In order to satisfy the large majority of users it is noted that:

1. The maximum allowable spans have been designed to meet the strength and serviceability limits specified in NASH Standard, Residential and Low-rise Steel Framing, Part 1: Design Criteria 2005.
2. In some cases spans calculated by the above criteria have been reduced based on testing carried out at a NATA approved testing laboratory and extensive field testing carried out over more than 20 years.

Should a stiffer floor be required joist spans or joist spacing can be reduced or mid span blocking introduced. It is noted that floor carrying higher distributed loads (such as floor tiles or aerated concrete floors panels) or supporting non load bearing walls will be stiffer than floors carrying lower loads.

Floors will not reach their peak performance until carrying design dead loads. This includes, in particular, loads applied by internal and external walls including plasterboard and (for upper floors) ceilings fixed below.

**BEARERS**  
SUPPORTING FLOOR LOADS ONLY  
(OR DECKS LESS THAN 1m ABOVE  
GROUND)

- Live Load: 1.5kPa
- Dead Load: 1.1kPa

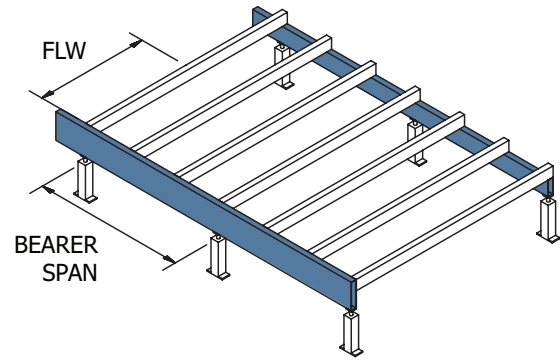


Table 8		MAXIMUM BEARER SPAN (m)										
BOXSPAN SECTION	FLOOR LOAD WIDTH – FLW (m)*											
	0.9	1.2	1.5	1.8	2.1	2.4	3.0	3.6	4.2	4.8	5.4	
SINGLE SPAN		SINGLE SPAN**										
B100-16	2.11	1.92	1.78	1.67	1.59	1.52	1.41	1.33	1.26	1.21	1.16	
B150-16	2.89	2.62	2.44	2.29	2.18	2.08	1.93	1.82	1.73	1.65	1.59	
B150-20	3.10	2.82	2.61	2.46	2.34	2.24	2.08	1.95	1.86	1.77	1.71	
B200-16	3.63	3.29	3.06	2.63	2.25	1.97	1.58	1.31	1.13	0.98	0.88	
B200-20	3.89	3.53	3.28	3.09	2.93	2.80	2.60	2.45	2.18	1.91	1.70	
B250-20	4.66	4.23	3.93	3.70	3.34	2.92	2.34	1.95	1.67	1.46	1.30	
2/B100-16	2.66	2.42	2.24	2.11	2.00	1.92	1.78	1.67	1.59	1.52	1.46	
2/B150-16	3.64	3.31	3.07	2.89	2.74	2.62	2.44	2.29	2.18	2.08	2.00	
2/B150-20	3.91	3.55	3.29	3.10	2.94	2.82	2.61	2.46	2.34	2.24	2.15	
2/B200-16	4.57	4.15	3.85	3.63	3.44	3.29	3.06	2.63	2.25	1.97	1.75	
2/B200-20	4.90	4.45	4.13	3.89	3.69	3.53	3.28	3.09	2.93	2.80	2.70	
2/B250-20	5.87	5.33	4.95	4.66	4.42	4.23	3.93	3.70	3.34	2.92	2.60	
		CONTINUOUS DOUBLE SPAN**										
B100-16	2.71	2.20	1.86	1.62	1.44	1.29	1.04	0.87	0.75	0.65	0.58	
B150-16	3.31	2.68	2.26	1.96	1.73	1.51	1.21	1.01	0.86	0.76	0.67	
B150-20	4.16	3.43	2.92	2.55	2.27	2.05	1.73	1.47	1.26	1.10	0.98	
B200-16	3.70	2.90	2.38	2.02	1.74	1.54	1.24	1.04	0.89	0.78	0.70	
B200-20	4.85	3.96	3.37	2.94	2.61	2.36	1.96	1.64	1.40	1.23	1.09	
B250-20	5.21	4.15	3.43	2.93	2.54	2.25	1.82	1.53	1.32	1.16	1.03	
2/B100-16	3.56	3.24	3.01	2.71	2.42	2.20	1.86	1.62	1.44	1.29	1.16	
2/B150-16	4.88	4.41	3.78	3.31	2.96	2.68	2.26	1.96	1.73	1.51	1.35	
2/B150-20	5.24	4.76	4.42	4.16	3.76	3.43	2.92	2.55	2.27	2.05	1.87	
2/B200-16	6.12	5.06	4.27	3.70	3.25	2.90	2.38	2.02	1.74	1.54	1.37	
2/B200-20	6.57	5.97	5.50	4.85	4.36	3.96	3.37	2.94	2.61	2.36	2.15	
2/B250-20	7.87	6.99	5.98	5.21	4.62	4.15	3.43	2.93	2.54	2.25	2.01	
		CONTINUOUS TRIPLE SPAN**										
B100-16	2.61	2.37	2.10	1.83	1.62	1.46	1.19	0.99	0.85	0.74	0.66	
B150-16	3.57	3.02	2.55	2.21	1.96	1.72	1.38	1.15	0.98	0.86	0.76	
B150-20	3.83	3.48	3.23	2.88	2.56	2.32	1.95	1.67	1.43	1.25	1.11	
B200-16	3.94	3.07	2.51	2.12	1.83	1.61	1.30	1.08	0.93	0.82	0.73	
B200-20	4.81	4.37	3.79	3.31	2.95	2.66	2.23	1.86	1.59	1.40	1.24	
B250-20	5.60	4.42	3.64	3.09	2.68	2.36	1.91	1.60	1.38	1.21	1.08	
2/B100-16	3.29	2.99	2.77	2.61	2.48	2.37	2.10	1.83	1.62	1.46	1.32	
2/B150-16	4.50	4.09	3.79	3.57	3.34	3.02	2.55	2.21	1.96	1.72	1.53	
2/B150-20	4.83	4.39	4.07	3.83	3.64	3.48	3.23	2.88	2.56	2.32	2.12	
2/B200-16	5.65	5.13	4.58	3.94	3.46	3.07	2.51	2.12	1.83	1.61	1.44	
2/B200-20	6.06	5.50	5.11	4.81	4.57	4.37	3.79	3.31	2.95	2.66	2.42	
2/B250-20	7.25	6.59	6.12	5.60	4.94	4.42	3.64	3.09	2.68	2.36	2.11	

\* FLW: refer to page 4 for floor load width calculations. \*\* Bearer Span: Refer to page 4 for bearer span definitions. \*\*\* RLW: refer to page 4 for roof load width types.

### BEARERS

#### SUPPORTING FLOOR LOADS & LOAD BEARING WALLS (SINGLE STOREY - SHEET ROOF)

- Roof Mass: **40kg**
- Wall: **0.45kPa @ 2.7m ht**
- Live Load: **1.5kPa**
- Dead Load: **1.1kPa**

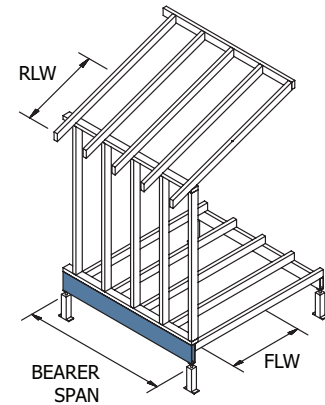


Table 9		MAXIMUM BEARER SPAN (m)															
BOXSPAN SECTION	ROOF LOAD WIDTH – RLW (m)***																
	2				4.5				6				8				
	FLOOR LOAD WIDTH – FLW (m)*																
	0.9	1.2	2.1	3.0	0.9	1.2	2.1	3.0	0.9	1.2	2.1	3.0	0.9	1.2	2.1	3.0	
<b>SINGLE SPAN**</b>																	
B100-16	1.82	1.76	1.61	1.51	1.65	1.61	1.50	1.42	1.57	1.54	1.45	1.38	1.49	1.46	1.39	1.33	
B150-16	2.49	2.41	2.21	2.07	2.26	2.20	2.06	1.95	2.15	2.11	1.99	1.89	2.04	2.00	1.90	1.82	
B150-20	2.67	2.58	2.37	2.22	2.42	2.36	2.21	2.09	2.31	2.26	2.13	2.03	2.19	2.15	2.04	1.95	
B200-16	3.12	3.02	2.77	2.24	2.83	2.76	2.41	1.96	2.70	2.64	2.20	1.82	2.56	2.44	1.98	1.67	
B200-20	3.35	3.24	2.98	2.78	3.04	2.96	2.77	2.62	2.90	2.84	2.67	2.54	2.75	2.70	2.56	2.45	
B250-20	4.01	3.88	3.56	3.32	3.64	3.55	3.32	2.91	3.47	3.40	3.20	2.70	3.29	3.23	2.94	2.47	
2/B100-16	2.29	2.21	2.03	1.90	2.08	2.03	1.89	1.79	1.98	1.94	1.83	1.74	1.88	1.84	1.75	1.67	
2/B150-16	3.13	3.03	2.78	2.60	2.84	2.77	2.59	2.45	2.71	2.65	2.50	2.38	2.57	2.52	2.40	2.29	
2/B150-20	3.36	3.25	2.99	2.79	3.05	2.98	2.78	2.63	2.91	2.85	2.68	2.55	2.76	2.71	2.57	2.46	
2/B200-16	3.93	3.80	3.49	3.27	3.57	3.48	3.26	3.08	3.41	3.33	3.14	2.99	3.23	3.17	3.01	2.88	
2/B200-20	4.22	4.08	3.75	3.50	3.83	3.73	3.49	3.30	3.65	3.57	3.37	3.20	3.46	3.40	3.23	3.09	
2/B250-20	5.05	4.88	4.49	4.20	4.59	4.47	4.18	3.96	4.37	4.28	4.03	3.84	4.15	4.07	3.86	3.70	
<b>CONTINUOUS DOUBLE SPAN**</b>																	
B100-16	2.41	2.19	1.73	1.43	2.00	1.85	1.52	1.29	1.82	1.70	1.41	1.21	1.63	1.53	1.30	1.10	
B150-16	2.94	2.66	2.09	1.72	2.43	2.25	1.83	1.50	2.21	2.06	1.69	1.40	1.97	1.85	1.52	1.28	
B150-20	3.58	3.40	2.71	2.27	3.13	2.90	2.39	2.05	2.86	2.67	2.24	1.93	2.57	2.42	2.06	1.80	
B200-16	3.22	2.88	2.17	1.74	2.59	2.36	1.86	1.53	2.32	2.13	1.71	1.43	2.03	1.88	1.54	1.31	
B200-20	4.33	3.94	3.12	2.60	3.61	3.35	2.75	2.35	3.29	3.07	2.57	2.21	2.95	2.78	2.36	2.06	
B250-20	4.58	4.12	3.14	2.53	3.73	3.41	2.71	2.24	3.35	3.09	2.50	2.09	2.94	2.74	2.26	1.92	
2/B100-16	3.07	2.97	2.73	2.41	2.79	2.71	2.54	2.19	2.66	2.60	2.39	2.08	2.52	2.47	2.21	1.94	
2/B150-16	4.20	4.06	3.51	2.95	3.81	3.72	3.11	2.67	3.64	3.46	2.91	2.53	3.33	3.14	2.69	2.36	
2/B150-20	4.51	4.36	4.01	3.74	4.09	3.99	3.73	3.41	3.90	3.82	3.60	3.24	3.70	3.63	3.44	3.04	
2/B200-16	5.27	5.03	3.94	3.24	4.60	4.24	3.44	2.89	4.18	3.88	3.19	2.71	3.72	3.48	2.91	2.50	
2/B200-20	5.66	5.47	5.03	4.34	5.13	5.00	4.57	3.95	4.90	4.79	4.29	3.74	4.64	4.55	3.98	3.51	
2/B250-20	6.77	6.55	5.54	4.60	6.15	5.94	4.87	4.13	5.85	5.46	4.54	3.88	5.24	4.92	4.16	3.60	
<b>CONTINUOUS TRIPLE SPAN**</b>																	
B100-16	2.25	2.17	1.95	1.62	2.04	1.99	1.71	1.45	1.94	1.90	1.60	1.37	1.84	1.73	1.47	1.25	
B150-16	3.07	2.97	2.36	1.95	2.74	2.53	2.07	1.71	2.49	2.32	1.92	1.59	2.23	2.09	1.73	1.45	
B150-20	3.30	3.19	2.93	2.55	2.99	2.92	2.70	2.31	2.86	2.79	2.52	2.18	2.71	2.66	2.33	2.03	
B200-16	3.43	3.05	2.29	1.82	2.74	2.49	1.95	1.60	2.44	2.24	1.79	1.49	2.13	1.98	1.62	1.37	
B200-20	4.14	4.00	3.52	2.94	3.76	3.66	3.10	2.65	3.58	3.47	2.90	2.50	3.33	3.13	2.67	2.33	
B250-20	4.90	4.39	3.32	2.67	3.96	3.61	2.85	2.35	3.55	3.26	2.63	2.20	3.11	2.89	2.38	2.02	
2/B100-16	2.83	2.74	2.51	2.35	2.57	2.50	2.34	2.22	2.45	2.40	2.26	2.15	2.32	2.28	2.16	2.07	
2/B150-16	3.87	3.75	3.44	3.22	3.52	3.43	3.21	3.01	3.35	3.28	3.09	2.85	3.18	3.12	2.96	2.66	
2/B150-20	4.16	4.02	3.69	3.45	3.77	3.68	3.44	3.26	3.60	3.52	3.32	3.16	3.41	3.35	3.18	3.04	
2/B200-16	4.86	4.70	4.22	3.44	4.41	4.30	3.66	3.06	4.21	4.12	3.39	2.87	3.97	3.70	3.09	2.64	
2/B200-20	5.21	5.04	4.63	4.33	4.73	4.61	4.32	4.08	4.52	4.42	4.16	3.96	4.28	4.20	3.99	3.81	
2/B250-20	6.24	6.04	5.55	4.92	5.67	5.52	5.17	4.40	5.41	5.29	4.86	4.13	5.12	5.03	4.44	3.82	

\* FLW: refer to page 4 for floor load width calculations. \*\* Bearer Span: Refer to page 4 for bearer span definitions. \*\*\* RLW: refer to page 4 for roof load width types.

**BEARERS**

**SUPPORTING FLOOR LOADS & LOAD BEARING WALLS  
(SINGLE STOREY - TILED ROOF)**

- Roof Mass: **90kg**
- Wall: **0.45kPa @ 2.7m ht**
- Live Load: **1.5kPa**
- Dead Load: **1.1kPa**

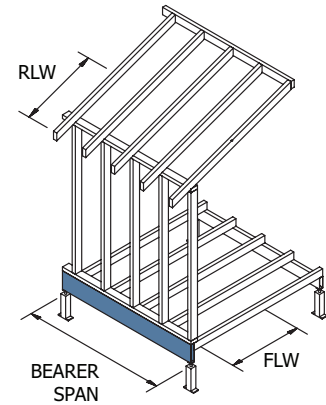


Table 10		MAXIMUM BEARER SPAN (m)															
BOXSPAN SECTION	ROOF LOAD WIDTH – RLW (m)***																
	2				4.5				6				8				
	FLOOR LOAD WIDTH – FLW (m)*																
	0.9	1.2	2.1	3.0	0.9	1.2	2.1	3.0	0.9	1.2	2.1	3.0	0.9	1.2	2.1	3.0	
<b>SINGLE SPAN**</b>																	
<b>B100-16</b>	1.65	1.61	1.50	1.42	1.42	1.40	1.33	1.28	1.33	1.31	1.26	1.22	1.24	1.22	1.19	1.15	
<b>B150-16</b>	2.26	2.20	2.06	1.95	1.94	1.91	1.83	1.76	1.82	1.80	1.73	1.67	1.69	1.68	1.62	1.58	
<b>B150-20</b>	2.42	2.36	2.21	2.09	2.09	2.05	1.96	1.88	1.95	1.93	1.86	1.79	1.82	1.80	1.74	1.69	
<b>B200-16</b>	2.83	2.76	2.41	1.96	2.31	2.15	1.79	1.53	1.93	1.82	1.55	1.35	1.58	1.50	1.31	1.17	
<b>B200-20</b>	3.04	2.96	2.77	2.62	2.62	2.57	2.46	2.36	2.45	2.42	2.33	2.25	2.28	2.26	2.19	2.13	
<b>B250-20</b>	3.64	3.55	3.32	2.91	3.13	3.08	2.65	2.27	2.86	2.69	2.30	2.00	2.34	2.23	1.95	1.73	
<b>2/B100-16</b>	2.08	2.03	1.89	1.79	1.79	1.76	1.68	1.62	1.67	1.65	1.59	1.54	1.56	1.54	1.50	1.45	
<b>2/B150-16</b>	2.84	2.77	2.59	2.45	2.45	2.41	2.30	2.21	2.29	2.26	2.18	2.11	2.14	2.11	2.05	1.99	
<b>2/B150-20</b>	3.05	2.98	2.78	2.63	2.63	2.58	2.47	2.37	2.46	2.43	2.34	2.26	2.29	2.27	2.20	2.14	
<b>2/B200-16</b>	3.57	3.48	3.26	3.08	3.07	3.02	2.89	2.78	2.88	2.84	2.73	2.64	2.68	2.65	2.57	2.33	
<b>2/B200-20</b>	3.83	3.73	3.49	3.30	3.30	3.24	3.10	2.98	3.09	3.05	2.93	2.83	2.87	2.84	2.76	2.68	
<b>2/B250-20</b>	4.59	4.47	4.18	3.96	3.95	3.88	3.71	3.57	3.70	3.65	3.51	3.39	3.44	3.40	3.30	3.21	
<b>CONTINUOUS DOUBLE SPAN**</b>																	
<b>B100-16</b>	2.00	1.85	1.52	1.29	1.47	1.39	1.18	1.01	1.27	1.20	1.03	0.89	1.04	0.99	0.87	0.77	
<b>B150-16</b>	2.43	2.25	1.83	1.50	1.77	1.65	1.37	1.17	1.48	1.39	1.19	1.04	1.21	1.15	1.01	0.90	
<b>B150-20</b>	3.13	2.90	2.39	2.05	2.32	2.20	1.90	1.68	2.02	1.93	1.70	1.51	1.73	1.66	1.47	1.31	
<b>B200-16</b>	2.59	2.36	1.86	1.53	1.79	1.67	1.40	1.20	1.50	1.42	1.22	1.07	1.24	1.18	1.04	0.93	
<b>B200-20</b>	3.61	3.35	2.75	2.35	2.67	2.52	2.18	1.90	2.31	2.21	1.93	1.68	1.96	1.87	1.64	1.46	
<b>B250-20</b>	3.73	3.41	2.71	2.24	2.61	2.44	2.05	1.77	2.20	2.08	1.79	1.57	1.82	1.74	1.53	1.37	
<b>2/B100-16</b>	2.79	2.71	2.54	2.19	2.40	2.35	2.05	1.82	2.16	2.07	1.84	1.66	1.86	1.80	1.62	1.48	
<b>2/B150-16</b>	3.81	3.72	3.11	2.67	3.02	2.86	2.49	2.21	2.64	2.52	2.23	2.00	2.26	2.18	1.96	1.79	
<b>2/B150-20</b>	4.09	3.99	3.73	3.41	3.52	3.46	3.20	2.85	3.30	3.23	2.88	2.60	2.92	2.82	2.55	2.34	
<b>2/B200-16</b>	4.60	4.24	3.44	2.89	3.32	3.13	2.66	2.31	2.84	2.70	2.34	2.07	2.38	2.28	2.02	1.81	
<b>2/B200-20</b>	5.13	5.00	4.57	3.95	4.42	4.22	3.69	3.29	3.90	3.73	3.32	3.00	3.37	3.25	2.94	2.69	
<b>2/B250-20</b>	6.15	5.94	4.87	4.13	4.72	4.46	3.82	3.34	4.07	3.87	3.38	3.00	3.43	3.29	2.93	2.63	
<b>CONTINUOUS TRIPLE SPAN**</b>																	
<b>B100-16</b>	2.04	1.99	1.71	1.45	1.66	1.57	1.35	1.15	1.44	1.37	1.17	1.02	1.19	1.13	0.99	0.88	
<b>B150-16</b>	2.74	2.53	2.07	1.71	2.00	1.88	1.56	1.33	1.68	1.58	1.35	1.18	1.38	1.31	1.15	1.02	
<b>B150-20</b>	2.99	2.92	2.70	2.31	2.58	2.48	2.15	1.90	2.28	2.18	1.92	1.72	1.95	1.87	1.67	1.49	
<b>B200-16</b>	2.74	2.49	1.95	1.60	1.88	1.75	1.47	1.26	1.58	1.49	1.27	1.11	1.30	1.24	1.08	0.97	
<b>B200-20</b>	3.76	3.66	3.10	2.65	3.01	2.85	2.46	2.16	2.61	2.49	2.19	1.91	2.23	2.13	1.86	1.65	
<b>B250-20</b>	3.96	3.61	2.85	2.35	2.75	2.57	2.16	1.85	2.31	2.19	1.88	1.64	1.91	1.82	1.60	1.43	
<b>2/B100-16</b>	2.57	2.50	2.34	2.22	2.21	2.17	2.08	2.00	2.07	2.04	1.97	1.87	1.93	1.91	1.83	1.67	
<b>2/B150-16</b>	3.52	3.43	3.21	3.01	3.03	2.98	2.81	2.49	2.83	2.80	2.52	2.26	2.55	2.46	2.21	2.02	
<b>2/B150-20</b>	3.77	3.68	3.44	3.26	3.25	3.19	3.05	2.93	3.04	3.00	2.89	2.79	2.83	2.80	2.72	2.64	
<b>2/B200-16</b>	4.41	4.30	3.66	3.06	3.54	3.33	2.82	2.44	3.01	2.86	2.47	2.17	2.51	2.40	2.12	1.90	
<b>2/B200-20</b>	4.73	4.61	4.32	4.08	4.07	4.01	3.83	3.68	3.82	3.76	3.62	3.38	3.55	3.51	3.31	3.03	
<b>2/B250-20</b>	5.67	5.52	5.17	4.40	4.88	4.76	4.07	3.54	4.34	4.12	3.58	3.17	3.64	3.49	3.09	2.77	

\* FLW: refer to page 4 for floor load width calculations. \*\* Bearer Span: Refer to page 4 for bearer span definitions. \*\*\* RLW: refer to page 4 for roof load width types.



**JOISTS**

**SUPPORTING DECKS MORE THAN 1m ABOVE GROUND**

- Live Load: **Up to 2.0kPa**
- Dead Load: **1.1kPa**

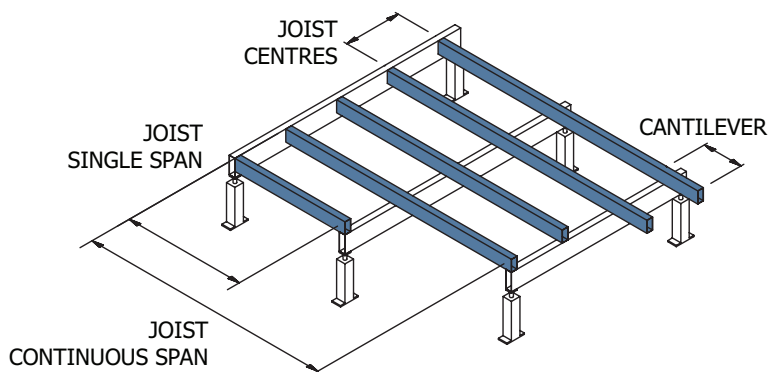


Table 11		MAXIMUM FLOOR JOIST SPAN (m)								
BOXSPAN SECTION	SINGLE SPAN			CONTINUOUS SPAN			CANTILEVERED SPAN			
	FLOOR JOIST CENTRES (mm)									
	400	450	600	400	450	600	400	450	600	
B100-12	2.45	2.36	2.14	2.84	2.59	2.08	1.40	1.24	0.91	
B100-16	2.68	2.58	2.34	3.60	3.46	2.90	1.59	1.53	1.28	
B150-12	3.36	3.23	2.93	3.16	2.84	2.13	1.61	1.41	1.07	
B150-16	3.67	3.53	3.21	4.45	4.08	3.28	2.18	2.08	1.68	
B150-20	3.94	3.79	3.44	5.28	5.08	4.26	2.34	2.25	2.04	
B200-16	4.61	4.43	4.03	4.85	4.43	3.50	2.56	2.34	1.88	
B200-20	4.94	4.75	4.32	6.29	5.78	4.66	2.93	2.82	2.46	
B250-20	5.92	5.69	5.17	6.77	6.20	4.97	3.51	3.26	2.63	

Spans governed by dynamic performance

**FLOOR PERFORMANCE**

Suspended floor frame performance can be subjective based on the end user’s perception. In order to satisfy the large majority of users it is noted that:

1. The maximum allowable spans have been designed to meet the strength and serviceability limits specified in NASH Standard, Residential and Low-rise Steel Framing, Part 1: Design Criteria 2005.
2. In some cases spans calculated by the above criteria have been reduced based on testing carried out at a NATA approved testing laboratory and extensive field testing carried out over more than 20 years.

Should a stiffer floor be required joist spans or joist spacing can be reduced or mid span blocking introduced. It is noted that floor carrying higher distributed loads (such as floor tiles or aerated concrete floors panels) or supporting non load bearing walls will be stiffer than floors carrying lower loads.

Floors will not reach their peak performance until carrying design dead loads. This includes, in particular, loads applied by internal and external walls including plasterboard and (for upper floors) ceilings fixed below.

**BEARERS**

**SUPPORTING DECKS MORE THAN 1m ABOVE GROUND**

- Live Load: **2.0kPa**
- Dead Load: **1.1kPa**

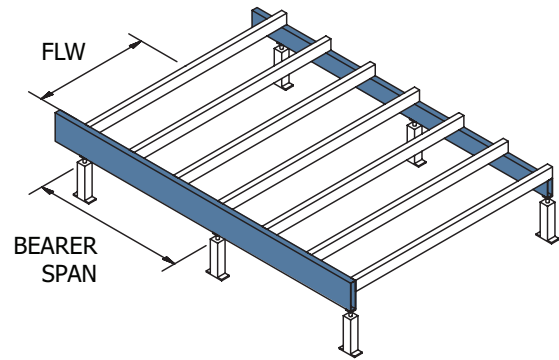


Table 12		MAXIMUM BEARER SPAN (m)										
BOXSPAN SECTION	FLOOR LOAD WIDTH – FLW (m)*											
	0.9	1.2	1.5	1.8	2.1	2.4	3.0	3.6	4.2	4.8	5.4	
<b>SINGLE SPAN**</b>												
B100-16	2.05	1.86	1.73	1.62	1.54	1.48	1.37	1.29	1.22	1.17	1.13	
B150-16	2.80	2.55	2.36	2.22	2.11	2.02	1.88	1.77	1.68	1.60	1.44	
B150-20	3.01	2.73	2.54	2.39	2.27	2.17	2.01	1.89	1.80	1.72	1.66	
B200-16	3.52	3.20	2.67	2.22	1.90	1.67	1.33	1.11	0.95	0.83	0.74	
B200-20	3.77	3.43	3.18	2.99	2.84	2.72	2.53	2.15	1.85	1.61	1.44	
B250-20	4.52	4.10	3.81	3.30	2.83	2.47	1.98	1.65	1.41	1.24	1.10	
2/B100-16	2.58	2.34	2.18	2.05	1.94	1.86	1.73	1.62	1.54	1.48	1.42	
2/B150-16	3.53	3.21	2.98	2.80	2.66	2.55	2.36	2.22	2.11	2.02	1.94	
2/B150-20	3.79	3.44	3.20	3.01	2.86	2.73	2.54	2.39	2.27	2.17	2.09	
2/B200-16	4.43	4.03	3.74	3.52	3.34	3.20	2.67	2.22	1.90	1.67	1.48	
2/B200-20	4.75	4.32	4.01	3.77	3.58	3.43	3.18	2.99	2.84	2.72	2.62	
2/B250-20	5.69	5.17	4.80	4.52	4.29	4.10	3.81	3.30	2.83	2.47	2.20	
<b>CONTINUOUS DOUBLE SPAN**</b>												
B100-16	2.40	1.94	1.64	1.42	1.26	1.10	0.88	0.74	0.63	0.55	0.49	
B150-16	2.93	2.36	1.99	1.71	1.46	1.28	1.02	0.85	0.73	0.64	0.57	
B150-20	3.73	3.04	2.58	2.25	2.00	1.80	1.49	1.25	1.07	0.93	0.83	
B200-16	3.22	2.50	2.04	1.72	1.49	1.31	1.05	0.88	0.76	0.66	0.59	
B200-20	4.32	3.51	2.97	2.59	2.29	2.06	1.66	1.39	1.19	1.04	0.92	
B250-20	4.57	3.60	2.97	2.52	2.18	1.92	1.55	1.30	1.12	0.98	0.87	
2/B100-16	3.46	3.14	2.73	2.40	2.15	1.94	1.64	1.42	1.26	1.10	0.98	
2/B150-16	4.73	3.93	3.35	2.93	2.61	2.36	1.99	1.71	1.46	1.28	1.14	
2/B150-20	5.08	4.61	4.23	3.73	3.34	3.04	2.58	2.25	2.00	1.80	1.64	
2/B200-16	5.53	4.46	3.74	3.22	2.82	2.50	2.04	1.72	1.49	1.31	1.17	
2/B200-20	6.37	5.71	4.91	4.32	3.87	3.51	2.97	2.59	2.29	2.06	1.85	
2/B250-20	7.59	6.23	5.27	4.57	4.03	3.60	2.97	2.52	2.18	1.92	1.72	
<b>CONTINUOUS TRIPLE SPAN**</b>												
B100-16	2.53	2.19	1.85	1.61	1.42	1.26	1.00	0.84	0.72	0.63	0.56	
B150-16	3.30	2.66	2.24	1.94	1.66	1.46	1.16	0.97	0.83	0.73	0.65	
B150-20	3.72	3.38	2.91	2.54	2.26	2.04	1.70	1.42	1.21	1.06	0.94	
B200-16	3.42	2.64	2.15	1.81	1.56	1.37	1.10	0.92	0.79	0.69	0.62	
B200-20	4.66	3.95	3.35	2.92	2.59	2.33	1.89	1.57	1.35	1.18	1.05	
B250-20	4.89	3.83	3.13	2.65	2.29	2.02	1.63	1.36	1.17	1.02	0.91	
2/B100-16	3.19	2.90	2.69	2.53	2.40	2.19	1.85	1.61	1.42	1.26	1.12	
2/B150-16	4.36	3.96	3.68	3.30	2.95	2.66	2.24	1.94	1.66	1.46	1.29	
2/B150-20	4.68	4.26	3.95	3.72	3.53	3.38	2.91	2.54	2.26	2.04	1.85	
2/B200-16	5.48	4.79	3.99	3.42	2.98	2.64	2.15	1.81	1.56	1.37	1.22	
2/B200-20	5.88	5.34	4.96	4.66	4.36	3.95	3.35	2.92	2.59	2.33	2.10	
2/B250-20	7.03	6.39	5.67	4.89	4.29	3.83	3.13	2.65	2.29	2.02	1.80	

\* FLW: refer to page 4 for floor load width calculations. \*\* Bearer Span: Refer to page 4 for bearer span definitions.

**LINTELS**  
SUPPORTING ROOF LOADS ONLY

- Eave Overhang: **550mm**
- Max Deflection: **5mm**
- Wind Class: **N3**

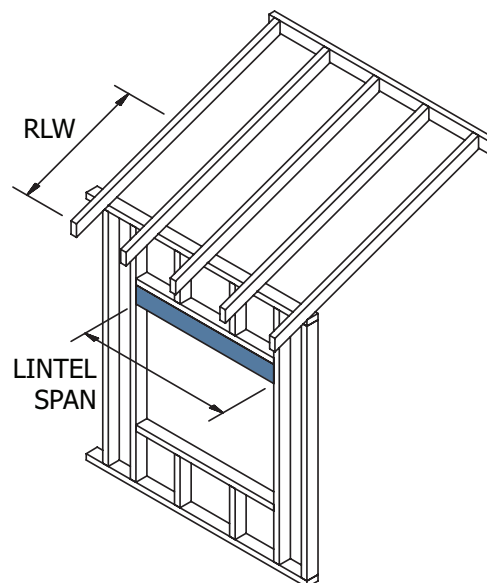


Table 13		MAXIMUM SINGLE SPAN (m)						
BOXSPAN SECTION	ROOF LOAD WIDTH – RLW (m)***							
	1.0	2.0	3.0	4.0	5.0	6.0	8.0	10.0
<b>SHEET ROOF &amp; CEILING 40kg/m<sup>2</sup></b>								
B100-16	2.76	2.49	2.32	2.19	2.09	2.01	1.89	1.80
B150-16	3.48	3.15	2.93	2.77	2.64	2.54	2.39	2.27
B150-20	3.67	3.32	3.09	2.92	2.79	2.68	2.52	2.40
B200-16	4.12	3.72	3.47	3.28	3.13	3.01	2.83	2.69
B200-20	4.34	3.93	3.65	3.46	3.30	3.18	2.99	2.84
B250-20	4.95	4.48	4.18	3.95	3.78	3.63	3.41	3.25
2/B150-20	4.31	3.91	3.65	3.45	3.30	3.18	2.99	2.85
2/B200-20	5.09	4.62	4.31	4.09	3.91	3.76	3.54	3.37
2/B250-20	5.79	5.27	4.92	4.67	4.46	4.30	4.04	3.85
<b>TILED ROOF &amp; CEILING 90kg/m<sup>2</sup></b>								
B100-16	2.33	2.08	1.92	1.81	1.73	1.66	1.55	1.48
B150-16	2.94	2.62	2.43	2.29	2.18	2.10	1.96	1.86
B150-20	3.10	2.77	2.56	2.42	2.30	2.21	2.07	1.97
B200-16	3.48	3.11	2.88	2.71	2.58	2.48	2.18	1.96
B200-20	3.67	3.28	3.04	2.86	2.73	2.62	2.46	2.33
B250-20	4.19	3.75	3.47	3.27	3.12	3.00	2.81	2.56
2/B150-20	3.66	3.28	3.04	2.87	2.73	2.63	2.46	2.34
2/B200-20	4.33	3.88	3.60	3.39	3.24	3.11	2.92	2.77
2/B250-20	4.94	4.43	4.11	3.88	3.70	3.56	3.33	3.17

\*\*\* RLW: refer to page 4 for roof load width types.

**LINTELS**  
SUPPORTING GIRDER TRUSS

- Truss Centres: **600mm**
- Eave Overhang: **550mm**
- Max Deflection: **5mm**
- Wind Class: **N3**

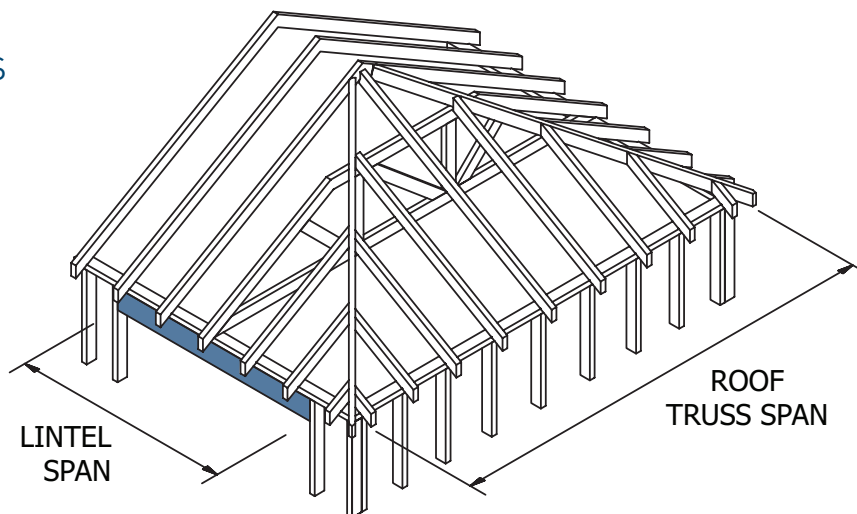


Table 14		MAXIMUM SINGLE SPAN (m)							
BOXSPAN SECTION	SHEET ROOF & CEILING – 40Kg/m <sup>2</sup>				TILED ROOF & CEILING – 90Kg/m <sup>2</sup>				
	ROOF TRUSS SPAN (m)				ROOF TRUSS SPAN (m)				
	6.0	8.0	10.0	12.0	6.0	8.0	10.0	12.0	
B100-16	1.99	1.86	1.76	1.68	1.64	1.53	1.44	1.38	
B150-16	2.51	2.35	2.22	2.13	2.07	1.93	1.82	1.74	
B150-20	2.65	2.48	2.35	2.25	2.18	2.03	1.93	1.84	
B200-16	2.97	2.78	2.63	2.52	2.45	2.28	2.16	1.97	
B200-20	3.14	2.93	2.78	2.66	2.59	2.41	2.28	2.18	
B250-20	3.59	3.35	3.18	3.04	2.96	2.76	2.61	2.50	
2/B150-20	3.14	2.94	2.78	2.67	2.59	2.42	2.29	2.19	
2/B200-20	3.72	3.48	3.30	3.16	3.07	2.86	2.71	2.59	
2/B250-20	4.25	3.97	3.77	3.61	3.51	3.27	3.10	2.96	



**LINTELS**  
SUPPORTING ROOF & SINGLE  
STOREY FLOOR LOADS

- Roof Live Load: **0.25kPa**
- Wall: **0.45kPa @ 2.7m Ht**
- Eave Overhang: **550mm**
- Floor Live Load: **1.5kPa**
- Floor Dead Load: **0.75kPa**
- Max Deflection: **5mm**

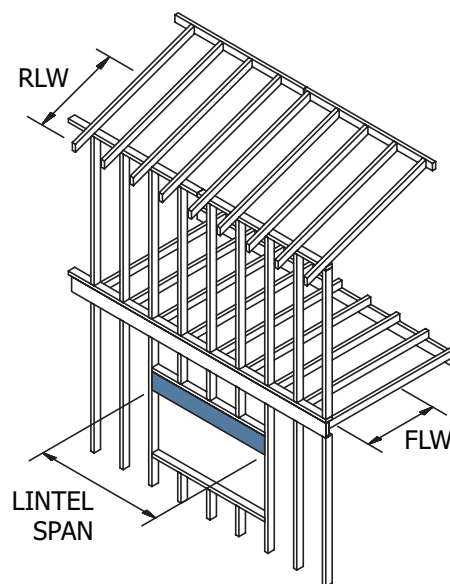
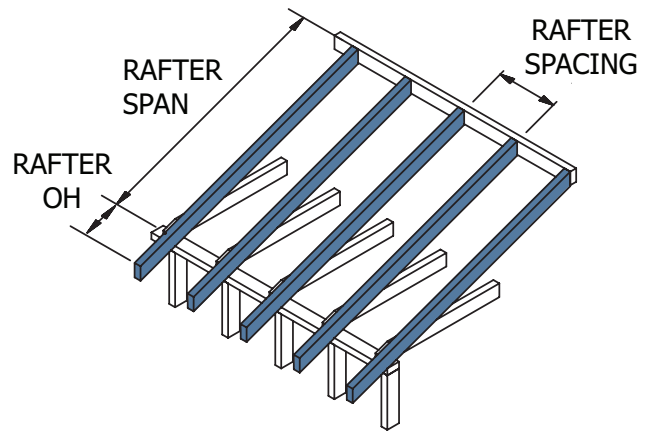


Table 15		MAXIMUM SINGLE SPAN (m)															
BOXSPAN SECTION	ROOF LOAD WIDTH – RLW (m)***																
	2				4.5				6				8				
	FLOOR LOAD WIDTH – FLW (m)*																
	0.9	1.2	2.1	3.0	0.9	1.2	2.1	3.0	0.9	1.2	2.1	3.0	0.9	1.2	2.1	3.0	
	SHEET ROOF & CEILING 40kg/m <sup>2</sup>																
<b>B100-16</b>	2.15	2.07	1.89	1.71	1.96	1.90	1.78	1.62	1.87	1.83	1.73	1.58	1.78	1.75	1.67	1.52	
<b>B150-16</b>	2.72	2.61	2.31	1.95	2.47	2.40	2.15	1.86	2.37	2.31	2.07	1.81	2.25	2.21	1.98	1.74	
<b>B150-20</b>	2.87	2.76	2.52	2.35	2.61	2.54	2.37	2.24	2.50	2.44	2.30	2.19	2.38	2.33	2.22	2.11	
<b>B200-16</b>	3.22	2.91	2.35	1.99	2.86	2.63	2.19	1.89	2.68	2.49	2.11	1.84	2.49	2.34	2.01	1.77	
<b>B200-20</b>	3.40	3.26	2.99	2.57	3.09	3.00	2.81	2.44	2.96	2.89	2.73	2.37	2.82	2.76	2.60	2.29	
<b>B250-20</b>	3.88	3.73	3.06	2.60	3.53	3.43	2.86	2.47	3.38	3.25	2.75	2.40	3.22	3.05	2.63	2.31	
TILED ROOF & CEILING 90kg/m <sup>2</sup>																	
<b>B100-16</b>	1.92	1.87	1.76	1.61	1.69	1.66	1.60	1.46	1.60	1.58	1.53	1.39	1.51	1.50	1.43	1.31	
<b>B150-16</b>	2.43	2.37	2.12	1.84	2.14	2.10	1.87	1.67	2.02	1.97	1.76	1.59	1.87	1.80	1.63	1.49	
<b>B150-20</b>	2.56	2.50	2.35	2.22	2.26	2.22	2.13	2.02	2.14	2.11	2.04	1.92	2.02	2.00	1.94	1.81	
<b>B200-16</b>	2.79	2.57	2.16	1.87	2.29	2.17	1.90	1.70	2.10	2.00	1.79	1.61	1.90	1.83	1.66	1.52	
<b>B200-20</b>	3.04	2.96	2.78	2.42	2.67	2.63	2.46	2.19	2.53	2.50	2.31	2.09	2.39	2.37	2.15	1.96	
<b>B250-20</b>	3.47	3.36	2.81	2.44	2.99	2.83	2.48	2.21	2.74	2.61	2.33	2.10	2.48	2.39	2.17	1.98	

\* FLW: refer to page 4 for floor load width calculations. \*\*\* RLW: refer to page 4 for roof load width types.

**RAFTERS**

- Roof Live Load: **0.25kPa**
- Terrain: **Suburban Sheltered**
- Wind Class: **N3**



**Table 16** **MAXIMUM RAFTER SPAN (m)**

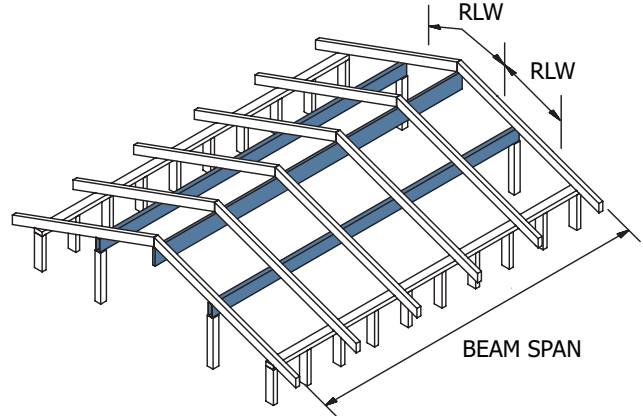
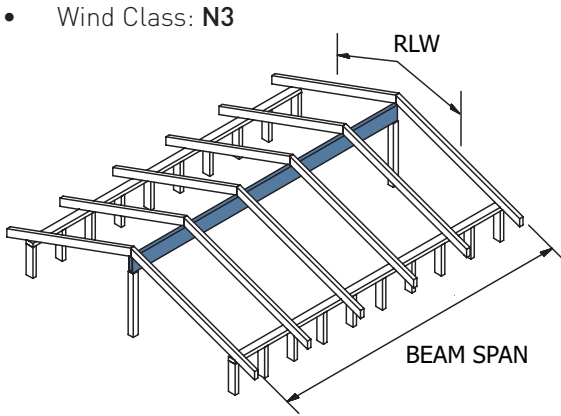
BOXSPAN SECTION	SINGLE SPAN						CONTINUOUS SPAN					
	RAFTER SPACING (m)						RAFTER SPACING (m)					
	0.45	0.6	0.9	1.2	1.5	1.8	0.45	0.6	0.9	1.2	1.5	1.8
<b>SHEET ROOF &amp; CEILING 40kg/m<sup>2</sup></b>												
<b>B100-12</b>	4.62	4.23	3.73	3.41	3.17	2.99	6.19	5.67	5.00	4.56	4.25	4.01
<b>B100-16</b>	5.01	4.61	4.07	3.72	3.47	3.27	6.72	6.18	5.46	4.99	4.65	4.39
<b>B150-12</b>	6.25	5.74	5.07	4.63	4.32	4.07	8.37	7.35	6.06	5.28	4.74	4.33
<b>B150-16</b>	6.77	6.24	5.53	5.06	4.72	4.46	9.08	8.37	7.41	6.79	6.33	5.92
<b>B150-20</b>	7.19	6.65	5.91	5.42	5.06	4.78	9.64	8.91	7.92	7.26	6.78	6.40
<b>B200-16</b>	8.41	7.77	6.90	6.32	5.90	5.57	11.21	9.86	8.18	7.14	6.42	5.88
<b>B200-20</b>	8.92	8.26	7.36	6.76	6.32	5.97	11.96	11.07	9.87	9.06	8.23	7.54
<b>B250-20</b>	10.58	9.82	8.77	8.06	7.53	7.12	14.09	12.46	10.40	9.10	8.20	7.52
<b>TILED ROOF &amp; CEILING 90kg/m<sup>2</sup></b>												
<b>B100-12</b>	3.59	3.28	2.88	2.62	2.43	2.29	4.82	4.40	3.86	3.51	3.26	3.07
<b>B100-16</b>	3.93	3.59	3.15	2.87	2.67	2.51	5.26	4.81	4.22	3.85	3.58	3.37
<b>B150-12</b>	4.89	4.46	3.92	3.57	3.32	3.13	6.43	5.60	4.60	4.00	3.58	3.27
<b>B150-16</b>	5.34	4.88	4.29	3.91	3.64	3.43	7.15	6.54	5.75	5.25	4.88	4.48
<b>B150-20</b>	5.70	5.22	4.60	4.20	3.91	3.68	7.65	7.00	6.17	5.63	5.24	4.94
<b>B200-16</b>	6.66	6.10	5.37	4.90	4.56	4.30	8.66	7.57	6.24	5.43	4.87	4.45
<b>B200-20</b>	7.11	6.52	5.75	5.25	4.89	4.61	9.53	8.75	7.71	6.97	6.25	5.72
<b>B250-20</b>	8.47	7.78	6.87	6.27	5.84	5.51	10.99	9.64	7.97	6.95	6.24	5.71

**MAXIMUM RAFTER OVERHANG (m)**

BOXSPAN SECTION	RAFTER SPACING (m)						RAFTER SPACING (m)					
	RAFTER SPACING (m)						RAFTER SPACING (m)					
	0.45	0.6	0.9	1.2	1.5	1.8	0.45	0.6	0.9	1.2	1.5	1.8
<b>SHEET ROOF &amp; CEILING 40kg/m<sup>2</sup></b>												
<b>B100-12</b>	2.45	2.28	2.06	1.91	1.71	1.55	2.02	1.88	1.70	1.58	1.49	1.40
<b>B100-16</b>	2.63	2.45	2.21	2.06	1.95	1.85	2.17	2.02	1.83	1.70	1.61	1.53
<b>B150-12</b>	3.11	2.89	2.61	2.17	1.74	1.45	2.56	2.39	2.16	2.01	1.90	1.81
<b>B150-16</b>	3.34	3.11	2.81	2.61	2.47	2.34	2.75	2.56	2.32	2.16	2.04	1.95
<b>B150-20</b>	3.53	3.29	2.97	2.76	2.61	2.50	2.91	2.71	2.45	2.28	2.16	2.06
<b>B200-16</b>	3.97	3.69	3.34	3.10	2.94	2.66	3.27	3.04	2.75	2.56	2.42	2.31
<b>B200-20</b>	4.19	3.90	3.53	3.28	3.10	2.97	3.46	3.22	2.91	2.71	2.56	2.45
<b>B250-20</b>	4.80	4.47	4.04	3.76	3.55	3.40	3.96	3.69	3.33	3.10	2.93	2.80
<b>TILED ROOF &amp; CEILING 90kg/m<sup>2</sup></b>												

**RIDGE & INTERMEDIATE BEAMS**

- Roof Live Load: **0.25kPa**
- Terrain: **Suburban Sheltered**
- Wind Class: **N3**



**Table 17** MAXIMUM BEAM SPAN BETWEEN SUPPORTS (m)

BOXSPAN SECTION	SINGLE SPAN							CONTINUOUS SPAN						
	ROOF LOAD WIDTH RLW (m)***							ROOF LOAD WIDTH RLW (m)***						
	2.0	3.0	4.0	5.0	6.0	8.0	9.0	2.0	3.0	4.0	5.0	6.0	8.0	9.0
<b>SHEET ROOF &amp; CEILING 40kg/m<sup>2</sup></b>														
<b>B100-16</b>	3.16	2.77	2.53	2.35	2.21	2.01	1.93	4.24	3.72	3.38	3.10	2.83	2.46	2.32
<b>B150-16</b>	4.31	3.78	3.45	3.20	3.02	2.74	2.64	5.62	4.61	4.00	3.58	3.28	2.84	2.68
<b>B150-20</b>	4.62	4.06	3.70	3.44	3.24	2.95	2.84	6.19	5.44	4.83	4.33	3.96	3.43	3.24
<b>B200-16</b>	5.39	4.74	4.31	4.01	3.78	3.44	3.25	5.59	4.59	3.98	3.57	3.26	2.83	2.67
<b>B200-20</b>	5.78	5.08	4.63	4.31	4.06	3.70	3.56	7.17	5.89	5.12	4.59	4.19	3.64	3.43
<b>B250-20</b>	6.89	6.07	5.53	5.15	4.85	4.42	4.19	7.15	5.88	5.11	4.58	4.19	3.63	3.43
<b>2/B100-16</b>	3.94	3.47	3.16	2.94	2.77	2.53	2.43	5.28	4.65	4.24	3.95	3.72	3.38	3.26
<b>2/B150-16</b>	5.36	4.72	4.31	4.01	3.78	3.45	3.32	7.18	6.33	5.62	5.04	4.61	4.00	3.78
<b>2/B150-20</b>	5.73	5.06	4.62	4.30	4.06	3.70	3.56	7.67	6.78	6.19	5.77	5.44	4.83	4.56
<b>2/B200-16</b>	6.68	5.90	5.39	5.02	4.74	4.31	4.15	7.79	6.42	5.59	5.02	4.59	3.98	3.76
<b>2/B200-20</b>	7.14	6.32	5.78	5.39	5.08	4.63	4.46	9.57	8.23	7.17	6.44	5.89	5.12	4.83
<b>2/B250-20</b>	8.50	7.53	6.89	6.43	6.07	5.53	5.33	9.91	8.20	7.15	6.42	5.88	5.11	4.82
<b>TILED ROOF &amp; CEILING 90kg/m<sup>2</sup></b>														
<b>B100-16</b>	2.43	2.13	1.93	1.80	1.69	1.54	1.48	3.26	2.85	2.59	2.34	2.13	1.85	1.74
<b>B150-16</b>	3.32	2.90	2.64	2.45	2.31	2.10	2.02	4.25	3.48	3.02	2.70	2.47	2.14	2.02
<b>B150-20</b>	3.56	3.12	2.84	2.64	2.48	2.26	2.17	4.77	4.18	3.65	3.26	2.98	2.58	2.44
<b>B200-16</b>	4.15	3.64	3.31	3.07	2.89	2.63	2.53	4.23	3.46	3.01	2.69	2.46	2.13	2.01
<b>B200-20</b>	4.46	3.91	3.56	3.30	3.11	2.83	2.72	5.44	4.46	3.87	3.46	3.16	2.74	2.59
<b>B250-20</b>	5.33	4.67	4.25	3.95	3.72	3.38	3.25	5.43	4.45	3.86	3.46	3.16	2.74	2.58
<b>2/B100-16</b>	3.05	2.67	2.43	2.26	2.13	1.93	1.86	4.08	3.58	3.26	3.03	2.85	2.59	2.46
<b>2/B150-16</b>	4.15	3.64	3.32	3.08	2.90	2.64	2.54	5.56	4.88	4.25	3.81	3.48	3.02	2.85
<b>2/B150-20</b>	4.45	3.91	3.56	3.31	3.12	2.84	2.73	5.97	5.24	4.77	4.44	4.18	3.65	3.44
<b>2/B200-16</b>	5.19	4.56	4.15	3.86	3.64	3.31	3.18	5.93	4.87	4.23	3.79	3.46	3.01	2.83
<b>2/B200-20</b>	5.57	4.89	4.46	4.15	3.91	3.56	3.42	7.46	6.26	5.44	4.87	4.46	3.87	3.65
<b>2/B250-20</b>	6.65	5.84	5.33	4.96	4.67	4.25	4.09	7.58	6.24	5.43	4.86	4.45	3.86	3.64

\*\*\* RLW: refer to page 4 for roof load width types.

**CEILING JOISTS**

- Dead Load: **0.15kPa**
- Terrain: **Suburban Sheltered**
- Wind Class: **N3**

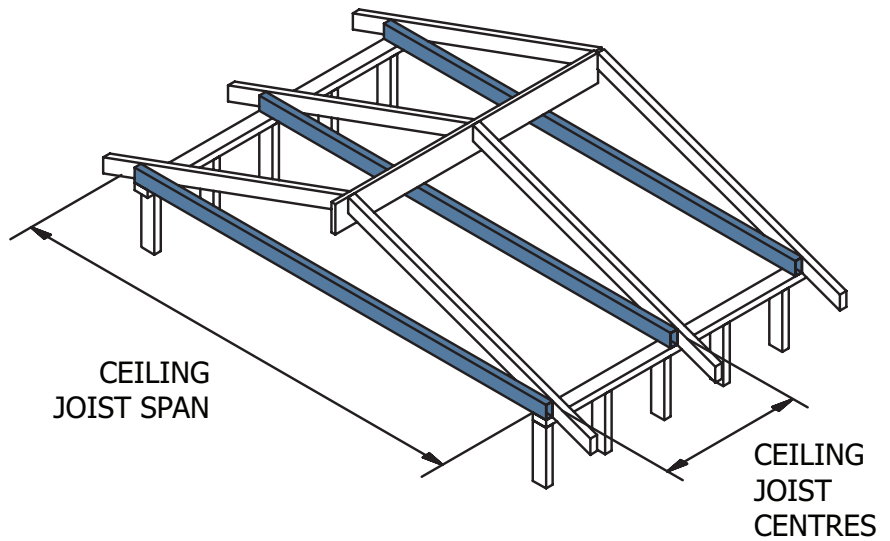


Table 18		MAXIMUM CEILING JOIST SPAN (m)							
BOXSPAN SECTION	SINGLE SPAN				CONTINUOUS SPAN				
	CEILING JOIST CENTRES (mm)				CEILING JOIST CENTRES (mm)				
	450	600	900	1200	450	600	900	1200	
<b>B100-12</b>	5.50	5.00	4.37	3.97	7.37	6.70	5.85	5.32	
<b>B100-16</b>	6.02	5.47	4.78	4.34	8.07	7.33	6.41	5.82	
<b>B150-12</b>	7.53	6.84	5.97	5.43	10.09	9.17	8.01	7.28	
<b>B150-16</b>	8.24	7.49	6.54	5.94	11.05	10.04	8.77	7.97	
<b>B150-20</b>	8.84	8.03	7.02	6.38	11.86	10.77	9.41	8.55	
<b>B200-16</b>	10.34	9.40	8.21	7.46	13.87	12.60	11.01	10.00	
<b>B200-20</b>	11.09	10.08	8.80	8.00	14.87	13.51	11.81	10.73	
<b>B250-20</b>	13.28	12.07	10.54	9.58	17.81	16.18	14.14	12.84	



**RAFTERS**

- Roof Live Load: **0.25kPa**
- Terrain: **Suburban Sheltered**
- Wind Class: **N3**

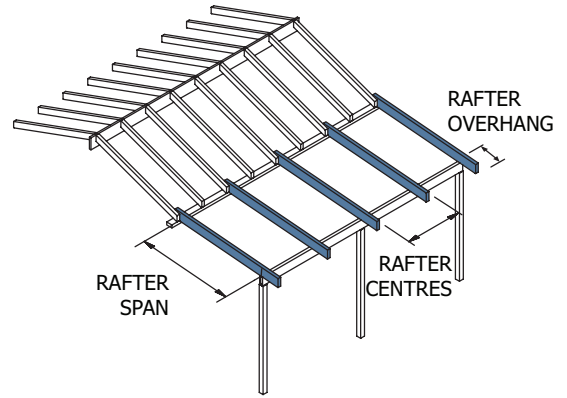


Table 19 MAXIMUM RAFTER SPAN (m)												
BOXSPAN SECTION	SINGLE SPAN						CONTINUOUS SPAN					
	RAFTER SPACING (m)						RAFTER SPACING (m)					
	0.45	0.6	0.9	1.2	1.5	1.8	0.45	0.6	0.9	1.2	1.5	1.8
SHEET ROOF 20kg/m <sup>2</sup>												
B100-12	5.62	5.11	4.46	4.05	3.76	3.54	7.54	6.85	5.98	5.44	5.05	4.75
B100-16	6.06	5.61	4.90	4.45	4.13	3.89	8.12	7.52	6.57	5.97	5.54	5.21
B150-12	7.56	6.97	6.09	5.54	5.14	4.84	9.91	8.71	7.22	6.30	5.66	5.18
B150-16	8.12	7.56	6.70	6.08	5.65	5.31	10.88	10.13	8.97	8.15	7.57	7.07
B150-20	8.55	7.99	7.20	6.54	6.07	5.72	11.45	10.71	9.65	8.77	8.14	7.66
B200-16	10.01	9.35	8.39	7.63	7.08	6.66	13.11	11.60	9.69	8.49	7.65	7.02
B200-20	10.52	9.86	8.92	8.21	7.62	7.17	14.10	13.22	11.96	10.84	9.78	8.98
B250-20	12.41	11.67	10.58	9.82	9.11	8.57	16.36	14.57	12.26	10.78	9.74	8.95
SHEET ROOF & CEILING 40kg/m <sup>2</sup>												
B100-12	4.62	4.23	3.73	3.41	3.17	2.99	6.19	5.67	5.00	4.57	4.25	4.01
B100-16	5.01	4.61	4.07	3.72	3.47	3.27	6.72	6.18	5.46	4.99	4.65	4.39
B150-12	6.25	5.74	5.07	4.63	4.32	4.07	8.38	7.35	6.06	5.28	4.74	4.33
B150-16	6.77	6.24	5.53	5.06	4.72	4.46	9.08	8.37	7.41	6.79	6.33	5.92
B150-20	7.20	6.65	5.91	5.42	5.06	4.78	9.65	8.91	7.92	7.26	6.78	6.40
B200-16	8.41	7.77	6.90	6.32	5.90	5.57	11.21	9.86	8.18	7.14	6.42	5.88
B200-20	8.92	8.26	7.36	6.76	6.32	5.97	11.96	11.08	9.87	9.06	8.23	7.54
B250-20	10.58	9.82	8.77	8.06	7.53	7.12	14.09	12.46	10.40	9.10	8.20	7.52
TILED ROOF & CEILING 90kg/m <sup>2</sup>												
B100-12	3.59	3.28	2.88	2.62	2.43	2.29	4.82	4.40	3.86	3.51	3.26	3.07
B100-16	3.93	3.59	3.15	2.87	2.67	2.51	5.26	4.81	4.22	3.85	3.58	3.37
B150-12	4.89	4.46	3.92	3.57	3.32	3.13	6.43	5.60	4.60	4.00	3.58	3.27
B150-16	5.34	4.88	4.29	3.91	3.64	3.43	7.15	6.54	5.75	5.25	4.88	4.48
B150-20	5.70	5.22	4.60	4.20	3.91	3.68	7.65	7.00	6.17	5.63	5.24	4.94
B200-16	6.66	6.10	5.37	4.90	4.56	4.30	8.66	7.57	6.24	5.43	4.87	4.45
B200-20	7.11	6.52	5.76	5.26	4.89	4.61	9.54	8.75	7.71	6.97	6.25	5.72
B250-20	8.47	7.78	6.87	6.27	5.84	5.51	10.99	9.64	7.97	6.95	6.24	5.71

MAXIMUM RAFTER OVERHANG (m)												
BOXSPAN SECTION	SHEET ROOF & CEILING 40kg/m <sup>2</sup>						TILED ROOF & CEILING 90kg/m <sup>2</sup>					
	RAFTER SPACING (m)						RAFTER SPACING (m)					
	0.45	0.6	0.9	1.2	1.5	1.8	0.45	0.6	0.9	1.2	1.5	1.8
B100-12	2.45	2.06	1.78	1.62	1.41	1.24	2.02	1.70	1.16	0.96	0.83	0.72
B100-16	2.63	2.21	1.95	1.86	1.78	1.66	2.17	1.83	1.61	1.53	1.47	1.41
B150-12	3.11	2.61	1.88	1.57	1.35	1.18	2.56	1.93	1.16	0.96	0.83	0.72
B150-16	3.34	2.81	2.47	2.36	2.26	2.11	2.75	2.32	2.04	1.95	1.87	1.78
B150-20	3.53	2.97	2.61	2.50	2.40	2.32	2.91	2.45	2.16	2.06	1.98	1.92
B200-16	3.97	3.34	2.94	2.78	2.55	2.36	3.27	2.75	2.42	2.31	2.03	1.78
B200-20	4.19	3.53	3.10	2.97	2.85	2.76	3.46	2.91	2.56	2.45	2.35	2.28
B250-20	4.80	4.04	3.55	3.40	3.27	3.15	3.96	3.33	2.93	2.80	2.69	2.61

**PURLINS**

- Roof Live Load: **0.25kPa**
- Terrain: **Suburban Sheltered**
- Wind Class: **N3**

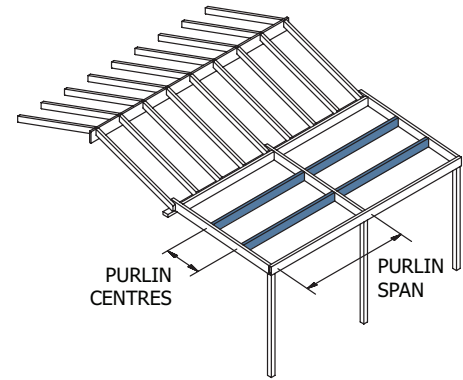


Table 20		MAXIMUM PURLIN SPAN (m)															
BOXSPAN SECTION	SINGLE SPAN								CONTINUOUS SPAN								
	PURLIN CENTRES (m)								PURLIN CENTRES (m)								
	0.6	0.9	1.2	1.8	2.1	2.4	2.7	3.0	0.6	0.9	1.2	1.8	2.1	2.4	2.7	3.0	
<b>SHEET ROOF 20kg/m<sup>2</sup></b>																	
B100-12	5.11	4.46	4.05	3.54	3.36	3.22	3.09	2.99	6.85	5.98	5.44	4.75	4.51	4.31	4.15	4	
B100-16	5.61	4.9	4.45	3.89	3.69	3.53	3.4	3.28	7.52	6.57	5.97	5.21	4.95	4.74	4.55	4.4	
B150-12	6.97	6.09	5.54	4.84	4.59	4.39	4.23	4.08	8.71	7.22	6.3	5.18	4.81	4.51	4.26	4.04	
B150-16	7.56	6.7	6.08	5.31	5.05	4.83	4.64	4.48	10.13	8.97	8.15	7.07	6.56	6.15	5.81	5.52	
B150-20	7.99	7.2	6.54	5.72	5.43	5.19	4.99	4.82	10.71	9.65	8.77	7.66	7.28	6.96	6.69	6.46	
B200-16	9.35	8.39	7.63	6.66	6.33	6.05	5.82	5.62	11.6	9.69	8.49	7.02	6.52	6.11	5.78	5.49	
B200-20	9.86	8.92	8.21	7.17	6.81	6.51	6.26	6.05	13.22	11.96	10.84	8.98	8.35	7.84	7.41	7.04	
B250-20	11.67	10.58	9.82	8.57	8.14	7.79	7.49	7.23	14.57	12.26	10.78	8.95	8.32	7.81	7.39	7.02	
<b>SHEET ROOF &amp; CEILING 40kg/m<sup>2</sup></b>																	
B100-12	4.23	3.73	3.41	2.99	2.84	2.72	2.62	2.53	5.67	5	4.57	4.01	3.81	3.65	3.51	3.39	
B100-16	4.61	4.07	3.72	3.27	3.11	2.98	2.87	2.77	6.18	5.46	4.99	4.39	4.17	4	3.85	3.72	
B150-12	5.74	5.07	4.63	4.07	3.87	3.71	3.57	3.45	7.35	6.06	5.28	4.33	4.02	3.76	3.55	3.37	
B150-16	6.24	5.53	5.06	4.46	4.24	4.07	3.91	3.78	8.37	7.41	6.79	5.92	5.49	5.14	4.86	4.61	
B150-20	6.65	5.91	5.42	4.78	4.55	4.36	4.2	4.06	8.91	7.92	7.26	6.4	6.1	5.85	5.63	5.44	
B200-16	7.77	6.9	6.32	5.57	5.31	5.09	4.9	4.74	9.86	8.18	7.14	5.88	5.46	5.12	4.83	4.59	
B200-20	8.26	7.36	6.76	5.97	5.69	5.46	5.26	5.08	11.08	9.87	9.06	7.54	7.01	6.57	6.2	5.89	
B250-20	9.82	8.77	8.06	7.12	6.79	6.51	6.27	6.07	12.46	10.4	9.1	7.52	6.99	6.55	6.19	5.88	
<b>TILED ROOF &amp; CEILING 90kg/m<sup>2</sup></b>																	
B100-12	3.28	2.88	2.62	2.29	2.18	2.09	2.01	1.94	4.40	3.86	3.51	3.07	2.92	2.80	2.69	2.57	
B100-16	3.59	3.15	2.87	2.51	2.39	2.29	2.20	2.13	4.81	4.22	3.85	3.37	3.20	3.07	2.95	2.85	
B150-12	4.46	3.92	3.57	3.13	2.97	2.85	2.74	2.64	5.60	4.60	4.00	3.27	3.03	2.84	2.68	2.54	
B150-16	4.88	4.29	3.91	3.43	3.26	3.12	3.00	2.90	6.54	5.75	5.25	4.48	4.15	3.89	3.67	3.48	
B150-20	5.22	4.60	4.20	3.68	3.50	3.35	3.23	3.12	7.00	6.17	5.63	4.94	4.70	4.50	4.33	4.18	
B200-16	6.10	5.37	4.90	4.30	4.09	3.91	3.76	3.64	7.57	6.24	5.43	4.46	4.13	3.87	3.65	3.46	
B200-20	6.52	5.76	5.26	4.61	4.39	4.20	4.04	3.91	8.75	7.71	6.97	5.72	5.31	4.97	4.69	4.46	
B250-20	7.78	6.87	6.27	5.51	5.24	5.02	4.83	4.67	9.64	7.97	6.95	5.71	5.30	4.96	4.68	4.45	

**ROOF BEAMS**

- Roof Live Load: **0.25kPa**
- Terrain: **Suburban Sheltered**
- Wind Class: **N3**

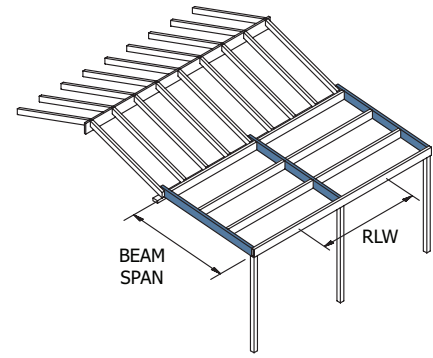
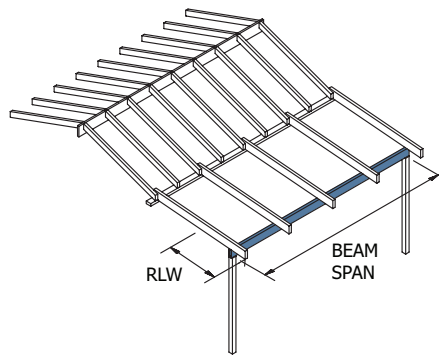


Table 21 MAXIMUM BEAM SPAN BETWEEN SUPPORTS (m)														
BOXSPAN SECTION	SINGLE SPAN							CONTINUOUS SPAN						
	ROOF LOAD WIDTH RLW (m)***							ROOF LOAD WIDTH RLW (m)***						
	0.9	1.3	1.5	2.0	3.0	4.0	5.0	0.9	1.3	1.5	2.0	3.0	4.0	5.0
<b>SHEET ROOF 20kg/m<sup>2</sup></b>														
<b>B100-16</b>	4.90	4.45	4.13	3.76	3.28	2.98	2.77	6.57	5.97	5.54	5.03	4.79	4.15	3.72
<b>B150-16</b>	6.70	6.08	5.65	5.13	4.48	4.07	3.78	8.97	8.15	7.57	6.72	5.52	4.80	4.30
<b>B150-20</b>	7.20	6.54	6.07	5.52	4.82	4.38	4.07	9.65	8.77	8.14	7.40	6.66	5.79	5.19
<b>B200-16</b>	8.39	7.63	7.08	6.43	5.62	5.11	4.67	9.69	8.49	7.65	6.67	5.49	4.77	4.28
<b>B200-20</b>	8.92	8.21	7.62	6.92	6.05	5.49	5.10	11.96	10.84	9.78	8.55	7.04	6.13	5.50
<b>B250-20</b>	10.58	9.82	9.11	8.28	7.23	6.57	6.00	12.26	10.78	9.74	8.51	7.02	6.11	5.48
<b>2/B100-16</b>	6.06	5.61	5.21	4.73	4.13	3.76	3.49	8.12	7.52	6.98	6.34	5.54	5.03	4.67
<b>2/B150-16</b>	8.12	7.56	7.11	6.46	5.65	5.13	4.76	10.88	10.13	9.54	8.67	7.57	6.72	6.03
<b>2/B150-20</b>	8.55	7.99	7.55	6.95	6.07	5.52	5.12	11.45	10.71	10.12	9.32	8.14	7.40	6.87
<b>2/B200-16</b>	10.01	9.35	8.83	8.10	7.08	6.43	5.97	13.11	11.60	10.52	9.24	7.65	6.67	5.99
<b>2/B200-20</b>	10.52	9.86	9.35	8.68	7.62	6.92	6.43	14.10	13.22	12.53	11.63	9.78	8.55	7.69
<b>2/B250-20</b>	12.41	11.67	11.07	10.30	9.11	8.28	7.69	16.36	14.57	13.26	11.70	9.74	8.51	7.66
<b>SHEET ROOF &amp; CEILING 40kg/m<sup>2</sup></b>														
<b>B100-16</b>	4.07	3.72	3.47	3.16	3.72	3.38	3.10	5.46	4.99	4.65	4.24	3.99	3.47	3.10
<b>B150-16</b>	5.53	5.06	4.72	4.31	4.61	4.00	3.58	7.41	6.79	6.33	5.62	4.61	4.00	3.58
<b>B150-20</b>	5.91	5.42	5.06	4.62	5.44	4.83	4.33	7.92	7.26	6.78	6.19	5.56	4.83	4.33
<b>B200-16</b>	6.90	6.32	5.90	5.39	4.59	3.98	3.57	8.18	7.14	6.42	5.59	4.59	3.98	3.57
<b>B200-20</b>	7.36	6.76	6.32	5.78	5.89	5.12	4.59	9.87	9.06	8.23	7.17	5.89	5.12	4.59
<b>B250-20</b>	8.77	8.06	7.53	6.89	5.88	5.11	4.58	10.40	9.10	8.20	7.15	5.88	5.11	4.58
<b>2/B100-16</b>	5.01	4.61	4.31	3.94	3.47	3.16	2.94	6.72	6.18	5.77	5.28	4.65	4.24	3.95
<b>2/B150-16</b>	6.77	6.24	5.84	5.36	4.72	4.31	4.01	9.08	8.37	7.83	7.18	6.33	5.62	5.04
<b>2/B150-20</b>	7.20	6.65	6.23	5.73	5.06	4.62	4.30	9.65	8.91	8.36	7.67	6.78	6.19	5.77
<b>2/B200-16</b>	8.41	7.77	7.28	6.68	5.90	5.39	5.02	11.21	9.86	8.90	7.79	6.42	5.59	5.02
<b>2/B200-20</b>	8.92	8.26	7.76	7.14	6.32	5.78	5.39	11.96	11.08	10.40	9.57	8.23	7.17	6.44
<b>2/B250-20</b>	10.58	9.82	9.23	8.50	7.53	6.89	6.43	14.09	12.46	11.29	9.91	8.20	7.15	6.42
<b>TILED ROOF &amp; CEILING 90kg/m<sup>2</sup></b>														
<b>B100-16</b>	3.15	2.87	2.67	2.43	2.13	1.93	1.80	4.22	3.85	3.58	3.26	3.01	2.61	2.34
<b>B150-16</b>	4.29	3.91	3.64	3.32	2.90	2.64	2.45	5.75	5.25	4.88	4.25	3.48	3.02	2.70
<b>B150-20</b>	4.60	4.20	3.91	3.56	3.12	2.84	2.64	6.17	5.63	5.24	4.77	4.20	3.65	3.26
<b>B200-16</b>	5.37	4.90	4.56	4.15	3.64	3.31	3.07	6.24	5.43	4.87	4.23	3.46	3.01	2.69
<b>B200-20</b>	5.76	5.26	4.89	4.46	3.91	3.56	3.30	7.71	6.97	6.26	5.44	4.46	3.87	3.46
<b>B250-20</b>	6.87	6.27	5.84	5.33	4.67	4.25	3.95	7.97	6.95	6.24	5.43	4.45	3.86	3.46
<b>2/B100-16</b>	3.93	3.59	3.34	3.05	2.67	2.43	2.26	5.26	4.81	4.48	4.08	3.58	3.26	3.03
<b>2/B150-16</b>	5.34	4.88	4.55	4.15	3.64	3.32	3.08	7.15	6.54	6.10	5.56	4.88	4.25	3.81
<b>2/B150-20</b>	5.70	5.22	4.87	4.45	3.91	3.56	3.31	7.65	7.00	6.53	5.97	5.24	4.77	4.44
<b>2/B200-16</b>	6.66	6.10	5.69	5.19	4.56	4.15	3.86	8.66	7.57	6.81	5.93	4.87	4.23	3.79
<b>2/B200-20</b>	7.11	6.52	6.09	5.57	4.89	4.46	4.15	9.54	8.75	8.17	7.46	6.26	5.44	4.87
<b>2/B250-20</b>	8.47	7.78	7.27	6.65	5.84	5.33	4.96	10.99	9.64	8.69	7.58	6.24	5.43	4.86

\*\*\* RLW: refer to page 4 for roof load width types.

**RAFTERS**

- Roof Live Load: **0.25kPa**
- Terrain: **Suburban Sheltered**
- Wind Class: **N3**

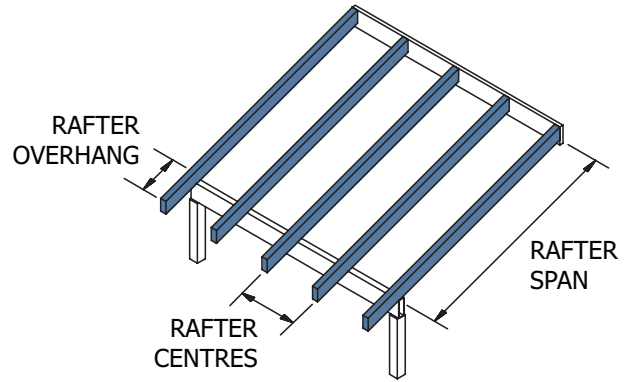


Table 22		MAXIMUM RAFTER SPAN (m)											
BOXSPAN SECTION	SINGLE SPAN						CONTINUOUS SPAN						
	RAFTER SPACING (m)						RAFTER SPACING (m)						
	0.45	0.6	0.9	1.2	1.5	1.8	0.45	0.6	0.9	1.2	1.5	1.8	
SHEET ROOF 20kg/m <sup>2</sup>													
B100-12	4.89	4.44	3.88	3.52	3.27	3.08	6.55	5.95	5.20	4.72	4.38	4.13	
B100-16	5.36	4.87	4.26	3.87	3.59	3.38	7.19	6.53	5.71	5.19	4.81	4.53	
B150-12	6.67	6.06	5.29	4.81	4.47	4.20	8.94	7.99	6.52	5.65	5.05	4.61	
B150-16	7.33	6.66	5.82	5.29	4.91	4.62	9.83	8.93	7.80	7.09	6.58	6.19	
B150-20	7.88	7.16	6.26	5.69	5.28	4.97	10.57	9.60	8.39	7.62	7.07	6.66	
B200-16	9.19	8.35	7.29	6.63	6.15	5.79	12.32	10.91	8.91	7.71	6.90	6.30	
B200-20	9.89	8.98	7.85	7.13	6.62	6.23	13.26	12.04	10.52	9.56	8.87	8.11	
B250-20	11.83	10.75	9.39	8.53	7.92	7.45	15.85	14.04	11.46	9.93	8.88	8.10	
SHEET ROOF & CEILING 40kg/m <sup>2</sup>													
B100-12	4.62	4.23	3.73	3.41	3.17	2.99	6.19	5.67	5.00	4.56	4.25	4.01	
B100-16	5.01	4.61	4.07	3.72	3.47	3.27	6.72	6.18	5.46	4.99	4.65	4.39	
B150-12	6.25	5.74	5.07	4.63	4.32	4.07	8.37	7.35	6.06	5.28	4.74	4.33	
B150-16	6.77	6.24	5.53	5.06	4.72	4.46	9.08	8.37	7.41	6.79	6.33	5.92	
B150-20	7.19	6.65	5.91	5.42	5.06	4.78	9.64	8.91	7.92	7.26	6.78	6.40	
B200-16	8.41	7.77	6.90	6.32	5.90	5.57	11.21	9.86	8.18	7.14	6.42	5.88	
B200-20	8.92	8.26	7.36	6.76	6.32	5.97	11.96	11.07	9.87	9.06	8.23	7.54	
B250-20	10.58	9.82	8.77	8.06	7.53	7.12	14.09	12.46	10.40	9.10	8.20	7.52	
TILED ROOF & CEILING 90kg/m <sup>2</sup>													
B100-12	3.59	3.28	2.88	2.62	2.43	2.29	4.82	4.4	3.86	3.51	3.26	3.07	
B100-16	3.93	3.59	3.15	2.87	2.67	2.51	5.26	4.81	4.22	3.85	3.58	3.37	
B150-12	4.89	4.46	3.92	3.57	3.32	3.13	6.43	5.6	4.6	4	3.58	3.27	
B150-16	5.34	4.88	4.29	3.91	3.64	3.43	7.15	6.54	5.75	5.25	4.88	4.48	
B150-20	5.70	5.22	4.60	4.20	3.91	3.68	7.65	7	6.17	5.63	5.24	4.94	
B200-16	6.66	6.10	5.37	4.90	4.56	4.30	8.66	7.57	6.24	5.43	4.87	4.45	
B200-20	7.11	6.52	5.75	5.25	4.89	4.61	9.53	8.75	7.71	6.97	6.25	5.72	
B250-20	8.47	7.78	6.87	6.27	5.84	5.51	10.99	9.64	7.97	6.95	6.24	5.71	

		MAXIMUM RAFTER OVERHANG (m)											
BOXSPAN SECTION	SHEET ROOF & CEILING 40kg/m <sup>2</sup>						TILED ROOF & CEILING 90kg/m <sup>2</sup>						
	RAFTER SPACING (m)						RAFTER SPACING (m)						
	0.45	0.6	0.9	1.2	1.5	1.8	0.45	0.6	0.9	1.2	1.5	1.8	
B100-12	2.45	1.59	1.42	1.29	1.19	1.11	2.02	1.44	1.16	0.96	0.83	0.72	
B100-16	2.63	1.89	1.69	1.54	1.42	1.33	2.17	1.70	1.61	1.53	1.47	1.41	
B150-12	3.11	1.51	1.21	1.01	0.86	0.76	2.56	1.44	1.16	0.96	0.83	0.72	
B150-16	3.34	2.39	2.13	1.94	1.79	1.67	2.75	2.16	2.04	1.95	1.87	1.78	
B150-20	3.53	2.76	2.46	2.25	2.08	1.94	2.91	2.28	2.16	2.06	1.98	1.92	
B200-16	3.97	2.72	2.40	2.02	1.73	1.51	3.27	2.56	2.42	2.31	2.03	1.78	
B200-20	4.19	3.23	2.87	2.61	2.40	2.24	3.46	2.71	2.56	2.45	2.35	2.28	
B250-20	4.80	3.62	3.20	2.89	2.57	2.25	3.96	3.10	2.93	2.80	2.69	2.61	
B250-20	4.80	4.04	3.55	3.40	3.27	3.15	3.96	3.33	2.93	2.80	2.69	2.61	

**PURLINS**

- Roof Live Load: **0.25kPa**
- Terrain: **Suburban Sheltered**
- Wind Class: **N3**

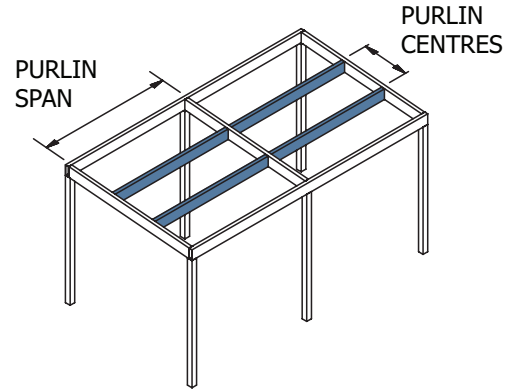


Table 23		MAXIMUM PURLIN SPAN (m)															
BOXSPAN SECTION	SINGLE SPAN								CONTINUOUS SPAN								
	PURLIN CENTRES (m)								PURLIN CENTRES (m)								
	0.6	0.9	1.2	1.8	2.1	2.4	2.7	3.0	0.6	0.9	1.2	1.8	2.1	2.4	2.7	3.0	
SHEET ROOF 20kg/m <sup>2</sup>																	
B100-12	4.44	3.88	3.52	3.08	2.92	2.80	2.69	2.60	5.95	5.20	4.72	4.13	3.92	3.75	3.60	3.48	
B100-16	4.87	4.26	3.87	3.38	3.21	3.07	2.95	2.85	6.53	5.71	5.19	4.53	4.30	4.12	3.96	3.82	
B150-12	6.06	5.30	4.81	4.20	3.99	3.82	3.67	3.54	7.99	6.53	5.65	4.61	4.27	4.00	3.77	3.57	
B150-16	6.66	5.82	5.29	4.62	4.39	4.20	4.03	3.90	8.93	7.80	7.09	6.19	5.85	5.47	5.16	4.90	
B150-20	7.16	6.26	5.69	4.97	4.72	4.51	4.34	4.19	9.60	8.39	7.62	6.66	6.32	6.05	5.82	5.62	
B200-16	8.35	7.29	6.63	5.79	5.50	5.26	5.06	4.88	10.91	8.91	7.72	6.30	5.83	5.46	5.14	4.88	
B200-20	8.98	7.85	7.13	6.23	5.92	5.66	5.44	5.25	12.04	10.52	9.56	8.11	7.51	7.03	6.62	6.28	
B250-20	10.75	9.39	8.53	7.45	7.08	6.77	6.51	6.28	14.04	11.46	9.93	8.11	7.50	7.02	6.62	6.28	
SHEET ROOF & CEILING 40kg/m <sup>2</sup>																	
B100-12	4.23	3.73	3.41	2.99	2.84	2.72	2.62	2.53	5.67	5.00	4.57	4.01	3.81	3.65	3.51	3.39	
B100-16	4.61	4.07	3.72	3.27	3.11	2.98	2.87	2.77	6.18	5.46	4.99	4.39	4.17	4.00	3.85	3.72	
B150-12	5.74	5.07	4.63	4.07	3.87	3.71	3.57	3.45	7.35	6.06	5.28	4.33	4.02	3.76	3.55	3.37	
B150-16	6.24	5.53	5.06	4.46	4.24	4.07	3.91	3.78	8.37	7.41	6.79	5.92	5.49	5.14	4.86	4.61	
B150-20	6.65	5.91	5.42	4.78	4.55	4.36	4.20	4.06	8.91	7.92	7.26	6.40	6.10	5.85	5.63	5.44	
B200-16	7.77	6.90	6.32	5.57	5.31	5.09	4.90	4.74	9.86	8.18	7.14	5.88	5.46	5.12	4.83	4.59	
B200-20	8.26	7.36	6.76	5.97	5.69	5.46	5.26	5.08	11.08	9.87	9.06	7.54	7.01	6.57	6.20	5.89	
B250-20	9.82	8.77	8.06	7.12	6.79	6.51	6.27	6.07	12.46	10.40	9.10	7.52	6.99	6.55	6.19	5.88	
TILED ROOF & CEILING 90kg/m <sup>2</sup>																	
B100-12	3.28	2.88	2.62	2.29	2.18	2.09	2.01	1.94	4.40	3.86	3.51	3.07	2.92	2.80	2.69	2.57	
B100-16	3.59	3.15	2.87	2.51	2.39	2.29	2.20	2.13	4.81	4.22	3.85	3.37	3.20	3.07	2.95	2.85	
B150-12	4.46	3.92	3.57	3.13	2.97	2.85	2.74	2.64	5.60	4.60	4.00	3.27	3.03	2.84	2.68	2.54	
B150-16	4.88	4.29	3.91	3.43	3.26	3.12	3.00	2.90	6.54	5.75	5.25	4.48	4.15	3.89	3.67	3.48	
B150-20	5.22	4.60	4.20	3.68	3.50	3.35	3.23	3.12	7.00	6.17	5.63	4.94	4.70	4.50	4.33	4.18	
B200-16	6.10	5.37	4.90	4.30	4.09	3.91	3.76	3.64	7.57	6.24	5.43	4.46	4.13	3.87	3.65	3.46	
B200-20	6.52	5.76	5.26	4.61	4.39	4.20	4.04	3.91	8.75	7.71	6.97	5.72	5.31	4.97	4.69	4.46	
B250-20	7.78	6.87	6.27	5.51	5.24	5.02	4.83	4.67	9.64	7.97	6.95	5.71	5.30	4.96	4.68	4.45	



**ROOF BEAMS**

- Roof Live Load: **0.25kPa**
- Terrain: **Suburban Sheltered**
- Wind Class: **N3**

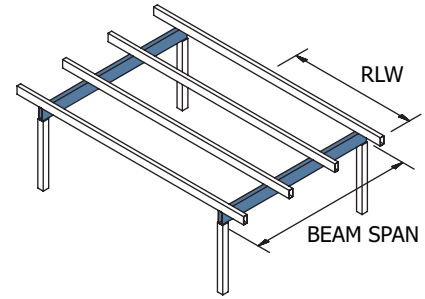
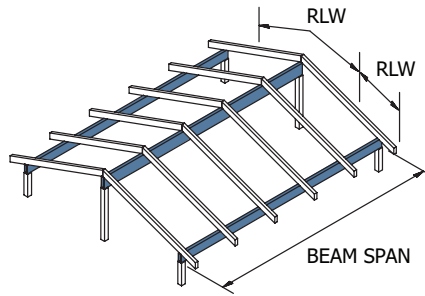
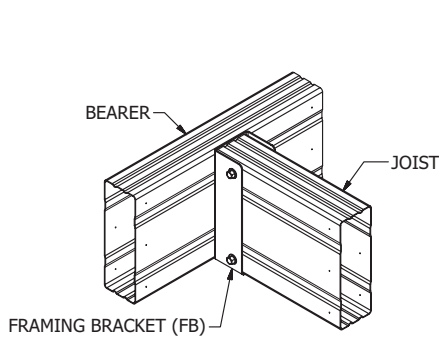


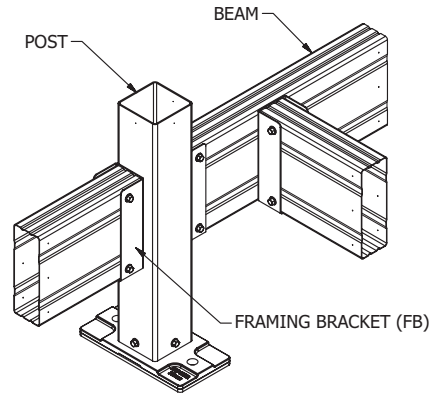
Table 24 MAXIMUM BEAM SPAN BETWEEN SUPPORTS (m)														
BOXSPAN SECTION	SINGLE SPAN							CONTINUOUS SPAN						
	ROOF LOAD WIDTH RLW (m)***							ROOF LOAD WIDTH RLW (m)***						
	0.9	1.3	1.5	2.0	3.0	4.0	5.0	0.9	1.3	1.5	2.0	3.0	4.0	5.0
<b>SHEET ROOF 20kg/m<sup>2</sup></b>														
B100-16	4.26	3.87	3.59	3.26	2.85	2.59	2.40	5.71	5.19	4.81	4.37	4.79	4.15	3.72
B150-16	5.82	5.29	4.91	4.46	3.90	3.54	3.29	7.80	7.09	6.58	5.98	5.52	4.80	4.30
B150-20	6.26	5.69	5.28	4.80	4.19	3.81	3.53	8.39	7.62	7.08	6.43	6.66	5.79	5.19
B200-16	7.29	6.63	6.15	5.59	4.88	4.23	3.78	8.91	7.72	6.90	5.98	5.49	4.77	4.28
B200-20	7.85	7.13	6.62	6.01	5.25	4.77	4.43	10.52	9.56	8.87	7.70	7.04	6.13	5.50
B250-20	9.39	8.53	7.92	7.19	6.28	5.44	4.86	11.46	9.93	8.88	7.69	7.02	6.11	5.48
2/B100-16	5.36	4.87	4.53	4.11	3.59	3.26	3.03	7.19	6.53	6.07	5.51	4.81	4.37	4.06
2/B150-16	7.33	6.66	6.18	5.62	4.91	4.46	4.14	9.83	8.93	8.29	7.53	6.58	5.98	5.36
2/B150-20	7.88	7.16	6.65	6.04	5.28	4.80	4.45	10.57	9.60	8.91	8.10	7.08	6.43	5.97
2/B200-16	9.19	8.35	7.75	7.04	6.15	5.59	5.19	12.32	10.91	9.76	8.45	6.90	5.98	5.35
2/B200-20	9.89	8.98	8.34	7.58	6.62	6.01	5.58	13.26	12.04	11.18	10.16	8.87	7.70	6.88
2/B250-20	11.83	10.75	9.98	9.06	7.92	7.19	6.68	15.86	14.04	12.56	10.87	8.88	7.69	6.88
<b>SHEET ROOF &amp; CEILING 40kg/m<sup>2</sup></b>														
B100-16	4.07	3.72	3.47	3.16	2.77	2.53	2.35	5.46	4.99	4.65	4.24	3.72	3.47	3.10
B150-16	5.53	5.06	4.72	4.31	3.78	3.45	3.20	7.41	6.79	6.33	5.62	4.61	4.00	3.58
B150-20	5.91	5.42	5.06	4.62	4.06	3.70	3.44	7.92	7.26	6.78	6.19	5.44	4.83	4.33
B200-16	6.90	6.32	5.90	5.39	4.74	4.23	3.78	8.18	7.14	6.42	5.59	4.59	3.98	3.57
B200-20	7.36	6.76	6.32	5.78	5.08	4.63	4.31	9.87	9.06	8.23	7.17	5.89	5.12	4.59
B250-20	8.77	8.06	7.53	6.89	6.07	5.44	4.86	10.40	9.10	8.20	7.15	5.88	5.11	4.58
2/B100-16	5.01	4.61	4.31	3.94	3.47	3.16	2.94	6.72	6.18	5.77	5.28	4.65	4.24	3.95
2/B150-16	6.77	6.24	5.84	5.36	4.72	4.31	4.01	9.08	8.37	7.83	7.18	6.33	5.62	5.04
2/B150-20	7.20	6.65	6.23	5.73	5.06	4.62	4.30	9.65	8.91	8.36	7.67	6.78	6.19	5.77
2/B200-16	8.41	7.77	7.28	6.68	5.90	5.39	5.02	11.21	9.86	8.90	7.79	6.42	5.59	5.02
2/B200-20	8.92	8.26	7.76	7.14	6.32	5.78	5.39	11.96	11.08	10.40	9.57	8.23	7.17	6.44
2/B250-20	10.58	9.82	9.23	8.50	7.53	6.89	6.43	14.09	12.46	11.29	9.91	8.20	7.15	6.42
<b>TILED ROOF &amp; CEILING 90kg/m<sup>2</sup></b>														
B100-16	3.15	2.87	2.67	2.43	2.13	1.93	1.80	4.22	3.85	3.58	3.26	3.01	2.61	2.34
B150-16	4.29	3.91	3.64	3.32	2.90	2.64	2.45	5.75	5.25	4.88	4.25	3.48	3.02	2.70
B150-20	4.60	4.20	3.91	3.56	3.12	2.84	2.64	6.17	5.63	5.24	4.77	4.20	3.65	3.26
B200-16	5.37	4.90	4.56	4.15	3.64	3.31	3.07	6.24	5.43	4.87	4.23	3.46	3.01	2.69
B200-20	5.76	5.26	4.89	4.46	3.91	3.56	3.30	7.71	6.97	6.26	5.44	4.46	3.87	3.46
B250-20	6.87	6.27	5.84	5.33	4.67	4.25	3.95	7.97	6.95	6.24	5.43	4.45	3.86	3.46
2/B100-16	3.93	3.59	3.34	3.05	2.67	2.43	2.26	5.26	4.81	4.48	4.08	3.58	3.26	3.03
2/B150-16	5.34	4.88	4.55	4.15	3.64	3.32	3.08	7.15	6.54	6.10	5.56	4.88	4.25	3.81
2/B150-20	5.70	5.22	4.87	4.45	3.91	3.56	3.31	7.65	7.00	6.53	5.97	5.24	4.77	4.44
2/B200-16	6.66	6.10	5.69	5.19	4.56	4.15	3.86	8.66	7.57	6.81	5.93	4.87	4.23	3.79
2/B200-20	7.11	6.52	6.09	5.57	4.89	4.46	4.15	9.54	8.75	8.17	7.46	6.26	5.44	4.87
2/B250-20	8.47	7.78	7.27	6.65	5.84	5.33	4.96	10.99	9.64	8.69	7.58	6.24	5.43	4.86

\*\*\* RLW: refer to page 4 for roof load width types.

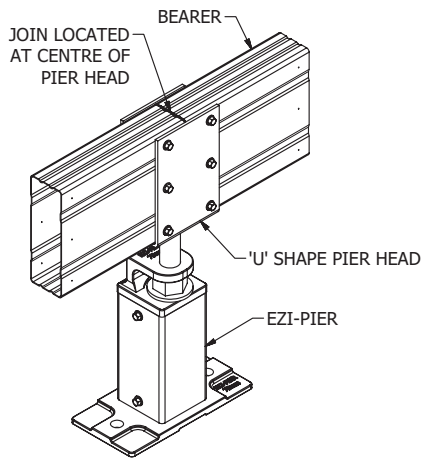
For more connections refer to Spantec website [www.spantec.com.au](http://www.spantec.com.au)



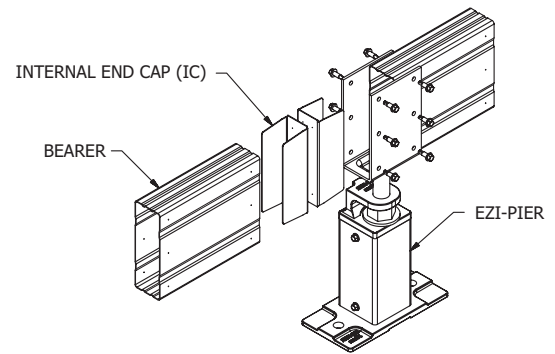
**JOIST TO BEARER AND PURLIN TO RAFTER  
FIXING MEMBERS AT 90°**



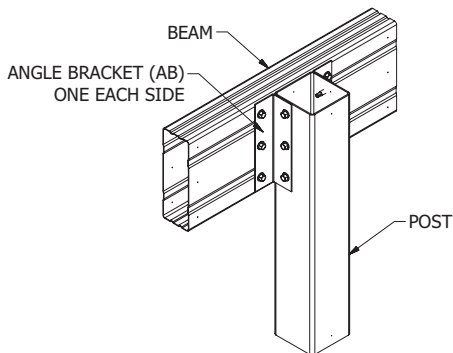
**BEAM BETWEEN POST CONNECTION**



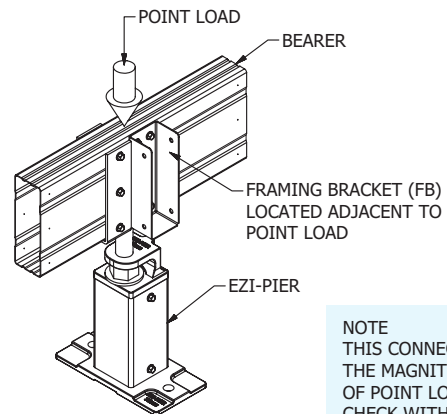
**BEARER JOIN OVER SUPPORT**



**BEARER JOIN OVER SUPPORT EXPLODED VIEW**

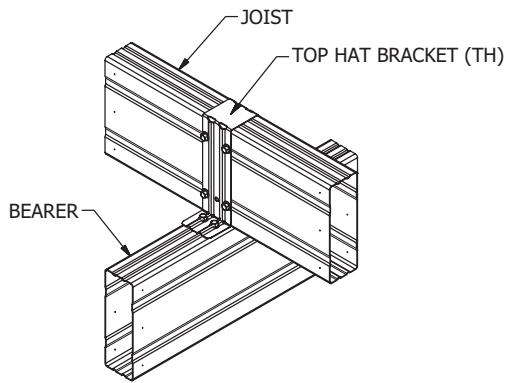


**BEAM TO POST CONNECTION**

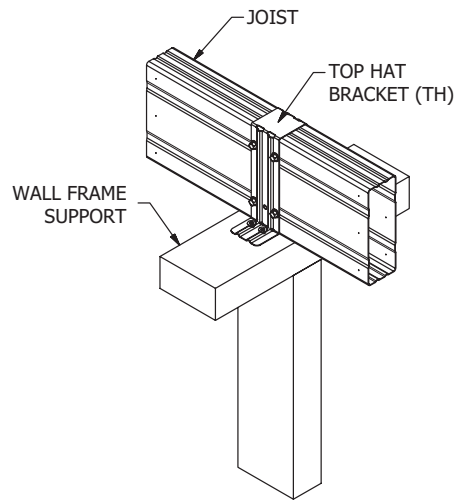


**POINT LOAD FLOOR SUPPORT**

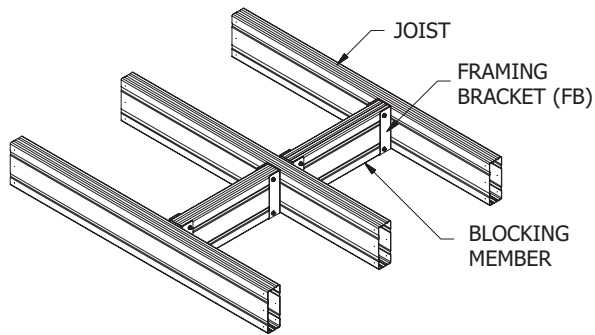
NOTE  
THIS CONNECTION IS RELIANT ON  
THE MAGNITUDE AND LOCATION  
OF POINT LOAD ON THE BEARER.  
CHECK WITH YOUR ENGINEER.



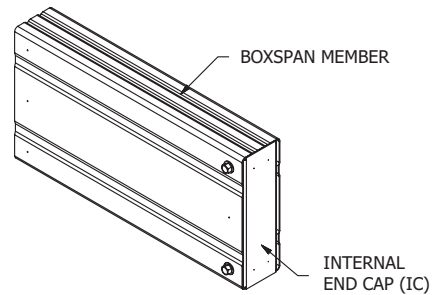
**JOIST OVER BEARER CONNECTION**



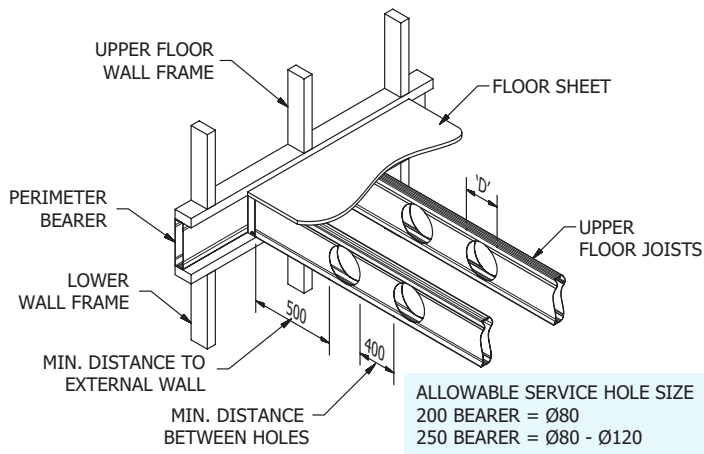
**JOIST OVER SUPPORT FRAME CONNECTION**



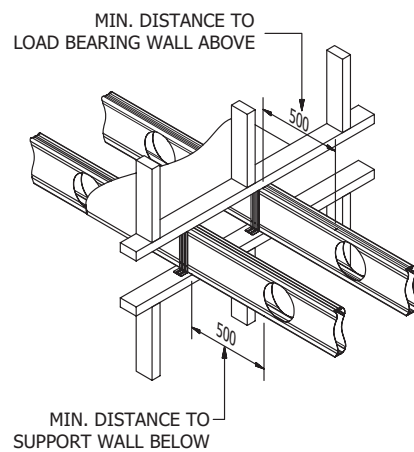
**BLOCKING BETWEEN JOIST**



**CLOSING ENDS OF MEMBERS**



**CUTTING SERVICE HOLES IN FLOOR JOISTS (PERIMETER WALL)**



**CUTTING SERVICE HOLES IN FLOOR JOISTS (INTERNAL WALL)**

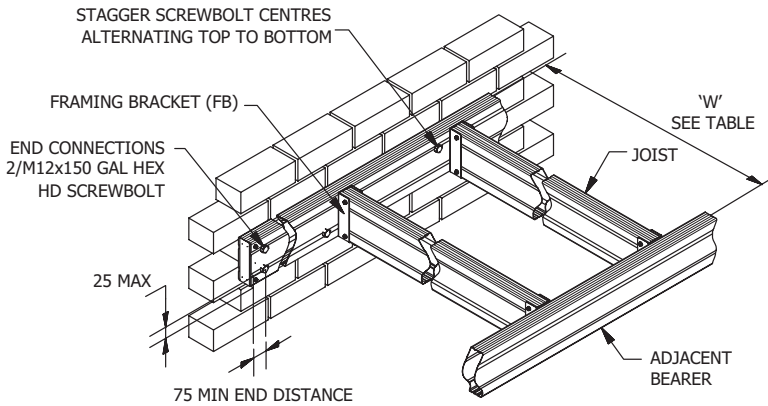
**NOTES:**

1. Suitable for brick wall structures in good condition that have been designed and constructed in accordance with AS3700 masonry structures.
2. A minimum of ten courses of brick work must be above screwbolts.
3. Older masonry structures must be checked for structural integrity by an independent engineer.
4. Do not overtighten screwbolts on to boxspan, maintain a 47 to 50mm waling plate width.

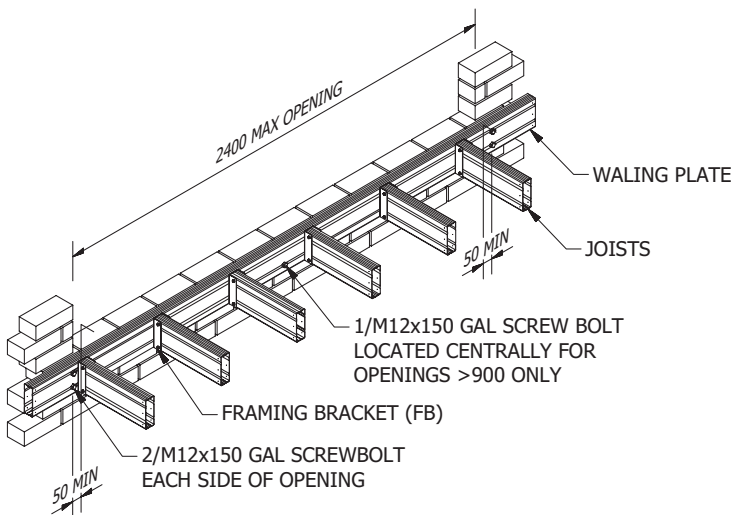
**SUGGESTED SCREW BOLT QUANTITY & CENTRES**

MAX LIVE LOAD	WALING PLATE BMT	SCREW BOLT QTY	"W" BEARER SPACING (mm)			
			3680	2745	2440	1830
2.0 kPa	1.0 mm	ONE @	450 CTRS	600 CTRS	675 CTRS	900 CTRS

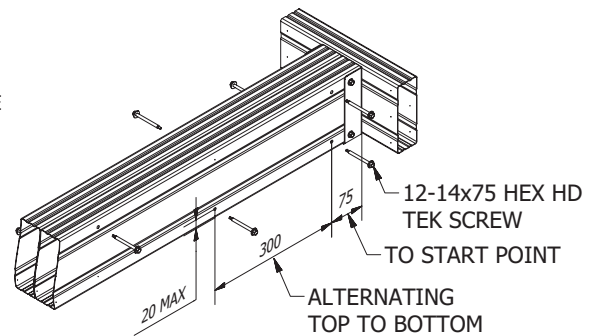
MAX LIVE LOAD	WALING PLATE BMT	SCREW BOLT QTY	"W" BEARER SPACING (mm)				
			4440	3330	2960	2220	1660
1.5 kPa	1.0 mm	ONE @	450 CTRS	600 CTRS	675 CTRS	900 CTRS	1200 CTRS



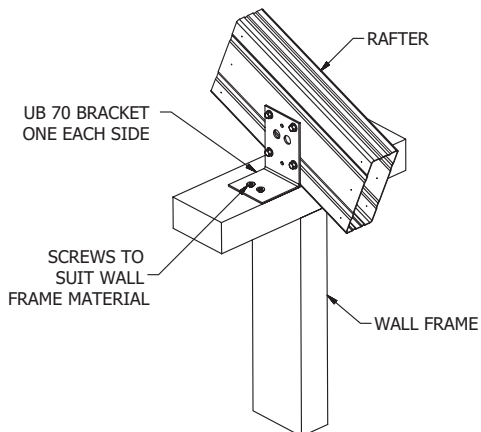
**WALING PLATE TO BUILDING CONNECTION**



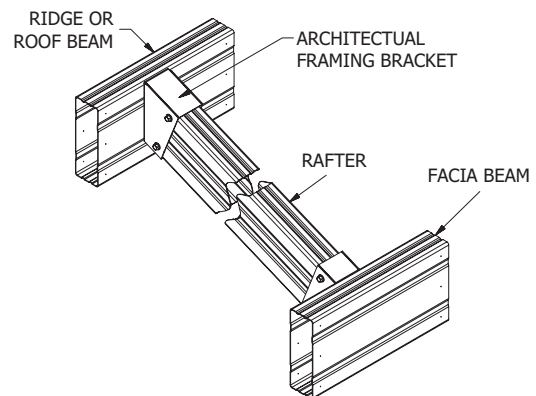
**WALING PLATE TO BUILDING WITH OPENING ABOVE**



**DOUBLE BEAM SCREW LAMINATION DETAILS**



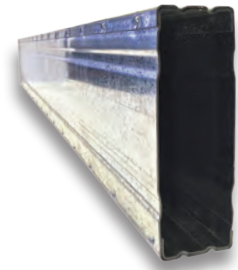
**RAFTER TO WALL FRAME CONNECTION**



**RAFTER TO ROOF BEAM CONNECTION**

## BOXSPAN

Boxspan® light structural steel beam is a cold formed structural 'box-section' manufactured from two high tensile zinc coated 'C'– sections which are interlocked together by a patented staking process on the top and bottom flanges to form a rigid rectangular hollow section.



## IDENTIFICATION

Boxspan members are identified by the marking system as follows.

Product Description (Boxspan: B)	Depth of section (mm)	Material Gauge Total thickness of metal at the Flange. 2 x Base Metal Thickness (BMT) x 10
B	100	20

Other variations of Boxspan beams with prefixes are: (XB: Boxspan Z600 Coating, SB: Smart Bearer)

## DIMENSIONS

The dimensions and mass of Boxspan members are shown in the tables that follow.

	Boxspan Section	Dimensions D x W (mm)	Base Material Thickness BMT (mm)	Mass (kg/m)
	<b>B100-12</b>	100 x 50	0.60	2.13
<b>B100-16</b>	100 x 50	0.80	2.80	
<b>B150-12</b>	150 x 50	0.60	2.63	
<b>B150-16</b>	150 x 50	0.80	3.50	
<b>B150-20</b>	150 x 50	1.00	4.32	
<b>B200-16</b>	200 x 50	0.80	4.11	
<b>B200-20</b>	200 x 50	1.00	5.10	
<b>B250-20</b>	250 x 50	1.00	5.91	

## BOXSPAN SECTION PROPERTIES - AS/NZS 4600:2005

Boxspan Section	Depth	Width	Web Thickness	Mass	Effective Area	Effective section modulus	Yield strength	Second moment of area	Nominal section moment capacity	Nominal shear capacity of web	Nominal bearing capacity <sup>(1)</sup>	Nominal bearing capacity <sup>(2)</sup>
	D	W	BMT	m	Ae	Zex x 10 <sup>3</sup>	Fy	Ix x 10 <sup>6</sup>	ϕMs	ϕVv	ϕRb(1)	ϕRb(2)
	(mm)	(mm)	(mm)	(kg/m)	(mm <sup>2</sup> )	(mm <sup>3</sup> )	(MPa)	(mm <sup>4</sup> )	(kNm)	(kN)	(kN)	(kN)
<b>B100-12</b>	100	50	0.6	2.13	268.9	8.46	550	0.421	4.27	12.04	8.17	7.80
<b>B100-16</b>	100	50	0.8	2.8	358.5	11.28	550	0.562	5.79	26.61	13.12	12.80
<b>B150-12</b>	150	50	0.6	2.63	328.9	14.60	550	1.093	7.14	4.86	8.17	7.80
<b>B150-16</b>	150	50	0.8	3.5	438.5	19.47	550	1.457	9.88	19.00	13.49	12.80
<b>B150-20</b>	150	50	1.0	4.32	548.1	24.33	550	1.821	12.55	36.80	19.97	18.92
<b>B200-16</b>	200	50	0.8	4.11	518.5	29.04	550	2.901	14.28	9.75	13.49	12.80
<b>B200-20</b>	200	50	1.0	5.1	648.1	36.30	550	3.626	18.47	18.89	19.97	18.92
<b>B250-20</b>	250	50	1.0	5.91	747.7	49.90	550	6.228	24.53	14.47	19.97	18.92

**BOXSPAN MATERIAL SPECIFICATION**

Boxspan light structural steel beams are made from zinc coated high tensile grade G550 steel complying with the AS 1397:2001 (AS1397/G550 Z275). Base metal thicknesses (BMT) of the products are: 0.60mm; 0.80mm and 1.00mm.

**COATING SPECIFICATION**

Boxspan is rolled from sheet metal with zinc coating of Z275. The Z275 coating relates to a minimum zinc coating of 275g/m<sup>2</sup> in accordance with AS 1397:2001 (g/m<sup>2</sup> = grams of zinc per m<sup>2</sup>).

The Building Code of Australia provides guidance on the minimum coating class required for cold-formed steel members with regards to the surrounding environmental conditions (i.e., industrial or coastal). The designer shall approve the adequacy of the coating for the intended use of Boxspan.

A higher zinc coating of Z600 (600g/m<sup>2</sup>) is also available for certain Boxspan sizes where higher coating class is required for the project.

**MANUFACTURING TOLERANCES**

The tolerances for Boxspan members are within the manufacturing tolerance requirements outlined in Appendix D of the NASH Standard, Residential and Low-rise Steel Framing, Part 1: Design Criteria 2005.

**BRACKETS**

Spantec produce a range of brackets that allow a very large number of floor and roof configurations to be assembled. The arrangement of the brackets are outlined in the 'Connection & Installation Details' section.

The brackets are supplied to suit the different Boxspan depths as well as a range of angles and roof pitches.

**BRACKET MATERIAL SPECIFICATION**

Boxspan structural brackets are made from zinc coated G2 grade steel complying with (AS1397/G2 Z275) and AS/NZS 1365:1996. Base metal thicknesses (BMT) of the brackets range from 0.9mm – 1.55mm.

**COATING SPECIFICATION**

The brackets are rolled from sheet metal with the zinc coating of Z275. The Z275 coating relates to a minimum zinc coating of 275g/m<sup>2</sup> in accordance with AS 1397:2001 (275 grams of zinc per m<sup>2</sup>).

The Building Code of Australia provides guidance on the minimum coating class required for cold-formed steel members with regards to the surrounding environmental conditions (i.e., industrial or coastal). The designer shall approve the adequacy of the coating for the intended use of Boxspan.

Hot dipped galvanized (to a coating level of 600g/m<sup>2</sup>) brackets are also available for fixing Boxspan with higher zinc coating.

**FASTENERS**

Spantec supply a range of fasteners for bracket fixing and fixing to structural steel. The class of finish on the screws shall comply with requirements of AS 3566:2002 or other applicable standard. The fastener type and quantity required for the connection type are shown in a table with the connection detail.

The screws in the Connection Details section are the minimum size for the quantity shown. A larger screw size with the same head type may be substituted.

Description	Application	Class of Finish
12-14x20mm Hex Head self drilling screw (Tek screw)	To connect brackets to Boxspan	Class 3 (AS 3566)
10-16x16mm Wafer Head self drilling screw (Tek screw)		
12-24x20mm Hex Head self drilling screw (3-5mm thickness)	To connect brackets to structural steel	Class 3 (AS 3566)
12-24x32mm Hex Head self drilling screw (4-10mm thickness)		
12-14x75mm Hex Head self drilling screw (Tek screw)	Long fixing screws to laminate beams and to fix to brackets from one side only.	Class 3 (AS 3566)



**SPANTEC™**

**SPANTEC SYSTEMS PTY LTD**

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