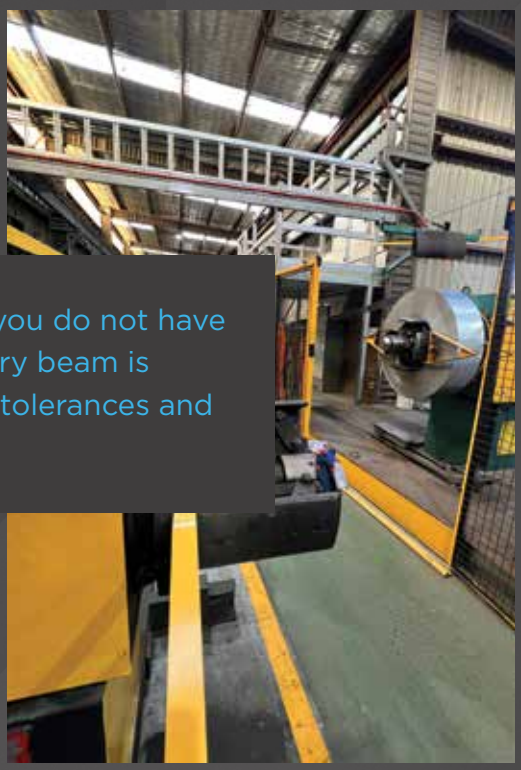
BOXSPAN®

DESIGN GUIDE

Residential

SPANTEC™

MAKING BUILDING EASY



Building with Boxspan simply means you do not have to compromise on quality as every beam is manufactured to extremely accurate tolerances and seamlessly finished.

About us

At Spantec, we believe that building and construction should be an effortless journey.

Established in Australia, we have built our legacy on innovative solutions that redefine the construction industry. With over 30 years of experience, we have transformed countless sub floor, deck and roofing projects into reality, ensuring that each structure is not only strong but beautifully crafted and simple to install.

Our story began with a simple yet powerful vision: to simplify the building process. As we grew, we developed a unique approach that combines cutting edge technology with a deep understanding of the needs of builders and homeowners alike. Our minimal waste and pre-engineered products and systems are designed for efficiency, allowing for faster project completion without compromising on quality.

What sets us apart is our unwavering commitment to customer satisfaction. We pride ourselves on our collaborative spirit, working hand in hand with our clients to deliver solutions that meet their specific requirements. Through residential and commercial projects, our diverse portfolio showcases our adaptability and expertise across various sectors.

At Spantec, our mission is clear, Making Building Easy. We strive to empower builders and specifiers with the tools and support they need to bring their project to life, ensuring a seamless experience from conception to completion.

BOXSPAN

Australian manufactured out of BlueScope steel coil, Boxspan is an innovative, lightweight and highly durable construction material designed to revolutionize the way you build. Whether you're a builder, specifier or a DIY enthusiast, Boxspan beams offers unparalleled versatility across all construction sectors.

Boxspan is manufactured from high tensile Z450 coated steel coil, it provides a beam with exceptional strength to weight ratio that makes it easier to handle and install. Its unique box beam design ensures stability and precision in every application from flooring systems, decks, roofs to structural wall frames. Boxspan adapts to various construction needs with ease.

Supporting Accessories range

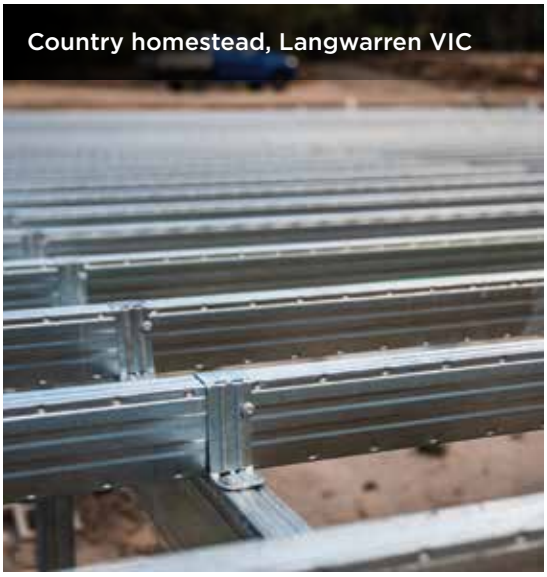
- A large range of off-the-shelf brackets for sub floors, decks and roof applications.
- Ezipier, our steel adjustable pier.
- Ezibrace, sub floor and deck cross bracing system.

Contents

Boxspan in action

Sloping site, Titaatee Creek NSW

Country homestead, Langwarren VIC



Skillion roof, Collaroy NSW

Raised floor, Gisbourne VIC

Deck, bushfire zone, Glenorie NSW

Alfresco, Orangeville NSW

Curved sub floor, Forster VIC

High set deck, Kurrajong, NSW

Custom roof, Southern Highlands NSW

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Our Reference **3333-05-SL01_A**

2nd February 2026

STRUCTURAL DESIGN CERTIFICATION
Structural Assessment of Spantec Boxspan Span Tables
Boxspan Design Guide Residential Feb 2026 edition

This assessment has been certified by the undersigned for the structural selection programs and span tables as described in Boxspan Design Guide Residentia; Feb 2026 edition.

I consider that the guideline complies with the following structural provisions on the National Construction Code of Australia (NCC) 2022:

- Volume Two, Streel Frame, Part 3.4.2.

The assessment considered the following:

1) The design programs to determine the values of beam load width, beam spacing, member span and connection capacity to calculate the span tables in the publication, comply with generally accepted engineering principles and these following Australian Standards:

- AS1170.0:2002 Structural Design Actions - Part 0: General Principles
- AS1170.1:2002 Structural Design Actions - Part 1: Permanent Imposed and other Actions.
- AS1170.2-2021: Wind Actions
- AS4055-2021: Wind Loads for Housing.
- AS4600:2018 Cold-Formed Steel Structures.
- AS3566.1-2002 Self Drilling Screws for the Building and Construction Industries - Part 1 General Requirements and Mechanical Properties.
- NASH Standard Residential and Low-Rise Steel Framing - Part 2: Design Solutions 2014.
- AS1397: 2011 - Steel Sheet and Strip Hot Dipped Zinc Coated or Aluminium/Zinc Coated.

2) The design capacities of Bending (**Mb**), Shear (**Vv**) and Bearing (**Rb**) have been determined in accordance with engineering calculations, laboratory testing and Australian Standard AS4600 Cold Formed Steel Structures.

3) The ultimate limit strength and serviceability limits of the Boxspan members have been determined using AS1170.0-2002, AS4600-2018 and testing results of Spantec.

4) The wind actions for strength and serviceability limits have been determined using AS1170.2-2021 (Wind Actions) and AS4055-2021 (Wind Loads for Housing).

This certification may be considered as "Evidence of Suitability" under the National Construction Code of Australia (NCC), Volume One Clause A2.2 Performance Solutions. Information in the Spantec Systems Publication not specifically referenced in this certification is outside the scope of this assessment. This certification does not relieve other parties of their duties and responsibilities. The tables describe many different structures and any specific structure should be fully described with geometry and loading.

The span tables are part of a system with included the Spantec Boxspan Brackets and Fixing.

The system can be considered complete for its intended purpose provide that:

- Connections, fixings and details are in accordance with system specifications, documentation and drawings which must be verified by the certifier.
- Supporting structural is stable, able to withstand the wind uplift, beam reactions and separately certified.
- The beams are installed in accordance with the designs and professional building standards.

If you have any further enquiries regarding this matter, please do not hesitate to contact the undersigned.

Yours faithfully
HALINA ENGINEERS PTY LTD

Ha Nguyen
BE(Hons) PhD MIEAust CPEng NER4188792 PE0001349 RPEQ24385
PRE-0000735 DEP-0000876
Principal Structural Engineer/Director

NASH COATING SPECIFICATIONS

Table A1: Protection requirements for steel framing components in various atmospheric environments

DESIGNATION	ATMOSPHERIC CORROSIVITY CATEGORY			
	C1	C2	C3	C4
DESCRIPTION (REFER TO AS 4312 AND ISO 9223) See notes opposite for full description of category				
APPLICATION				
COMPONENTS INACCESSIBLE FOR MAINTENANCE				
Roof framing system — unventilated	A	A	C	C
Roof framing system — ventilated	NA	B	C	D
Floor bearers & joists including intermediate floors — unventilated	A	A	C	C
Floor bearers & joists — ventilated	NA	B	D	D
Decking/Balcony — Integral (eg cantilevered)	NA	C	D	D
Ceiling Battens		A	C	C
COMPONENTS ACCESSIBLE FOR MAINTENANCE				
Roof Battens	NA	B	C	C
Stumps & piers supporting main building	NA	C	C	C
Decking/Balcony — Independent of main structure	NA	B	C	C
Verandah Beams & Rafters	NA	B	C	D
Verandah Posts & Stumps	NA	B	C	D
Carport Rafters & Beams	NA	C	C	D
Carport Posts	NA	B	C	D
Lower Storey unlined eaves & Pergola Rafters & Beams	A	B	C	D
Pergola Posts	NA	B	C	D

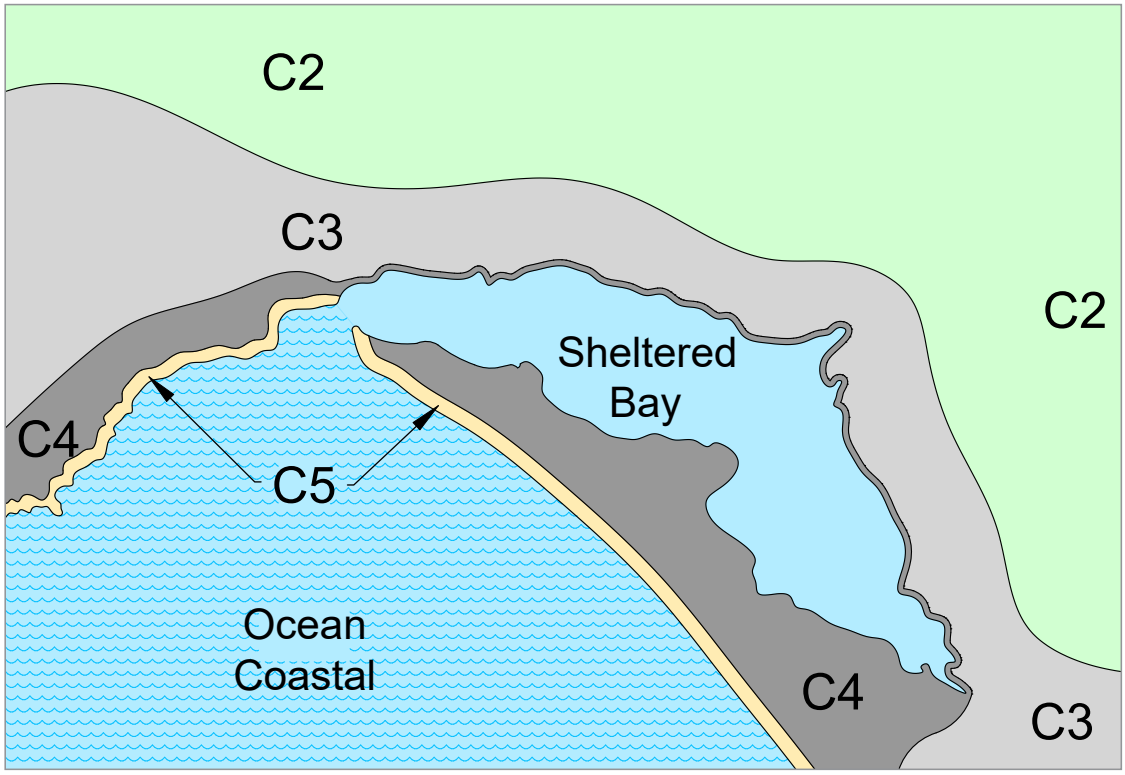
Table A2: Metallic Coating specifications for steel members

METALLIC COATING SPECIFICATIONS						
	HOT DIP METALLIC COATED STRIP AS 1397					
Protection designation (Refer to Table A1)	Zinc	Aluminium/Zinc	Aluminium/ Magnesium/ Zinc	Open Sections Zinc/ Aluminium AS/NZS 4791	Hollow Sections either: Hot Dip Galvanised (ZB, ILG, HDG) or Electroplated (ZE) — Zinc AS/NZS 4792 AS 4750	Post fabrication hot dip galvanised Zinc AS/NZS 4680
A	Z275	AZ150	AM150	IZA75	ZE50/50	HDG320
B	Z275	AZ150	AM150	IZA75	ZB100/100, ILG100	HDG320
C	Z275	AZ150	AM150	IZA75	HDG300, ILG140, ZB135/135	HDG320
D	Z450	AZ150	AM150	IZA75	HDG300	HDG320

NOTES

As highlighted Boxspan is Z450 as standard, Ezipier posts are ZB135/135 as standard with the option of a higher HDG300.
All Ezipier bases and adjustable heads are HDG300 as standard.

Corrosion category



ZONE	DEFINITION
C2	1km and greater from sheltered bay 50km and greater from breaking surf
C3	50m to 1km from sheltered bay 1km to 20km from breaking surf 1km to 50km from breaking surf if strong wind is present
C4	<50m from shore in sheltered bay 300m to 1km from breaking surf 500m to 1km from breaking surf if strong wind is present
C5	<300m from breaking surf >500m from breaking surf if strong wind is present

COMPLIANCE & STANDARDS

Boxspan™ beams are recognised by Green Building Council of Australia (GBCA) as a Best Practise Product.

Spantec manufactures our Boxspan™ beams from Australian Made BlueScope® Zinc Hi-Ten® Z450 steel coil. This coil is manufactured at the Port Kembla Steel Works, which is an internationally recognised ResponsibleSteel™ certified site. Zinc Hi-Ten® has an associated Environmental Product Declaration (EPD), a combination of these two initiatives means that our Boxspan™ beams are classed as Best Practice Products under the Green Star Responsible Products Framework.

Spantec's Boxspan beams have a Responsible Product Value (RPV) of 15.

For more information on how BlueScope® Steel is recognised by GBCA visit: https://steel.com.au/resources/articles/green-star

EPD documents and ResponsibleSteel™ certification documents are available from Spantec or via the link above.

Boxspan, Manufactured from Zinc Hi Ten Z450 in all sizes and thicknesses.

Contact our office or email us at **sales@spantec.com.au** to received your green star rated EPD documents.

Manufacturing Capability

Spantec's inhouse continuous improvements have allowed us to increase not only our manufacturing ability but our ability to size change across eight varying Boxspan sizes at faster speeds, enhanced by our automated robotic manufacturing lines this allows any size order to be produced and shipped at a rapid rate.

Boxspan Patented Process

The Boxspan Patent revolves around the stitching on the side of the Boxspan Beam and the way that it is manufactured, this beam is stitched and not welded, this unique structural beam is manufactured from twin, roll formed "C" shaped sections that are fixed together by a proprietary post forming process that provides a strong shear connection between the two sections. This creates a lightweight beam that has high torsional strength.

Quality Control Standards

Boxspan manufacturing quality control standards are in place to ensure that every beam that is produced is to the highest standard in tolerance, squareness and bow. These measures are in place to ensure only the highest quality product is delivered.

Code Compliance

All Spantec products manufactured comply with the relevant Australian and Nash standards, all manufactured beams and accessories not only meet but often exceed all relevant Australian standards. Refer certification listed within this span table guide.

Energy

Spantec is committed to reducing the amount of energy needed to manufacture product. Over the last 10 years, through continuous improvement of our process, improving efficiency and eliminating waste we have seen large reduction in the energy used to manufacture each beam or bracket, this has in return resulted in more product being manufactured in a standard shift, 80% of our Boxspan beams are also manufactured to the exact length, therefore reducing cutting waste on building sites and landfill. Our minimal scrap is then recycled.

SECTION PROPERTIES & TECHNICAL SPECIFICATIONS

Identification

Boxspan members are identified by the marking system as follows.

Product Description	Depth of section: mm	Flange Material Gauge: mm x 10
B	150	20

e.g. B150-20

B – Boxspan

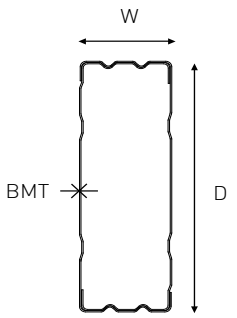
150 – beam depth

20 – beam has a base metal thickness of 1.0mm with double thickness at the flanges.

Other variations of Boxspan beams with prefixes are:

SB – Boxspan Smart Bearer – a bearer with pre-punched pilot holes at the bracket location.

Dimensions



Boxspan Section	Dimensions D x W (mm)	Base Material Thickness BMT (mm)
B100-12	100 x 50	0.60
B100-16	100 x 50	0.80
B150-16	150 x 50	0.80
B150-20	150 x 50	1.00
B150-24	150 x 50	1.20
B200-16	200 x 50	0.80
B200-20	200 x 50	1.00
B250-20	250 x 50	1.00

Boxspan Section Properties

Boxspan Section	Depth	Width	Web Thickness	Mass	Effective Area	Full section modulus	Moment of inertia	Bending moment capacity	Shear capacity
	D	W	BMT	m	Aeff	Zx	Ix	φMb	φVv
	mm	mm	mm	kg/m	mm^2	$mm^3 \times 10^3$	$mm^4 \times 10^6$	kN-m	kN
B100-12	100	50	0.6	2.07	262	8.39	0.420	2.77	21.08
B100-16	100	50	0.8	2.70	342	11.04	0.552	4.37	28.10
B150-16	150	50	0.8	3.32	421	18.83	1.412	6.78	27.73
B150-20	150	50	1.0	4.14	525	23.40	1.755	9.34	42.29
B150-24	150	50	1.2	4.99	632	28.19	2.114	12.59	43.47
B200-16	200	50	0.8	3.96	502	28.22	2.822	9.03	24.02
B200-20	200	50	1.0	4.95	627	34.99	3.499	12.59	32.60
B250-20	250	50	1.0	5.74	727	48.14	6.018	16.92	26.08

NOTES

The section properties are calculated using Thin Wall 2 software developed by Sydney University and AS4600.

Bending Moment and Shear Capacities have been derived from in-house testing.

DESIGN NOTES

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.

3 The design of Boxspan and its connection complies 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 1170.2:2021 Structural design actions – Part 2: Wind actions
- AS 4055:2021 Wind loads for Housing
- AS/NZS 4600:2018 Cold-formed steel structures
- AS 1397:2021 Steel sheet and strip – Hot dipped zinc-coated or aluminium/zinc-coated
- AS 3566.1:2002 Self drilling screws
- NASH Standard Residential and Low-rise Steel Framing Part 1: Design Criteria 2005 and Part 2: Design Solutions 2014

4 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.

5 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

- Dead Loads: 0.75kPa (75kg/sqm) includes the weight of either 19mm particle board, insulation and carpet or 10mm tiles on 15mm compressed fibre cement sheeting and includes Boxspan beams.
- Dead Loads: 1.1kPa (110kg/sqm) includes the weight of either 75mm AAC (autoclaved aerated concrete) panel with tiles/carpet or 10mm tiles on 18mm compressed fibre cement sheeting and includes Boxspan beams.

Live Loads

- Live Loads: 1.5 kPa (150kg/sqm) for internal residential floor loads and deck floor loads that are less than 1m above ground.
- Live Loads: 2.0kPa (200kg/sqm) for residential external Floors, e.g. deck floor loads greater than 1m above ground.

The live loads categories are based on the Australian standard AS1170.1.

Roof loads

Dead Loads

- Dead Loads: 0.2kPa (20kg/sqm) includes the weight of the roof sheeting and Boxspan beams.
- Dead Loads: 0.4kPa (40kg/sqm) includes the weight of the roof sheeting, insulation, wiring, plasterboard and Boxspan beams.
- Dead Loads: 0.9kPa (90kg/sqm) includes the weight of the terracotta tiles, insulation, wiring, plasterboard and Boxspan beams.

Live Loads

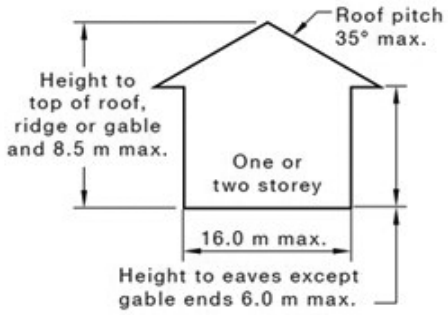
- Roof Maintenance Load: 0.25 kPa (25kg/sqm) non-trafficable roof includes a 1.1kN concentrated load (the factored up concentrated design load is 1.5 x 1.1kN = 1.8kN for strength). This live load covers maintenance on the roof and is not coincident with the wind and snow load.

Wind loads

The Wind classification and pressures are in accordance with AS4055:2021 and wind coefficients in accordance AS1170.2:2021 where not covered by AS4055.

The Span Tables are for wind up to classification N3 (W41). At the N3 wind pressure, wind does not govern the maximum span of Boxspan beams used in floors.

6 The limitation of single or double storey construction in AS4055 and the span tables are 8.5m in height and 16m in length.



7 EXCEPTIONS

The span tables do not consider the design, certification or structural adequacy of any:

- Pier supports
- Subfloor bracing
- Existing or new foundation
- Connection to the foundation
- Connection to the existing structure
- Structural adequacy of the supporting structure (e.g. walls) to carry the additional floor and/or roof loads.

The builder/owner is to ensure that the necessary approvals and certificates are obtained for the structure from a Civil/Structural Engineer or another competent person.

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

8 Proprietary items supplied by others shall be installed in accordance with the manufacturer's specification.

9 The roof span tables for awnings have been prepared for 1 side attached and free-standing, in accordance with AS/NZS 1170.2:2021 requirements.

10 The designer shall ensure that the products selected protective coating meets acceptable construction practice (steel framing) reference NCC 2022 Part H1 Structure, H1D6 Framing refers to NASH Standard Residential and Low-rise Steel Framing Part 2: Design Solutions 2014, Section 8 Durability and Appendix B Durability Design.

Floor construction systems

The two main types of construction when using Boxspan floors are:

- Monoplane with single span joists.
  Monoplane construction has top of the joists and bearers in the same plane.
- Conventional with continuous span Joists.
  Conventional construction has the joists running continuously over the top of the bearers.

Span tables and Beam spans

The tables in this publication refer to three types of spans:

- Single span – the beam sits on 2 supports
- Double span – the beam sits on 3 supports and is covered by double span in the tables.
- Triple Span – the beam sits on 4 supports and is covered by triple span in the tables.

For continuous spanning beams in the tables, the spans can be uneven. Select the biggest individual span and use that in the table for the double or triple span. The smaller span must be greater than 80% of the bigger span.

All ends of beams must be closed using an End Cap Internal bracket and all beam joins shall be over a support.

Beam spacing/centres

Span tables for floor joists, bearers, purlins, rafters, roof beams, lintels and ceiling joist are determined using their spacing (centre to centre distance) to select their respective spans. Please refer to spacing/centres diagram alongside the span tables.

Cantilever

Cantilevered members can been designed to support a live load of 1.5 kPa for decks below 1m from the ground and 2.0 kPa for balconies and decks above 1m from the ground. Care is to be taken by the builder to ensure total weather protection prevents moisture entering the building.

Floor performance

Dynamic performance of light steel floor systems can be subjective based on the end user's perception, the following criterion has been chosen:

1 The maximum allowable spans have been designed to meet the strength and serviceability limits specified in AS1170.0:2002 Structural Design Actions – Part 0.

2 In some cases, spans calculated by the above criteria have been reduced based on testing and extensive field testing carried out over more than 30 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 autoclaved aerated concrete floor panels) or supporting non load bearing walls will be stiffer than floors carrying lower dead loads. The effect of this is to dampen the floor for vibration.

Floors will not reach their peak performance until carrying design dead loads. This includes, in particular, loads applied by internal and external walls including wall lining and (for upper floors) ceilings fixed below. The floor will perform best after the house is tenanted.

Horizontal wind shear

This is where the horizontal wind forces are transferred from the building's walls to floor and to the subfloor bracing.

- Where the Boxspan floor frame construction is monoplane and Ezipiers are used, the ultimate horizontal load can be transfer through the Ezipier to the subfloor bracing. See Spantec's Ezipier engineering drawings for connection details.
- Where the Boxspan floor frame construction is conventional, it is the builder/owner's responsibility to use sufficient shear blocking connected within the floor frame to transfer this force to the subfloor bracing.

NOTE If other proprietary products are used in conjunction with Spantec's products, then it is the builder/owner's responsibility to account for this horizontal wind shear force.

Fasteners

Spantec supply a range of Class 4 and Class 3 fasteners for bracket fixing and fixing to structural steel. The class of finish on all Teks screw (self-drilling screws) shall comply with the requirements of AS 3566.1:2002.

The fastener type and application are shown in a table below.

NOTE The fastener notation:

e.g. 12 – 24 x 32 Hex Head Tek screw

12 – imperial gauge (shaft diameter). Except for metric screws like M6 above.

14 – number of threads per inch.

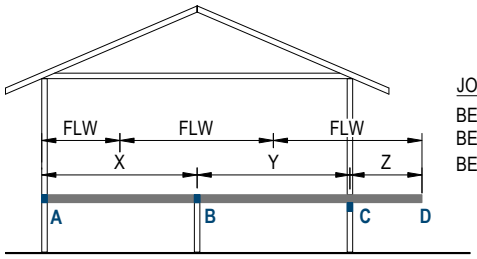
32 – underside of head to tip length in mm.

Hex Head – head shape is hexagonal and uses a 5/16" Nutsetter driver bit.

Pancake Head – low profile head and uses a No.3 Philips driver bit.

Fastener Description	Description
14 –14 x 22 Hex Head Tek screw	To connect brackets to Boxspan beams
M6 – 1.0 x 22 Pancake Head Tek screw	To connect brackets to Boxspan beams where low-profile heads are preferable
12 – 14 x 75 Hex Head Tek screw	Used to screw laminate Boxspan beams together
12 –24 x 32 Hex Head Tek screw	To connect brackets to SHS and structural steel beams (2-10mm material thickness)
10 – 16 x 45 Wing tip Tek screw	To connect flooring to Boxspan beams

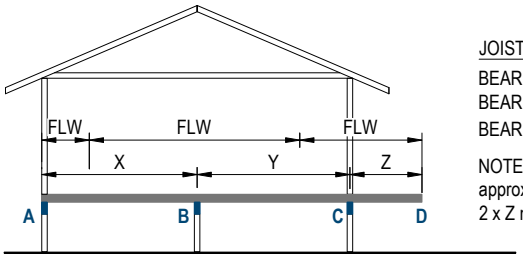
Floor load widths



JOISTS: AB, BD

BEARER **A**: FLW = X/2
BEARER **B**: FLW = X/2 + Y + Z - (Y + Z)² / 2Y
BEARER **C**: FLW = (Y + Z)² / 2Y

1. FLOOR LOAD WIDTH FOR MONOPLANE SYSTEM (JOISTS IN SINGLE SPAN - INTO INTERNAL BEARER)

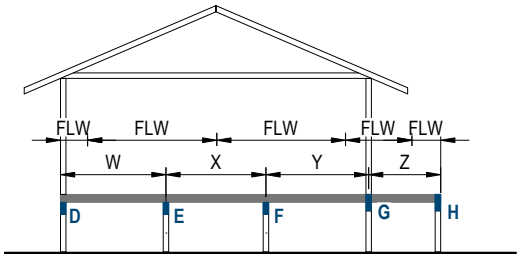


JOIST AD:

BEARER **A**: FLW = 0.4X
BEARER **B**: FLW = 1.25 (X + Y) / 2
BEARER **C**: FLW = 0.5Y + Z

NOTE: Formulae are conservative approximations.
2 x Z minimum Cantilever backspan

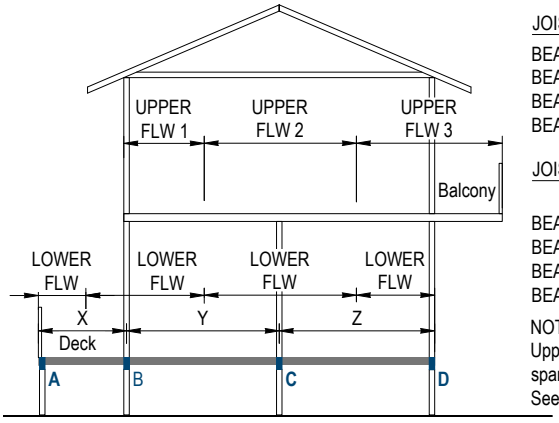
2. FLOOR LOAD WIDTH FOR CONVENTIONAL SYSTEM (JOISTS IN CONTINUOUS DOUBLE SPAN - OVER INTERNAL BEARER)



JOISTS: AG, GH

BEARER **D**: FLW = 0.4 W
BEARER **E**: FLW = 1.1 (W x X) / 2
BEARER **F**: FLW = 1.1 (X x Y) / 2
BEARER **G**: FLW = 0.4Y + Z / 2
BEARER **H**: FLW = Z / 2

3. FLOOR LOAD WIDTH FOR CONVENTIONAL SYSTEM (JOISTS IN CONTINUOUS TRIPLE SPAN - OVER INTERNAL BEARER)



JOISTS: AB, BC, CD MONOPLANE

BEARER **A**: LOWER FLW = X / 2
BEARER **B**: LOWER FLW = UPPER FLW 1 + (X + Y) / 2
BEARER **C**: LOWER FLW = UPPER FLW 2 + (Y + Z) / 2
BEARER **D**: LOWER FLW = UPPER FLW 3 + Z / 2

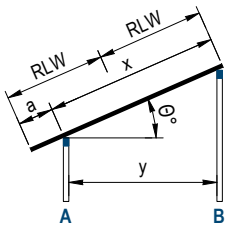
JOISTS: AB SINGLE SPAN & BD CONTINUOUS DOUBLE SPAN

BEARER **A**: LOWER FLW = X / 2
BEARER **B**: LOWER FLW = UPPER FLW 1 + X / 2 + 0.375Y
BEARER **C**: LOWER FLW = UPPER FLW 2 + 1.25 (Y + Z) /2
BEARER **D**: LOWER FLW = UPPER FLW 3 + 0.375 Z

NOTE:
Upper FLW depends on whether beams are single span (Monoplane) or continuous over internal walls.
See Diagrams 1 & 2 for formulae.

4. DOUBLE STOREY - LOWER FLOOR SUPPORTING UPPER FLOOR

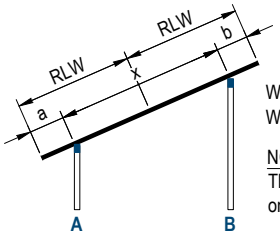
Roof load widths



WALL **A**: RLW = $(a + x)^2 / 2x$
WALL **B**: RLW = $a + x - \underline{(a + x)^2}$

NOTE:
The Roof Load Width depends on the roof slope.
$x = y / \cos \Theta$

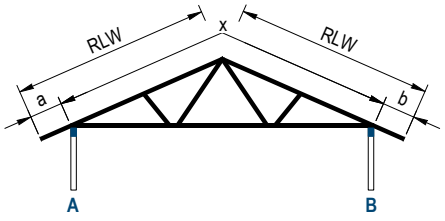
5. SINGLE CANTILEVER RAFTER



WALL **A**: RLW = x / 2 + a
WALL **B**: RLW = x / 2 + b

NOTE:
The Roof Load Width depends on the roof slope.

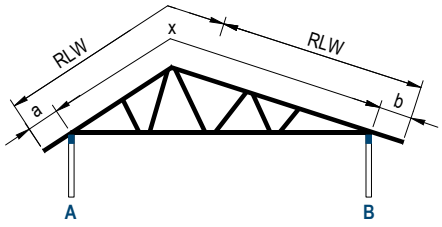
6. TWIN CANTILEVER RAFTER



WALL **A**: RLW = x / 2 + a
WALL **B**: RLW = x / 2 + b

NOTE:
The Roof Load Width depends on the roof slope.

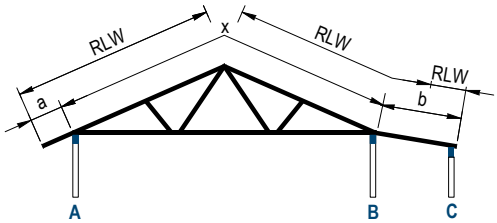
7. SYMMETRICAL TRUSS



WALL **A**: RLW = x / 2 + a
WALL **B**: RLW = x / 2 + b

NOTE:
The Roof Load Width depends on the roof slope.

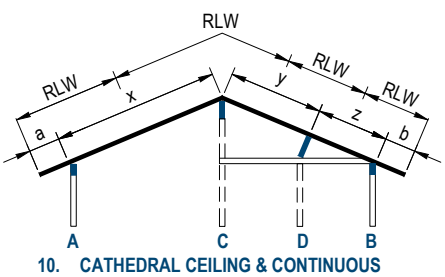
8. ASSYMMETRICAL TRUSS



WALL **A**: RLW = a + x / 2
WALL **B**: RLW = (x + b) / 2
VERANDAH
BEAM **C**: RLW = b / 2

NOTE:
The Roof Load Width depends on the roof slope.

9. TRUSS WITH VERANDAH



RAFTER: AC, CB (CONTINUOUS SPAN)
WALL **A**: RLW = $(a + x)^2 / 2x$
WALL **B**: RLW = 0.375z + b
WALL/BEAM **C**: RLW = 0.5x +0.375y
WALL/BEAM **D**: RLW = 1.25 (y+z) /2

NOTE:
Wall B, C, D based on conservative estimate for small overhang 'a'.
The Roof Load Width depends on the roof slope.

10. CATHEDRAL CEILING & CONTINUOUS RAFTER OVER BEAMS

Boxspan specification

Boxspan material specification

Boxspan light steel beams are made from zinc coated high tensile grade G550 steel complying with AS 1397:2021. Base metal thickness (BMT) of the products is: 0.6, 0.8, 1.0 and 1.2mm.

Boxspan coating specification

Boxspan is rolled from sheet metal with an aluminium/zinc coating of Z450 in accordance with AS 1397:2021.

The National Construction Code (NCC) and the NASH standard 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 environments).

Manufacturing tolerances

The tolerances for Boxspan members are within Spantec's stringent manufacturing tolerances in addition to NASH standard Residential and Low-rise Steel Framing Part:1 Design Criteria 2005 appendix D.

Bracket material and coating specification

Spantec Manufactured bracket group:

1.5mm – G250 grade – Z450 coating (Floor, Deck, Flat Roof Brackets FB, AFB, IEC, AB, SB, EC & FB6 holes)

0.9mm – G250 grade – Z275 coating (Joist over bearer brackets, upper floor brackets, TH and Ceiling trimmers)

Purchased bracket group:

1.5mm – G250 Grade – Z275 Coating (Pitched Roof Brackets, AFB Higher Degree Brackets)

1.5mm – G250 Grade – Hot Dip Galvanised (UB50 Rafter bracket)

Bracket coating specification

The manufactured in-house structural brackets are rolled from sheet metal with the zinc coating of Z450 (or equivalent) in accordance with AS 1397:2021.

Lintel

The criteria for lintels above windows and doors are: If the doors are top-hung, in the case of Bi-fold doors, then a maximum deflection of 5mm is used for Dead Load only.

Wind tie-down

Where there is uplift on the roof from the wind, the roof tie down connection to the structure is the builder/owner's responsibility and must be designed by a competent person.

For tie-down details refer to NASH standard Residential and low-rise Steel Framing Part 2: Design Solutions 2014 and/or Timber framing code AS1684.

STORAGE & MAINTENANCE

Coatings, storage, maintenance and corrosion of Spantec products

1 Coatings used

Spantec uses the highest level of corrosion protection for its products, inline with the NASH standards:

- All beams coated to AS/NZS 1397 G550 Z450.
- SHS pre coated to ZB135/135
- HDG available on SHS and brackets to AS/NZS 4680.

2 Choice of product

The protective coating class should be determined by your Project Manager and/or Engineer. The responsibility of determining the correct coating for your environment does not fall onto Spantec.

Please refer to this document, and the NASH Standard – Residential and low-rise steel framing, Part 2: Design solutions, Section 8 Durability. The NASH Publications are referenced in the National Construction code (NCC).

This document references C1-C4 Atmospheric Corrosivity Categories. Refer to NASH Standard – Residential and low-rise steel framing, Part 2: Design solutions, Section 8 Durability.

3 Onsite storage

All Spantec products have a coating to protect against corrosion. The effectiveness of this coating can be compromised by the way it is stored prior to use. Ensuring that each product is dry and has full air flow around the product is critical to ensure the coating retains its integrity. All packs and bags should be opened as soon as possible to ensure all surfaces remain dry.

- Always Store off the ground, ensuring the steel is not in contact with dirt, wet grass etc.
- All packs and bags must be opened within 3 weeks of delivery in C1 and C2 Atmospheric Corrosivity Categories.
- All packs and bags must be opened within 1 weeks of delivery in C3 and C4 Atmospheric Corrosivity Categories.
- During times of high and prolonged humidity extra attention should be paid in ensuring beams are stored with adequate ventilation and should not be stored in direct contact with each other.

4 Maintenance of Boxspan Systems

Where Boxspan® beams are used outside the building envelope good maintenance practice will extend its life.

The first maintenance check would typically involve inspecting the exposed galvanized members for evidence of corrosion. If evidence of corrosion is found, maintenance in the form of cleaning and applying proprietary paint system in accordance with the manufacturer's recommendations will extend the life of the product.

Checks should be performed annually (minimum) or more regularly for C3 and C4 Atmospheric Corrosivity Categories.

NOTE Maintenance is generally not required in applications where the products are enclosed within the building envelope e.g. Floor frames enclosed within a continuous foundation wall or clad subfloor. However, annual checks are still recommended.

Examples of applications requiring maintenance (cleaning) include:

- Verandah and carport beams
- Exposed decks and exposed subfloors in corrosive environments

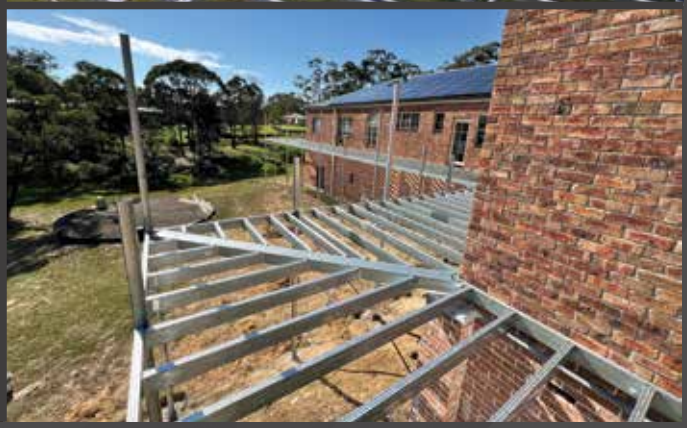
Maintenance required:

C1 and C2 Atmospheric Corrosivity Categories: Exposed product that is not regularly washed by rainwater should be hosed down at least once every six months.

C3 and C4 Atmospheric Corrosivity Categories: Exposed product that is not regularly washed by rainwater should be hosed down at least once every three months.

In cases where the regular maintenance referred to above does not remove all salts that may have adhered to the surface, the following procedure should be carried out:

- Wash the surface with a mild solution of pure soap or mild non-abrasive kitchen detergent in warm water.
- Application should be with a sponge, soft cloth or soft bristle nylon brush, and should be gentle to prevent shiny spots.
- Thoroughly rinse with clean water to remove traces of detergent.
- Never use abrasive or solvent type cleaners e.g. turps, petrol, kerosene, paint thinners etc.



FLOORS & DECKS

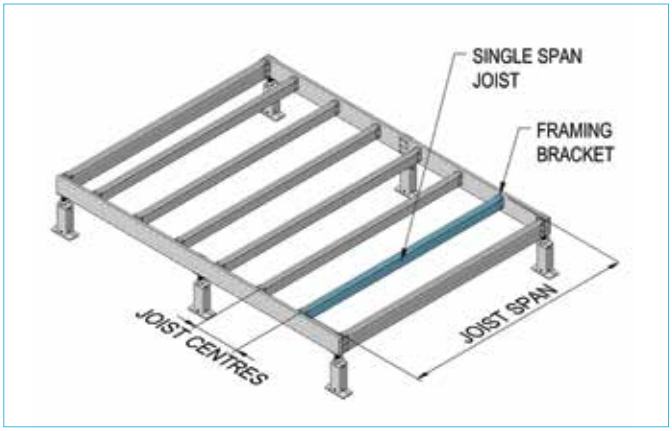
STANDARD LOAD

HEAVIER LOAD

Joists – standard load

Supporting standard residential floor loads only (or decks less than 1m above the ground).

- Live load: 1.5kPa
- Dead load: 0.75kPa
- End supports: Framing bracket 4 hole
- Mid supports: Top hat bracket



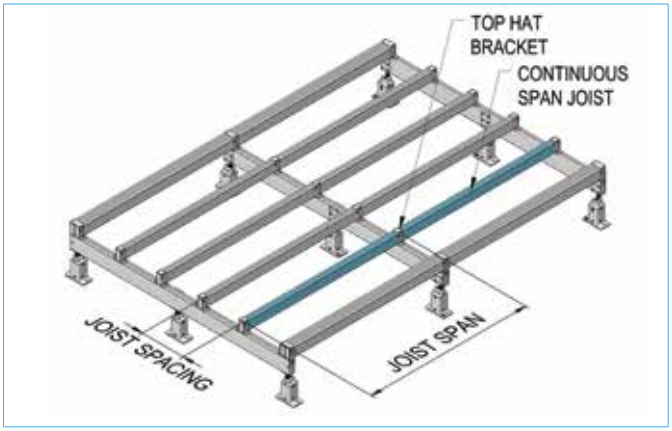


Table 1	MAXIMUM FLOOR JOIST SPAN (mm)								
BOXSPAN SECTION	FLOOR JOIST CENTRES (mm)								
	400	450	600	400	450	600	400	450	600
	SINGLE SPAN			CONTINUOUS DOUBLE SPAN			CONTINUOUS TRIPLE SPAN		
B100-12	2485	2365	2170	2693	2500	2242	2741	2536	2269
B100-16	2770	2626	2395	3020	2780	2474	3078	2822	2505
B150-16	3589	3347	3011	4338	4150	3570	4375	4227	3616
B150-20	3835	3550	3180	4653	4550	3862	4693	4642	3913
B150-24	4185	3850	3430	4815	4802	4034	4857	4844	4087
B200-16	4699	4290	3789	5475	5450	4637	5523	5497	4700
B200-20	5055	4687	4110	5863	5840	5018	5914	5891	5087
B250-20	5921	5750	4915	6885	6860	6060	6945	6920	6149

Joists – standard load

Supported by polypropylene Adjustable Pedestals.

- Live load: 1.5kPa
- Dead load: 0.75kPa

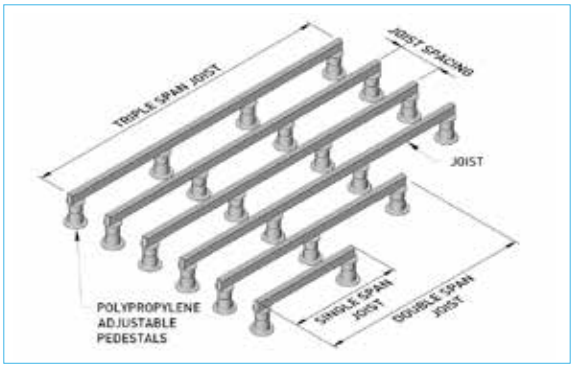


Table 2	MAXIMUM JOIST SPAN (mm) / SUPPORT COMPRESSION CAPACITY (kN)							
BOXSPAN SECTION	JOIST SPACING (MM)							
	360		400		450		600	
	Max Span	#Max Rb	Max Span	#Max Rb	Max Span	#Max Rb	Max Span	#Max Rb
	SINGLE SPAN							
B100-12	2632	3.1	2485	3.1	2365	3.2	2249	3.3
B100-16	2953	3.2	2770	3.2	2626	3.2	2488	3.4
B150-16	3822	3.3	3589	3.3	3347	3.4	3151	3.6
B150-20	4011	3.3	3835	3.4	3550	3.4	3335	3.6
B200-16	4709	3.5	4699	3.5	4290	3.6	3994	3.8
B200-20	5067	3.5	5055	3.6	4687	3.6	4342	4.1
B250-20	5936	3.7	5921	3.8	5750	4.1	5234	4.9
	CONTINUOUS DOUBLE SPAN							
B100-12	2858	4.1 3.2	2693	4.2 3.2	2500	4.4 3.2	2347	5.5 3.3
B100-16	3121	4.4 3.2	3020	4.8 3.2	2780	4.9 3.3	2599	6.1 3.4
B150-16	4356	6.2 3.4	4338	6.8 3.5	4150	7.4 3.5	3793	9.0 3.7
B150-20	4673	6.6 3.5	4653	7.3 3.5	4550	8.1 3.6	4119	9.7 3.8
B200-16	5504	7.8 3.6	5475	8.6 3.7	5402	9.6 3.8	4404	10.4 3.9
B200-20	5888	8.3 3.7	5863	9.2 3.8	5840	10.3 3.9	5430	12.8 4.2
B250-20	6912	9.8 3.8	6885	10.8 3.9	6860	12.2 4.1	6194	14.6 4.4
	CONTINUOUS TRIPLE SPAN							
B100-12	2882	3.7 3.2	2739	3.8 3.2	2536	4.0 3.2	2377	4.9 3.3
B100-16	3147	3.9 3.2	3076	4.3 3.3	2821	4.4 3.3	2632	5.5 3.4
B150-16	4393	5.5 3.4	4374	6.1 3.5	4225	6.6 3.6	3846	8.0 3.7
B150-20	4713	5.9 3.5	4693	6.5 3.5	4640	7.2 3.6	4178	8.7 3.8
B200-16	5550	6.9 3.6	5521	7.7 3.7	5496	8.6 3.8	4959	10.3 4.2
B200-20	5938	7.4 3.7	5912	8.2 3.8	5889	9.2 3.9	5518	11.5 4.7
B250-20	6970	8.7 3.8	6943	9.6 3.9	6917	10.8 4.4	6811	14.2 5.8

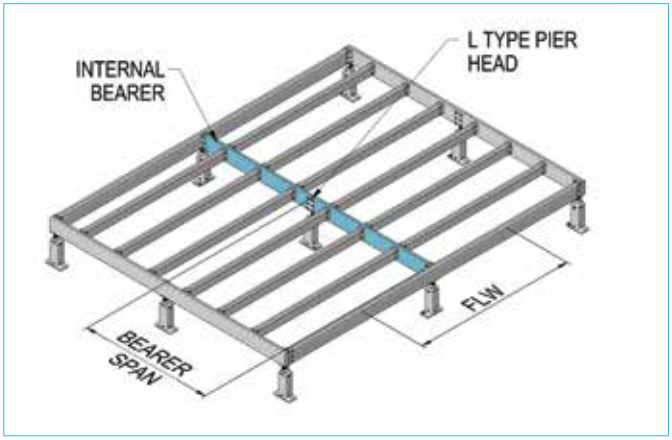
NOTES

Joist SPAN: refer to diagram for Joist span definitions.*
*Above 1m FFL**: For decks higher than 1m, from ground to top of deck.*
#Max Rb : denotes maximum compression capacity of the polypropylene pedestal to attain the listed Boxspan spans, reactions loads in kN.
Refer to the polypropylene pedestal manufacturers technical specification for the products allowable compression capacity.
Single span – one End reation value listed, Continuous span – first reaction value is the max. Internal reaction the second value is the End reaction.
Boxspan requires minimum 50mm bearing length from the pedestal support.

Internal bearers – standard load

Supporting standard residential floor loads only (or decks less than 1m above the ground).

- Live load: 1.5kPa
- Dead load: 0.75kPa
- End supports: Framing bracket into pier head
- Mid supports: L type pier head on inside



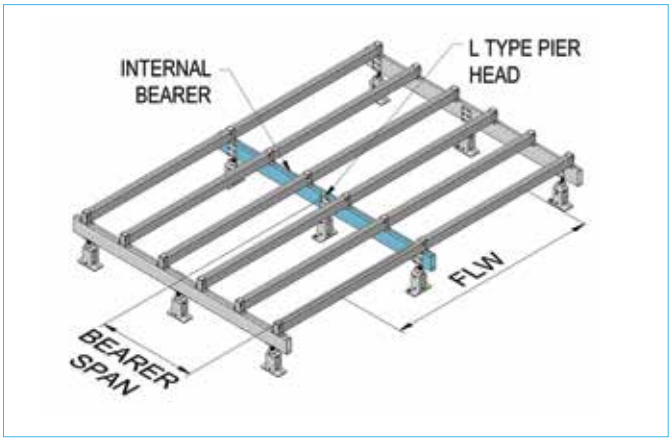


Table 3	MAXIMUM BEARER SPAN (mm)										
BOXSPAN SECTION	FLOOR LOAD WIDTH – FLW (mm)										
	900	1200	1500	1800	2100	2400	3000	3600	4200	4800	5400
	SINGLE SPAN										
B100-16	2612	2378	2211	2083	1982	1898	1765	1665	1585	1520	1465
B150-16	3561	3239	3009	2834	2693	2578	2397	2211	2029	1891	1779
B150-20	3827	3479	3232	3044	2893	2769	2573	2424	2305	2207	2110
B150-24	4070	3701	3437	3237	3076	2944	2736	2576	2450	2345	2257
B200-16	4479	4072	3782	3560	3315	3106	2762	2521	2343	2188	1988
B200-20	4810	4372	4061	3823	3633	3476	3229	2985	2756	2576	2433
B250-20	5759	5234	4861	4575	4347	4159	3780	3446	2972	2604	2317
	CONTINUOUS DOUBLE SPAN										
B100-16	3230	2718	2352	2081	1897	1735	1491	1337	1176	1063	954
B150-16	3754	3123	2698	2374	2130	1941	1599	1341	1159	1022	918
B150-20	4529	3761	3256	2877	2592	2368	2016	1716	1478	1300	1163
B150-24	5260	4380	3785	3351	3018	2765	2359	2009	1728	1518	1355
B200-16	4289	3561	3061	2716	2422	2213	1783	1493	1288	1135	1017
B200-20	5092	4219	3645	3216	2878	2622	2135	1785	1537	1352	1208
B250-20	5592	4605	3938	3454	2964	2597	2084	1744	1501	1320	1181
	CONTINUOUS TRIPLE SPAN										
B100-16	3219	2927	2618	2331	2104	1921	1653	1453	1322	1180	1053
B150-16	4209	3489	3006	2660	2381	2167	1799	1502	1291	1133	1011
B150-20	4724	4219	3652	3228	2903	2650	2280	1933	1659	1455	1296
B150-24	5026	4568	4242	3762	3385	3089	2639	2268	1946	1706	1519
B200-16	4814	3988	3430	3026	2732	2467	2009	1678	1441	1264	1126
B200-20	5714	4735	4088	3614	3232	2936	2412	2013	1728	1515	1349
B250-20	6289	5169	4424	3883	3358	2940	2354	1965	1687	1479	1317

Perimeter bearers – standard load

Supporting standard residential floor loads only (or decks less than 1m above the ground).

- Live load: 1.5kPa
- Dead load: 0.75kPa
- Pier supports: L type pier head on inside

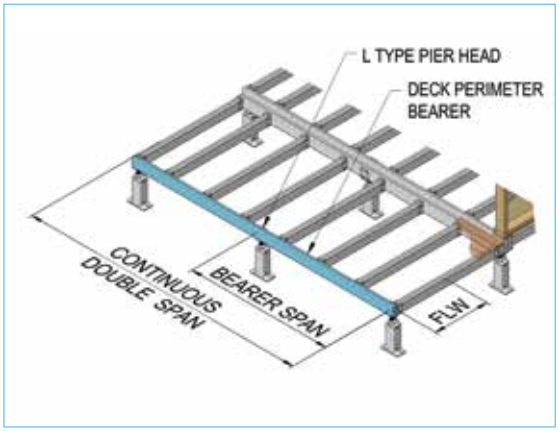
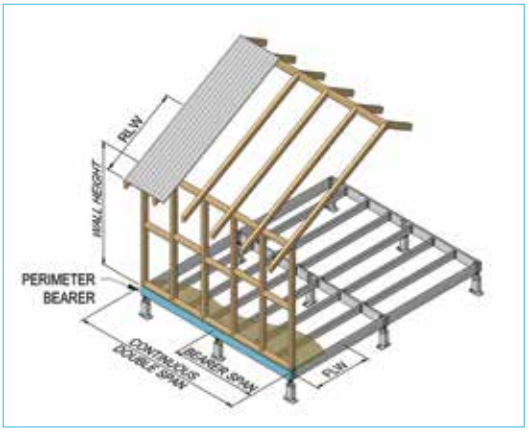


Table 4	MAXIMUM BEARER SPAN (mm)										
BOXSPAN SECTION	FLOOR LOAD WIDTH – FLW (mm)										
	900	1200	1500	1800	2100	2400	3000	3600	4200	4800	5400
	SINGLE SPAN										
B100-16	2612	2378	2211	2083	1982	1898	1765	1665	1585	1520	1465
B150-16	3561	3239	3009	2834	2693	2578	2397	2211	2029	1891	1779
B150-20	3827	3479	3232	3044	2893	2769	2573	2424	2305	2207	2110
B150-24	4070	3701	3437	3237	3076	2944	2736	2576	2450	2345	2257
B200-16	4479	4072	3782	3560	3315	3106	2762	2521	2343	2188	2051
B200-20	4810	4372	4061	3823	3633	3476	3229	2985	2756	2576	2433
B250-20	5759	5234	4861	4575	4347	4159	3780	3446	3192	2978	2682
	CONTINUOUS DOUBLE SPAN										
B100-16	3329	2809	2442	2190	1978	1844	1568	1418	1264	1144	1062
B150-16	3927	3281	2842	2517	2293	2074	1804	1564	1365	1202	1076
B150-20	4626	3858	3343	2966	2693	2445	2096	1863	1615	1419	1268
B150-24	5309	4428	3826	3391	3060	2798	2391	2079	1787	1570	1401
B200-16	4382	3652	3155	2785	2494	2292	1916	1605	1383	1218	1089
B200-20	5109	4235	3659	3229	2892	2637	2160	1806	1555	1367	1222
B250-20	5869	4853	4176	3686	3303	3000	2412	2016	1734	1523	1360
	CONTINUOUS TRIPLE SPAN										
B100-16	3219	2927	2720	2437	2223	2024	1760	1547	1408	1266	1165
B150-16	4396	3676	3193	2819	2543	2327	1989	1752	1530	1341	1195
B150-20	4724	4294	3749	3328	3001	2751	2348	2061	1817	1592	1418
B150-24	5026	4568	4242	3806	3429	3146	2694	2348	2015	1765	1571
B200-16	4920	4092	3521	3121	2798	2547	2163	1805	1550	1359	1212
B200-20	5732	4753	4102	3629	3246	2951	2441	2036	1748	1532	1365
B250-20	6578	5453	4687	4134	3707	3369	2729	2276	1953	1712	1524



Perimeter bearers – standard load

Supporting standard residential floor loads & load bearing walls (single storey – sheet roof).

- Roof mass: 40kg/m²
- Wall weight: 0.45kPa at 2.7m height
- Live load: 1.5kPa
- Dead load: 0.75kPa
- Supports: L type pier head on inside

Table 5	MAXIMUM BEARER SPAN (mm)											
BOXSPAN SECTION	FLOOR LOAD WIDTH – FLW (mm)											
	900	1200	2100	3000	900	1200	2100	3000	900	1200	2100	3000
	ROOF LOAD WIDTH – RLW 2000 (mm)											
	SINGLE SPAN				CONTINUOUS DOUBLE SPAN				CONTINUOUS TRIPLE SPAN			
B100-16	1882	1812	1653	1540	2296	2056	1613	1375	2321	2233	1827	1500
B150-16	2568	2471	2249	2092	2650	2374	1850	1510	2967	2663	2052	1689
B150-20	2760	2655	2417	2247	3123	2799	2165	1790	3408	3146	2425	1996
B150-24	2935	2824	2570	2389	3572	3201	2461	1984	3626	3487	2767	2243
B200-16	3231	3108	2827	2470	2919	2610	1998	1530	3279	2927	2260	1724
B200-20	3470	3337	3035	2821	3390	3025	2253	1723	3810	3397	2551	1945
B250-20	4156	3996	3633	3373	3877	3454	2517	1924	4359	3883	2852	2174
	ROOF LOAD WIDTH – RLW 4500 (mm)											
	SINGLE SPAN				CONTINUOUS DOUBLE SPAN				CONTINUOUS TRIPLE SPAN			
B100-16	1719	1670	1552	1463	2004	1850	1490	1269	2121	2055	1660	1414
B150-16	2346	2278	2112	1987	2313	2102	1680	1373	2587	2358	1882	1545
B150-20	2522	2448	2269	2134	2726	2477	1980	1627	3052	2783	2229	1836
B150-24	2682	2603	2413	2270	3109	2830	2266	1803	3314	3184	2528	2037
B200-16	2952	2865	2655	2364	2534	2311	1765	1391	2847	2587	1995	1566
B200-20	3171	3077	2851	2680	2938	2673	1990	1567	3304	2999	2252	1767
B250-20	3798	3685	3413	3207	3356	3045	2223	1748	3775	3423	2518	1975
	ROOF LOAD WIDTH – RLW 6000 (mm)											
	SINGLE SPAN				CONTINUOUS DOUBLE SPAN				CONTINUOUS TRIPLE SPAN			
B100-16	1644	1603	1502	1424	1879	1734	1432	1217	2029	1935	1584	1379
B150-16	2244	2187	2044	1934	2147	1972	1598	1302	2409	2217	1810	1465
B150-20	2412	2350	2196	2077	2530	2331	1893	1543	2841	2610	2116	1741
B150-24	2566	2500	2336	2208	2888	2655	2143	1710	3170	2979	2409	1931
B200-16	2824	2751	2569	2308	2356	2158	1650	1320	2646	2423	1864	1485
B200-20	3034	2955	2759	2608	2732	2495	1860	1486	3065	2805	2104	1675
B250-20	3633	3538	3303	3121	3114	2795	2078	1658	3500	3171	2353	1872
	ROOF LOAD WIDTH – RLW 8000 (mm)											
	SINGLE SPAN				CONTINUOUS DOUBLE SPAN				CONTINUOUS TRIPLE SPAN			
B100-16	1562	1529	1444	1376	1729	1605	1361	1159	1927	1813	1497	1295
B150-16	2132	2085	1966	1870	1968	1833	1498	1219	2212	2046	1685	1370
B150-20	2292	2241	2112	2009	2325	2152	1778	1444	2607	2417	1991	1627
B150-24	2438	2384	2246	2136	2650	2450	1971	1599	2975	2757	2232	1806
B200-16	2683	2623	2470	2230	2153	1982	1518	1235	2420	2243	1715	1389
B200-20	2882	2818	2653	2523	2490	2236	1711	1390	2802	2536	1935	1566
B250.20	3452	3374	3177	3019	2788	2500	1911	1551	3165	2836	2164	1750

Perimeter bearers – standard load

Supporting standard residential floor loads & load bearing walls (single storey – tiled roof).

- Roof mass: 90kg/m²
- Wall weight: 0.45kPa at 2.7m height
- Live load: 1.5kPa
- Dead load: 0.75kPa
- Supports: L type pier head on inside

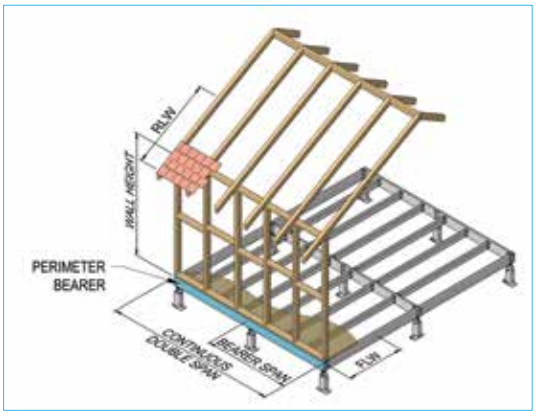
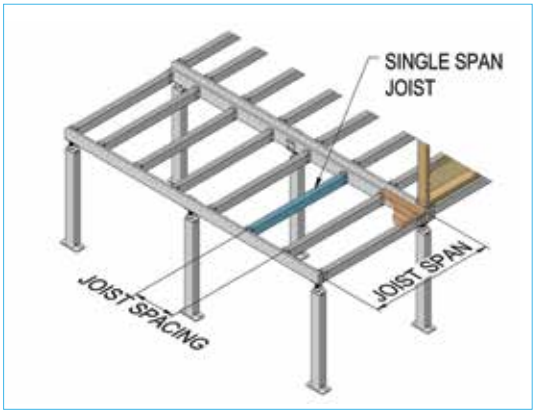


Table 6	MAXIMUM BEARER SPAN (mm)											
BOXSPAN SECTION	FLOOR LOAD WIDTH – FLW (mm)											
	900	1200	2100	3000	900	1200	2100	3000	900	1200	2100	3000
	ROOF LOAD WIDTH – RLW 2000 (mm)											
	SINGLE SPAN				CONTINUOUS DOUBLE SPAN				CONTINUOUS TRIPLE SPAN			
B100-16	1719	1670	1552	1463	2004	1850	1490	1269	2121	2055	1660	1414
B150-16	2346	2278	2112	1987	2313	2102	1680	1373	2587	2358	1882	1545
B150-20	2522	2448	2269	2134	2726	2477	1980	1627	3052	2783	2229	1836
B150-24	2682	2603	2413	2270	3109	2830	2266	1803	3314	3184	2528	2037
B200-16	2952	2865	2655	2364	2534	2311	1765	1391	2847	2587	1995	1566
B200-20	3171	3077	2851	2680	2938	2673	1990	1567	3304	2999	2252	1767
B250-20	3798	3685	3413	3207	3356	3045	2223	1748	3775	3423	2518	1975
	ROOF LOAD WIDTH – RLW 4500 (mm)											
	SINGLE SPAN				CONTINUOUS DOUBLE SPAN				CONTINUOUS TRIPLE SPAN			
B100-16	1490	1463	1391	1332	1595	1498	1273	1106	1799	1675	1420	1232
B150-16	2034	1995	1894	1811	1820	1692	1381	1142	2034	1898	1559	1282
B150-20	2187	2144	2035	1946	2138	1995	1639	1351	2402	2250	1853	1523
B150-24	2326	2281	2164	2069	2436	2278	1817	1497	2742	2553	2056	1689
B200-16	2560	2510	2379	2149	1963	1782	1400	1157	2226	2019	1580	1299
B200-20	2750	2696	2557	2443	2216	2011	1577	1301	2514	2280	1783	1465
B250-20	3294	3229	3061	2881	2478	2248	1761	1452	2812	2550	1993	1637
	ROOF LOAD WIDTH – RLW 6000 (mm)											
	SINGLE SPAN				CONTINUOUS DOUBLE SPAN				CONTINUOUS TRIPLE SPAN			
B100-16	1399	1377	1320	1272	1436	1365	1167	1038	1604	1517	1310	1149
B150-16	1910	1879	1799	1730	1613	1516	1229	1037	1820	1705	1386	1163
B150-20	2053	2020	1933	1859	1907	1800	1458	1227	2140	2015	1647	1382
B150-24	2184	2149	2055	1977	2168	1999	1616	1359	2438	2267	1828	1533
B200-16	2404	2365	2247	2039	1669	1537	1245	1050	1892	1741	1405	1178
B200-20	2582	2540	2429	2335	1884	1734	1403	1182	2137	1965	1585	1329
	ROOF LOAD WIDTH – RLW 8000 (mm)											
	SINGLE SPAN				CONTINUOUS DOUBLE SPAN				CONTINUOUS TRIPLE SPAN			
B100-16	1305	1289	1245	1207	1265	1204	1061	953	1419	1361	1183	1058
B150-16	1782	1759	1696	1642	1373	1282	1072	925	1555	1450	1207	1035
B150-20	1916	1891	1823	1764	1631	1522	1271	1093	1850	1725	1435	1230
B150-24	2038	2011	1939	1876	1810	1689	1408	1210	2054	1915	1592	1364
B200-16	2243	2214	2086	1920	1391	1299	1086	937	1576	1470	1224	1049
B200-20	2410	2378	2291	2216	1570	1465	1223	1053	1780	1660	1381	1183
B250.20	2886	2847	2714	2324	1755	1637	1366	1174	1991	1856	1543	1322

DECKS STANDARD LOAD



Joists – standard load

Supporting standard residential decks more than 1m above the ground.

- Live load: 2kPa
- Dead load: 0.75kPa
- End Supports: Framing bracket 4 hole
- Mid Supports: Top hat bracket

Table 7	MAXIMUM FLOOR JOIST SPAN (mm)								
BOXSPAN SECTION	FLOOR JOIST CENTRES (mm)								
	400	450	600	400	450	600	400	450	600
	SINGLE SPAN			CONTINUOUS DOUBLE SPAN			CONTINUOUS TRIPLE SPAN		
B100-12	2485	2365	2170	2693	2500	2242	2741	2536	2269
B100-16	2770	2626	2395	3020	2780	2474	3078	2822	2505
B150-16	3589	3347	3011	4338	4150	3570	4375	4227	3616
B150-20	3835	3550	3180	4653	4550	3862	4693	4642	3913
B150-24	4185	3850	3430	4815	4802	4034	4857	4844	4087
B200-16	4699	4290	3789	5475	5450	4637	5523	5497	4700
B200-20	5055	4687	4110	5863	5840	5018	5914	5891	5087
B250-20	5921	5750	4915	6885	6860	6060	6945	6920	6149

Joists – standard load

Supported by polypropylene Adjustable Pedestals.

Deck floor loads (above 1m FFL)**

- Live load: 2.0kPa
- Dead load: 0.75kPa

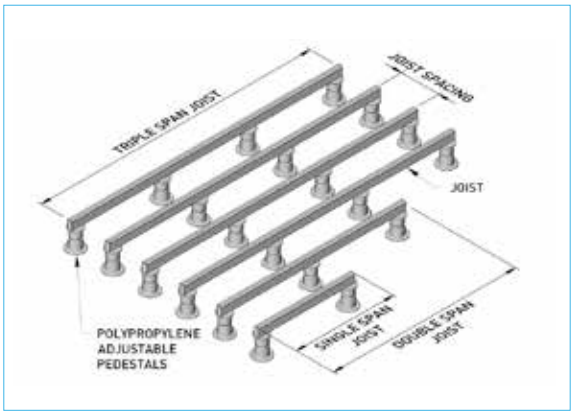


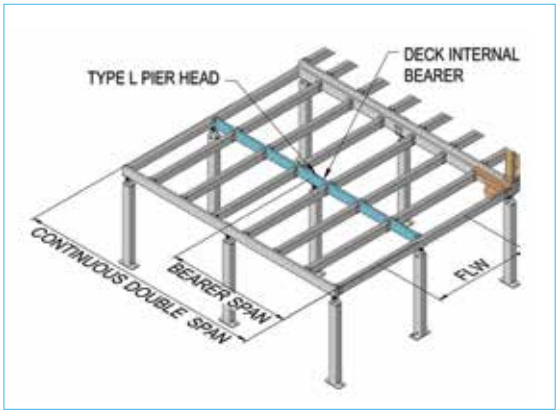
Table 8	MAXIMUM JOIST SPAN (mm) / SUPPORT COMPRESSION CAPACITY (kN)							
BOXSPAN SECTION	JOIST SPACING (MM)							
	360		400		450		600	
	Max Span	#Max Rb	Max Span	#Max Rb	Max Span	#Max Rb	Max Span	#Max Rb
	SINGLE SPAN							
B100-12	2632	3.1	2485	3.1	2365	3.2	2249	3.3
B100-16	2953	3.2	2770	3.2	2626	3.2	2488	3.4
B150-16	3822	3.3	3589	3.3	3347	3.4	3151	3.7
B150-20	4011	3.3	3835	3.4	3550	3.4	3335	3.9
B200-16	4709	3.5	4699	3.7	4290	3.8	3994	4.7
B200-20	5067	3.6	5055	3.9	4687	4.1	4342	5.1
B250-20	5936	4.2	5921	4.6	5750	5.0	5234	6.1
	CONTINUOUS DOUBLE SPAN							
B100-12	2858	5.0 3.2	2693	5.3 3.2	2500	5.5 3.2	2154	6.3 3.3
B100-16	3121	5.5 3.2	3020	5.9 3.2	2780	6.1 3.3	2599	7.6 3.4
B150-16	4356	7.6 3.4	4338	8.5 3.5	4077	8.9 3.5	3205	9.4 3.6
B150-20	4673	8.2 3.5	4653	9.1 3.5	4550	10.0 3.6	4119	12.0 3.8
B200-16	5438	9.5 3.6	5051	9.8 3.6	4645	10.2 3.6	3590	10.5 3.7
B200-20	5888	10.3 3.7	5863	11.4 3.8	5840	12.8 3.9	5182	15.2 4.5
B250-20	6912	12.1 3.8	6885	13.4 4.0	6528	14.3 4.3	5231	15.3 4.6
	CONTINUOUS TRIPLE SPAN							
B100-12	2882	4.5 3.2	2739	4.7 3.2	2536	4.9 3.2	2377	6.1 3.3
B100-16	3147	4.9 3.2	3076	5.3 3.3	2821	5.4 3.3	2632	6.8 3.4
B150-16	4393	6.8 3.4	4374	7.5 3.5	4225	8.2 3.6	3642	9.4 3.8
B150-20	4713	7.3 3.5	4693	8.1 3.5	4640	9.0 3.7	4178	10.8 4.4
B200-16	5550	8.6 3.6	5521	9.5 3.9	5230	10.1 4.1	4079	10.5 4.3
B200-20	5938	9.2 3.8	5912	10.1 4.2	5889	11.4 4.7	5518	14.2 5.8
B250-20	6970	10.8 4.4	6943	11.9 4.9	6917	13.4 5.5	5944	15.3 6.3

NOTES

#Max Rb: denotes maximum compression capacity of the polypropylene pedestal to attain the listed Boxspan spans, reactions loads in kN.

Refer to the polypropylene pedestal manufacturers technical specification for the products allowable compression capacity. Single span – one End reation value listed, Continuous span – first reaction value is the max. Internal reaction the second value is the End reaction. Boxspan requires minimum 50mm bearing length from the pedestal support.

DECKS STANDARD LOAD CONTINUED



Internal bearers – standard load

Supporting standard residential decks more than 1m above the ground.

- Live load: 2kPa
- Dead load: 0.75kPa
- End supports: Framing bracket into pier head
- Mid supports: L type pier head on Inside

Table 9	MAXIMUM BEARER SPAN (mm)										
BOXSPAN SECTION	FLOOR LOAD WIDTH – FLW (mm)										
	900	1200	1500	1800	2100	2400	3000	3600	4200	4800	5400
	SINGLE SPAN										
B100-16	2497	2273	2113	1992	1895	1815	1688	1592	1491	1413	1329
B150-16	3402	3094	2875	2708	2574	2423	2172	1966	1815	1696	1601
B150-20	3656	3324	3088	2908	2765	2646	2459	2317	2155	2002	1882
B150-24	3888	3535	3284	3092	2939	2813	2614	2463	2342	2242	2157
B200-16	4278	3889	3514	3226	2975	2775	2483	2280	2063	1808	1610
B200-20	4594	4177	3879	3652	3471	3292	2936	2673	2478	2326	2187
B250-20	5501	5000	4643	4371	4074	3799	3357	2802	2405	2108	1876
	CONTINUOUS DOUBLE SPAN										
B100-16	2828	2364	2039	1838	1633	1499	1298	1127	987	873	787
B150-16	3272	2718	2330	2039	1838	1614	1301	1095	950	840	759
B150-20	3946	3274	2821	2484	2251	2030	1664	1396	1205	1062	953
B150-24	4599	3808	3285	2897	2606	2373	1948	1631	1405	1237	1107
B200-16	3735	3083	2647	2333	2051	1799	1449	1217	1053	931	836
B200-20	4434	3666	3150	2771	2458	2155	1732	1451	1252	1104	989
B250-20	4842	3966	3348	2794	2399	2104	1691	1418	1224	1079	968
	CONTINUOUS TRIPLE SPAN										
B100-16	3076	2637	2297	2021	1843	1665	1429	1246	1092	960	856
B150-16	3668	3025	2595	2298	2045	1816	1457	1219	1048	922	824
B150-20	4424	3671	3175	2788	2500	2290	1874	1565	1345	1179	1052
B150-24	4801	4274	3684	3250	2918	2662	2199	1835	1576	1382	1232
B200-16	4187	3453	2959	2601	2316	2028	1626	1359	1168	1026	917
B200-20	4983	4110	3520	3100	2776	2435	1951	1629	1400	1228	1095
B250-20	5445	4458	3796	3165	2714	2377	1905	1590	1367	1199	1070

Perimeter bearers – standard load

Supporting standard residential decks more than 1m above the ground.

- Live load: 2kPa
- Dead load: 0.75kPa
- Supports: L type pier head on inside

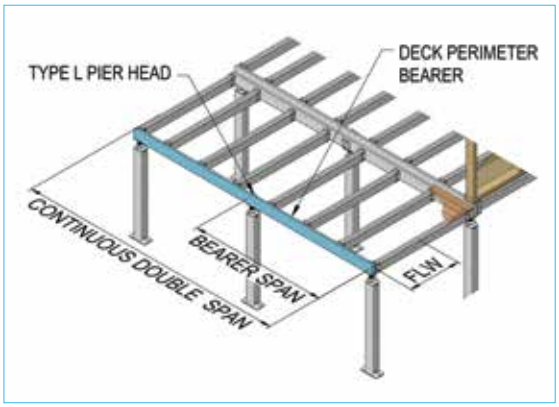
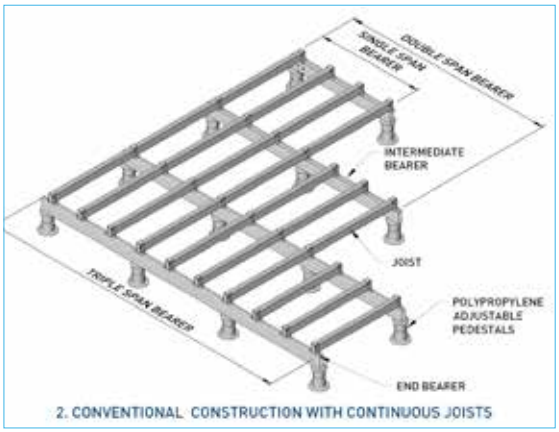


Table 10	MAXIMUM BEARER SPAN (mm)										
BOXSPAN SECTION	FLOOR LOAD WIDTH – FLW (mm)										
	900	1200	1500	1800	2100	2400	3000	3600	4200	4800	5400
	SINGLE SPAN										
B100-16	2497	2273	2113	1992	1895	1815	1688	1592	1491	1413	1329
B150-16	3402	3094	2875	2708	2574	2423	2172	1966	1815	1696	1601
B150-20	3656	3324	3088	2908	2765	2646	2459	2317	2155	2002	1882
B150-24	3888	3535	3284	3092	2939	2813	2614	2463	2342	2242	2157
B200-16	4278	3889	3514	3226	2975	2775	2483	2280	2093	1951	1837
B200-20	4594	4177	3879	3652	3471	3292	2936	2673	2478	2326	2187
B250-20	5501	5000	4643	4371	4074	3799	3392	3095	2784	2439	2171
	CONTINUOUS DOUBLE SPAN										
B100-16	2927	2456	2140	1914	1735	1578	1397	1206	1086	1008	909
B150-16	3433	2858	2465	2192	1967	1818	1531	1289	1114	984	883
B150-20	4058	3364	2905	2573	2328	2111	1820	1524	1314	1158	1037
B150-24	4641	3850	3322	2934	2647	2406	2016	1687	1453	1278	1144
B200-16	3818	3175	2733	2398	2151	1934	1557	1306	1129	997	894
B200-20	4453	3680	3167	2783	2483	2180	1752	1468	1266	1116	1000
B250-20	5097	4202	3613	3177	2778	2435	1955	1636	1410	1241	1110
	CONTINUOUS TRIPLE SPAN										
B100-16	3076	2757	2387	2125	1920	1783	1519	1376	1199	1091	999
B150-16	3848	3208	2768	2443	2203	2002	1705	1443	1241	1089	972
B150-20	4513	3774	3257	2883	2592	2362	2016	1713	1471	1290	1149
B150-24	4801	4321	3726	3293	2959	2715	2276	1900	1631	1430	1274
B200-16	4283	3547	3045	2705	2407	2183	1750	1462	1257	1103	984
B200-20	4998	4124	3539	3120	2788	2464	1974	1648	1416	1243	1107
B250-20	5722	4717	4058	3559	3146	2755	2207	1842	1581	1387	1236

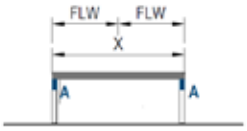
Deck floor loads (above 1m FFL)

Supported by polypropylene Adjustable Pedestals.

- Live load: 2.0kPa
- Dead load: 0.75kPa

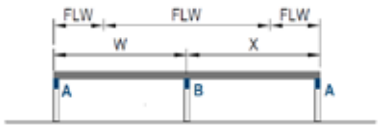


2. CONVENTIONAL CONSTRUCTION WITH CONTINUOUS JOISTS



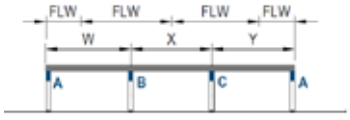
1-1 FLOOR LOAD WIDTH FOR CONVENTIONAL SYSTEM (JOISTS IN SINGLE SPAN)

BEARER A: FLW = X/2



1-2 FLOOR LOAD WIDTH FOR CONVENTIONAL SYSTEM (JOISTS IN CONTINUOUS DOUBLE SPAN - OVER INTERNAL BEARER)

BEARER A: FLW = 0.375 W
BEARER B: FLW = 1.25(W + X) / 2



1-3 FLOOR LOAD WIDTH FOR CONVENTIONAL SYSTEM (JOISTS IN CONTINUOUS TRIPLE SPAN - OVER INTERNAL BEARER)

BEARER A: FLW = 0.4 W
BEARER B: FLW = 1.1 (W + X) / 2
BEARER C: FLW = 1.1 (X + Y) / 2

Table 11	MAXIMUM JOIST SPAN (mm) / SUPPORT COMPRESSION CAPACITY (kN)													
BOXSPAN SECTION	FLOOR LOAD WIDTH FLW (mm)													
	900		1200		1500		1800		2100		2400		2700	
	Max Span	#Max Rb	Max Span	#Max Rb	Max Span	#Max Rb	Max Span	#Max Rb	Max Span	#Max Rb	Max Span	#Max Rb	Max Span	#Max Rb
	SINGLE SPAN													
B100-16	2709	4.8	2462	5.8	2285	6.7	2150	7.5	2043	8.4	1933	9.0	1822	9.6
B150-16	3693	6.5	3384	7.9	3045	8.9	2780	9.8	2573	10.5	2407	11.3	2270	11.9
B150-20	3904	6.9	3633	8.5	3383	9.9	3184	11.2	3020	12.4	2825	13.2	2664	14.0
B200-16	4383	7.7	3929	9.2	3514	10.3	3208	11.3	2970	12.2	2778	13.0	2619	13.8
B200-20	4634	8.1	4313	10.1	4079	11.9	3788	13.3	3507	14.4	3280	15.4	3093	16.3
B250-20	5307	9.3	4939	11.6	4671	13.7	4391	15.4	3993	16.4	3494	16.4	3105	16.4
	CONTINUOUS DOUBLE SPAN													
B100-16	2265	9.9 | 3.6	1731	10.1 | 3.6	1385	10.1 | 3.6	1154	10.1 | 3.6	989	10.1 | 3.6	865	10.1 | 3.6	769	10.1 | 3.6
B150-16	2137	9.4 | 3.6	1603	9.4 | 3.6	1282	9.4 | 3.6	1068	9.4 | 3.6	916	9.4 | 3.6	801	9.4 | 3.6	712	9.4 | 3.6
B150-20	3509	15.4 | 4.6	2863	16.7 | 5	2328	17 | 5.1	1940	17 | 5.1	1663	17 | 5.1	1455	17 | 5.1	1293	17 | 5.1
B200-16	2393	10.5 | 3.7	1795	10.5 | 3.7	1436	10.5 | 3.7	1197	10.5 | 3.7	1026	10.5 | 3.7	897	10.5 | 3.7	798	10.5 | 3.7
B200-20	3908	17.1 | 5.1	3051	17.9 | 5.4	2441	17.9 | 5.4	2034	17.9 | 5.4	1744	17.9 | 5.4	1526	17.9 | 5.4	1356	17.9 | 5.4
B250-20	3487	15.3 | 4.6	2615	15.3 | 4.6	2092	15.3 | 4.6	1744	15.3 | 4.6	1495	15.3 | 4.6	1308	15.3 | 4.6	1162	15.3 | 4.6
	CONTINUOUS TRIPLE SPAN													
B100-16	2550	9.8 | 4	1967	10.1 | 4.1	1573	10.1 | 4.1	1311	10.1 | 4.1	1124	10.1 | 4.1	983	10.1 | 4.1	874	10.1 | 4.1
B150-16	2428	9.4 | 3.8	1821	9.4 | 3.8	1457	9.4 | 3.8	1214	9.4 | 3.8	1041	9.4 | 3.8	911	9.4 | 3.8	809	9.4 | 3.8
B150-20	3948	15.2 | 6.2	3224	16.6 | 6.8	2646	17 | 7	2205	17 | 7	1890	17 | 7	1654	17 | 7	1470	17 | 7
B200-16	2720	10.5 | 4.3	2040	10.5 | 4.3	1632	10.5 | 4.3	1360	10.5 | 4.3	1166	10.5 | 4.3	1020	10.5 | 4.3	907	10.5 | 4.3
B200-20	4400	17 | 6.9	3467	17.9 | 7.3	2774	17.9 | 7.3	2312	17.9 | 7.3	1981	17.9v7.3	1734	17.9 | 7.3	1541	17.9 | 7.3
B250-20	3963	15.3 | 6.3	2972	15.3 | 6.3	2378	15.3 | 6.3	1981	15.3 | 6.3	1698	15.3 | 6.3	1486	15.3 | 6.3	1321	15.3 | 6.3

NOTES

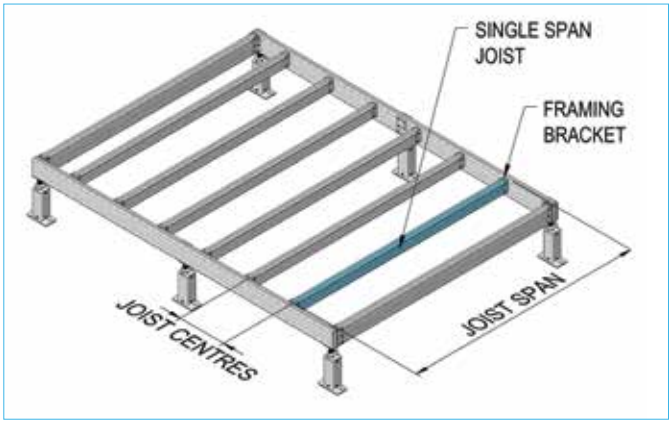
#Max Rb: denotes maximum compression capacity of the polypropylene pedestal to attain the listed Boxspan spans, reactions loads in kN.Refer to the polypropylene pedestal manufacturers technical specification for the products allowable compression capacity. Single span – one End reation value listed, Continuous span – first reaction value is the max. Internal reaction the second value is the End reaction. Boxspan requires minimum 50mm bearing length from the pedestal support.

FLOORS HEAVIER LOAD

Joists – heavier load

Supporting heavier residential floor loads only (or decks less than 1m above the ground).

- Live load: 1.5kPa
- Dead load: 1.1kPa
- End supports: Framing bracket 4 hole
- Mid supports: Top hat bracket



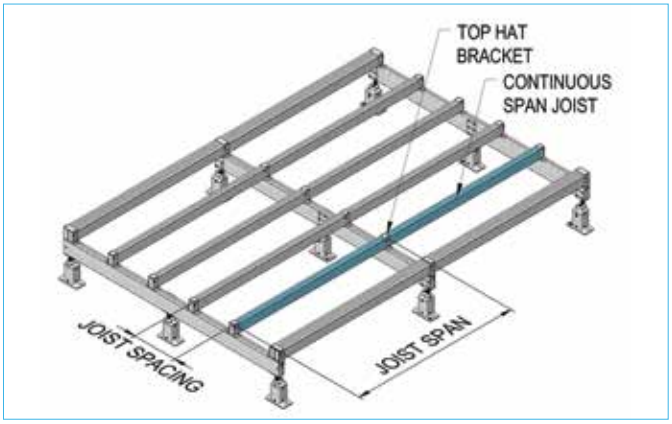


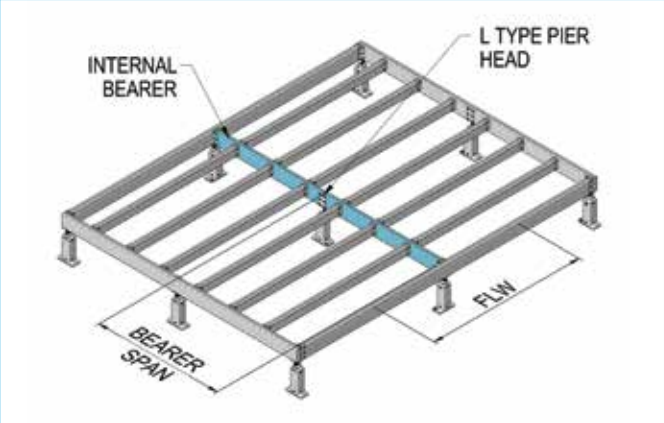
Table 12	MAXIMUM FLOOR JOIST SPAN (mm)								
BOXSPAN SECTION	FLOOR JOIST CENTRES (mm)								
	400	450	600	400	450	600	400	450	600
	SINGLE SPAN			CONTINUOUS DOUBLE SPAN			CONTINUOUS TRIPLE SPAN		
B100-12	2852	2630	2303	2841	2832	2423	2865	2856	2456
B100-16	3133	2949	2551	3107	3099	2687	3134	3126	2725
B150-16	3815	3811	3248	4338	4319	3962	4375	4357	4026
B150-20	4003	3994	3443	4653	4636	4317	4693	4676	4390
B150-24	4292	4283	3726	4815	4802	4541	4857	4844	4621
B200-16	4699	4685	4140	5475	5450	4532	5523	5497	5097
B200-20	5055	5042	4513	5863	5840	5799	5914	5891	5873
B250-20	5921	5906	5479	6885	6860	6345	6945	6920	6894

Spans in above table are governed by dynamic performance.

Internal bearers – heavier load

Supporting heavier residential floor loads only (or decks less than 1m above the ground).

- Live load: 1.5kpa
- Dead load: 1.1kpa
- End supports: Framing bracket into pier head
- Mid supports: L type pier head on inside



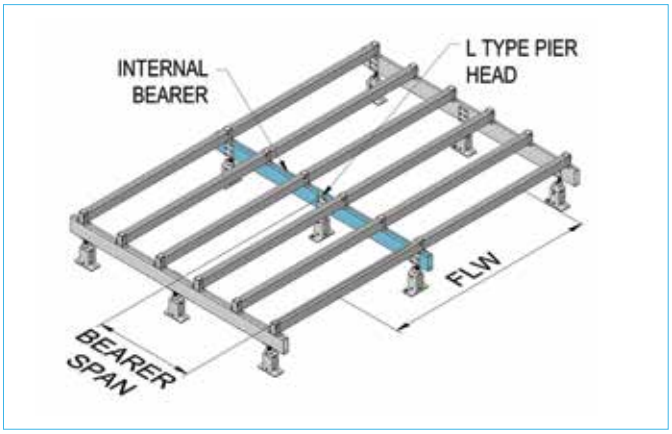


Table 13	MAXIMUM BEARER SPAN (mm)										
BOXSPAN SECTION	FLOOR LOAD WIDTH – FLW (mm)										
	900	1200	1500	1800	2100	2400	3000	3600	4200	4800	5400
	SINGLE SPAN										
B100-16	2422	2205	2051	1933	1839	1761	1639	1547	1474	1414	1361
B150-16	3300	3001	2789	2627	2497	2391	2222	2061	1900	1772	1671
B150-20	3546	3224	2996	2821	2682	2567	2386	2248	2138	2047	1970
B150-24	3771	3429	3186	3000	2851	2729	2536	2389	2272	2175	2093
B200-16	4149	3772	3504	3299	3120	2905	2593	2376	2198	1973	1757
B200-20	4456	4051	3762	3542	3366	3221	2993	2797	2587	2425	2295
B250-20	5335	4849	4503	4239	4028	3854	3547	3059	2625	2300	2047
	CONTINUOUS DOUBLE SPAN										
B100-16	2980	2490	2167	1927	1747	1583	1395	1201	1071	947	850
B150-16	3461	2865	2462	2178	1952	1759	1417	1191	1030	911	819
B150-20	4177	3466	2988	2650	2380	2168	1814	1519	1310	1155	1034
B150-24	4863	4049	3484	3084	2779	2520	2125	1777	1530	1345	1203
B200-16	3958	3272	2813	2470	2229	1962	1578	1324	1144	1010	906
B200-20	4694	3880	3334	2936	2639	2351	1888	1581	1363	1200	1074
B250-20	5141	4218	3613	3050	2618	2295	1844	1544	1331	1173	1050
	CONTINUOUS TRIPLE SPAN										
B100-16	2983	2713	2419	2142	1932	1799	1518	1372	1190	1045	934
B150-16	3881	3216	2766	2433	2181	1982	1589	1328	1142	1004	895
B150-20	4376	3886	3352	2960	2672	2425	2045	1708	1467	1287	1146
B150-24	4655	4232	3908	3454	3111	2826	2401	2003	1720	1508	1342
B200-16	4439	3670	3167	2775	2482	2214	1775	1483	1275	1118	998
B200-20	5269	4357	3743	3296	2954	2659	2130	1778	1527	1339	1193
B250-20	5776	4739	4061	3457	2964	2595	2079	1736	1491	1307	1164

Perimeter bearers – heavier load

Supporting heavier residential floor loads only (or decks less than 1m above the ground).

- Live load: 1.5kPa
- Dead load: 1.1kPa
- Supports: L type pier head on inside

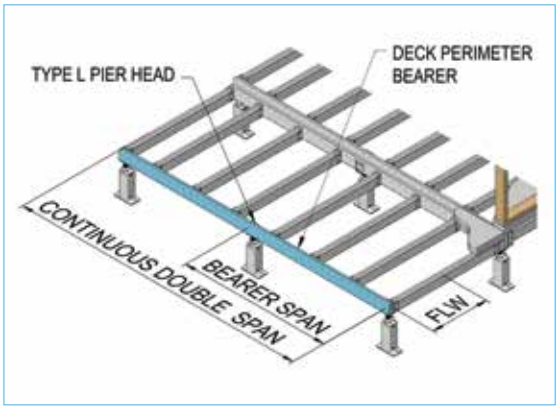


Table 14	MAXIMUM BEARER SPAN (mm)										
BOXSPAN SECTION	FLOOR LOAD WIDTH – FLW (mm)										
	900	1200	1500	1800	2100	2400	3000	3600	4200	4800	5400
	SINGLE SPAN										
B100-16	2422	2205	2051	1933	1839	1761	1639	1547	1474	1414	1361
B150-16	3300	3001	2789	2627	2497	2391	2222	2061	1900	1772	1671
B150-20	3546	3224	2996	2821	2682	2567	2386	2248	2138	2047	1970
B150-24	3771	3429	3186	3000	2851	2729	2536	2389	2272	2175	2093
B200-16	4149	3772	3504	3299	3120	2905	2593	2376	2198	2043	1922
B200-20	4456	4051	3762	3542	3366	3221	2993	2797	2587	2425	2295
B250-20	5335	4849	4503	4239	4028	3854	3547	3238	2990	2662	2369
	CONTINUOUS DOUBLE SPAN										
B100-16	3097	2597	2283	2013	1852	1676	1460	1296	1151	1057	986
B150-16	3646	3025	2621	2330	2086	1914	1628	1404	1212	1068	958
B150-20	4275	3572	3088	2747	2459	2267	1927	1661	1431	1259	1126
B150-24	4912	4093	3528	3129	2812	2557	2192	1839	1583	1391	1243
B200-16	4057	3350	2885	2546	2304	2079	1696	1422	1227	1082	970
B200-20	4711	3896	3349	2950	2655	2378	1910	1599	1378	1214	1086
B250-20	5411	4467	3827	3368	3019	2657	2132	1783	1535	1350	1207
	CONTINUOUS TRIPLE SPAN										
B100-16	2983	2713	2521	2277	2035	1873	1606	1427	1275	1159	1072
B150-16	4072	3388	2928	2592	2337	2129	1839	1574	1353	1186	1059
B150-20	4376	3978	3455	3059	2763	2512	2147	1869	1605	1408	1254
B150-24	4655	4232	3930	3497	3166	2870	2447	2073	1780	1560	1390
B200-16	4545	3760	3237	2855	2563	2332	1910	1595	1371	1202	1073
B200-20	5287	4374	3761	3314	2969	2691	2155	1799	1545	1355	1207
B250-20	6064	5013	4300	3786	3389	3008	2409	2010	1726	1513	1347

Perimeter bearers – heavier load

Supporting heavier residential floor loads and load bearing walls (single storey – sheet roof).

- Roof mass: 40kg/m²
- Wall weight: 0.45kPa at 2.7m height
- Live load: 1.5kPa
- Dead load: 1.1kPa
- Supports: L type pier on inside

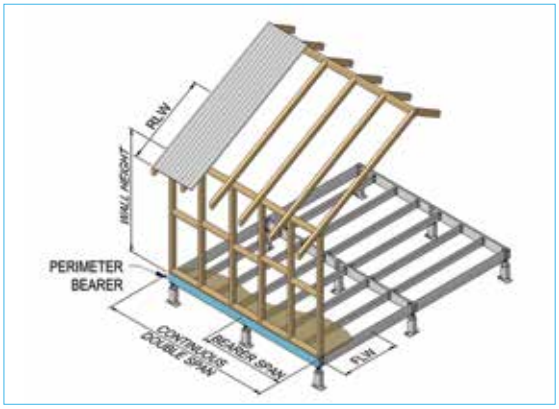


Table 15	MAXIMUM BEARER SPAN (mm)											
BOXSPAN SECTION	FLOOR LOAD WIDTH – FLW (mm)											
	900	1200	2100	3000	900	1200	2100	3000	900	1200	2100	3000
	ROOF LOAD WIDTH – RLW 2000 (mm)											
	SINGLE SPAN				CONTINUOUS DOUBLE SPAN				CONTINUOUS TRIPLE SPAN			
B100-16	1827	1749	1581	1465	2192	1960	1520	1267	2251	2155	1693	1411
B150-16	2491	2384	2148	1987	2526	2264	1723	1370	2834	2521	1921	1539
B150-20	2677	2562	2308	2133	2977	2657	2024	1622	3305	2974	2284	1829
B150-24	2847	2725	2454	2268	3405	3028	2316	1797	3516	3363	2586	2029
B200-16	3133	2998	2697	2357	2790	2469	1823	1388	3135	2775	2060	1560
B200-20	3365	3219	2898	2676	3237	2864	2055	1562	3639	3219	2325	1760
B250-20	4030	3854	3468	3202	3698	3271	2296	1743	4153	3676	2600	1967
	ROOF LOAD WIDTH – RLW 4500 (mm)											
	SINGLE SPAN				CONTINUOUS DOUBLE SPAN				CONTINUOUS TRIPLE SPAN			
B100-16	1680	1625	1495	1402	1936	1770	1423	1184	2072	1971	1569	1345
B150-16	2292	2214	2033	1901	2226	2008	1582	1257	2489	2267	1786	1411
B150-20	2463	2380	2184	2041	2618	2372	1877	1488	2937	2663	2092	1676
B150-24	2620	2531	2322	2170	2987	2712	2114	1648	3236	3035	2382	1859
B200-16	2884	2785	2551	2263	2436	2204	1628	1273	2742	2469	1838	1430
B200-20	3097	2991	2742	2561	2825	2545	1835	1433	3180	2861	2074	1613
B250-20	3709	3581	3282	3064	3227	2872	2049	1598	3630	3258	2319	1802
	ROOF LOAD WIDTH – RLW 6000 (mm)											
	SINGLE SPAN				CONTINUOUS DOUBLE SPAN				CONTINUOUS TRIPLE SPAN			
B100-16	1612	1565	1452	1367	1825	1662	1372	1143	1988	1865	1504	1273
B150-16	2199	2133	1974	1856	2071	1897	1510	1198	2327	2121	1692	1344
B150-20	2363	2292	2121	1993	2443	2238	1791	1418	2748	2503	2000	1596
B150-24	2514	2438	2255	2118	2792	2542	1986	1570	3105	2856	2247	1771
B200-16	2767	2682	2476	2202	2277	2065	1530	1214	2550	2322	1727	1362
B200-20	2971	2881	2663	2501	2631	2355	1724	1365	2955	2670	1949	1536
B250-20	3558	3449	3188	2992	2998	2633	1925	1522	3373	2986	2179	1717
	ROOF LOAD WIDTH – RLW 8000 (mm)											
	SINGLE SPAN				CONTINUOUS DOUBLE SPAN				CONTINUOUS TRIPLE SPAN			
B100-16	1536	1497	1402	1327	1676	1549	1286	1096	1879	1736	1429	1220
B150-16	2095	2040	1906	1801	1910	1762	1398	1127	2140	1971	1576	1264
B150-20	2252	2193	2047	1935	2257	2070	1658	1334	2526	2327	1874	1501
B150-24	2395	2332	2177	2057	2564	2362	1838	1477	2883	2653	2079	1665
B200-16	2636	2566	2390	2129	2083	1879	1416	1142	2342	2128	1597	1281
B200-20	2831	2756	2571	2428	2384	2120	1596	1284	2704	2403	1803	1444
B250.20	3391	3300	3077	2840	2665	2370	1782	1432	3024	2687	2015	1614

Perimeter bearers – heavier load

Supporting standard residential floor loads and load bearing walls (single storey – tiled roof).

- Roof mass: 90kg/m²
- Wall weight: 0.45kPa at 2.7m max height
- Live load: 1.5kPa
- Dead load: 1.1kPa
- End supports: L Pier on inside

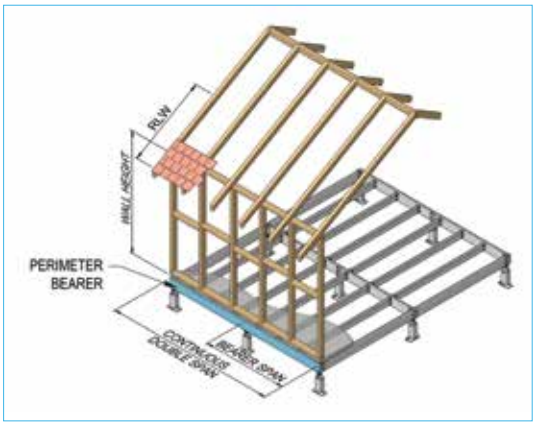
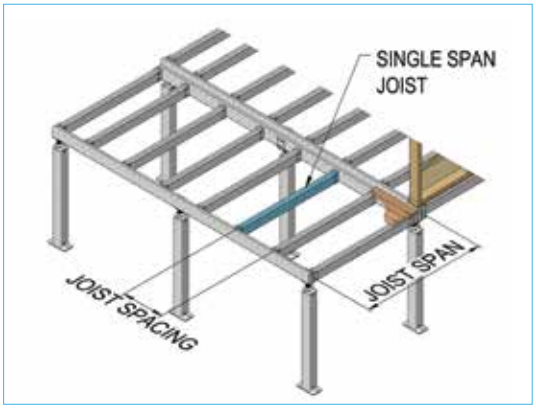


Table 16	MAXIMUM BEARER SPAN (mm)											
BOXSPAN SECTION	FLOOR LOAD WIDTH – FLW (mm)											
	900	1200	2100	3000	900	1200	2100	3000	900	1200	2100	3000
	ROOF LOAD WIDTH – RLW 2000 (mm)											
	SINGLE SPAN				CONTINUOUS DOUBLE SPAN				CONTINUOUS TRIPLE SPAN			
B100-16	1680	1625	1495	1402	1936	1770	1423	1184	2072	1971	1569	1345
B150-16	2292	2214	2033	1901	2226	2008	1582	1257	2489	2267	1786	1411
B150-20	2463	2380	2184	2041	2618	2372	1877	1488	2937	2663	2092	1676
B150-24	2620	2531	2322	2170	2987	2712	2114	1648	3236	3035	2382	1859
B200-16	2884	2785	2551	2263	2436	2204	1628	1273	2742	2469	1838	1430
B200-20	3097	2991	2742	2561	2825	2545	1835	1433	3180	2861	2074	1613
B250-20	3709	3581	3282	3064	3227	2872	2049	1598	3630	3258	2319	1802
	ROOF LOAD WIDTH – RLW 4500 (mm)											
	SINGLE SPAN				CONTINUOUS DOUBLE SPAN				CONTINUOUS TRIPLE SPAN			
B100-16	1469	1436	1354	1289	1553	1454	1212	1054	1743	1621	1374	1166
B150-16	2004	1958	1842	1750	1766	1633	1296	1061	1978	1841	1460	1188
B150-20	2153	2104	1979	1880	2077	1930	1536	1255	2335	2164	1736	1412
B150-24	2291	2238	2104	1999	2369	2197	1703	1389	2663	2465	1926	1565
B200-16	2521	2462	2310	2060	1886	1699	1313	1075	2139	1924	1480	1205
B200-20	2708	2644	2486	2360	2129	1917	1479	1209	2415	2172	1670	1358
B250-20	3243	3167	2975	2669	2380	2142	1651	1347	2701	2429	1867	1518
	ROOF LOAD WIDTH – RLW 6000 (mm)											
	SINGLE SPAN				CONTINUOUS DOUBLE SPAN				CONTINUOUS TRIPLE SPAN			
B100-16	1382	1356	1290	1236	1407	1323	1120	997	1567	1471	1250	1094
B150-16	1886	1850	1756	1680	1574	1455	1162	971	1772	1647	1308	1086
B150-20	2027	1988	1887	1804	1863	1729	1377	1148	2088	1955	1554	1289
B150-24	2156	2114	2006	1918	2100	1918	1525	1270	2377	2174	1724	1430
B200-16	2373	2327	2177	1965	1613	1475	1177	984	1828	1669	1325	1101
B200-20	2549	2499	2370	2265	1821	1664	1325	1105	2064	1885	1495	1241
B250-20	3053	2992	2837	2437	2035	1859	1479	1232	2309	2107	1672	1387
	ROOF LOAD WIDTH – RLW 8000 (mm)											
	SINGLE SPAN				CONTINUOUS DOUBLE SPAN				CONTINUOUS TRIPLE SPAN			
B100-16	1292	1273	1221	1178	1239	1174	1027	898	1394	1321	1140	1004
B150-16	1764	1736	1663	1601	1335	1238	1021	872	1512	1400	1147	974
B150-20	1896	1866	1786	1719	1586	1470	1209	1030	1798	1665	1364	1156
B150-24	2017	1985	1900	1828	1760	1631	1340	1140	1996	1848	1513	1282
B200-16	2220	2184	2029	1860	1353	1255	1034	883	1532	1419	1163	987
B200-20	2384	2346	2244	2159	1526	1415	1164	993	1730	1602	1312	1113
B250.20	2856	2810	2579	2184	1706	1581	1299	1106	1934	1791	1467	1243

DECKS HEAVIER LOAD



Joists – heavier load

Supporting heavier residential decks more than 1m above the ground.

- Live load: 2kPa
- Dead load: 1.1kPa
- End supports: Framing bracket 4 hole
- Mid supports: Top hat bracket

Table 17	MAXIMUM FLOOR JOIST SPAN (mm)								
BOXSPAN SECTION	FLOOR JOIST CENTRES (mm)								
	400	450	600	400	450	600	400	450	600
	SINGLE SPAN			CONTINUOUS DOUBLE SPAN			CONTINUOUS TRIPLE SPAN		
B100-12	2767	2630	2303	2841	2755	2269	2865	2856	2456
B100-16	3032	2915	2551	3107	3099	2687	3134	3126	2725
B150-16	3815	3811	3248	4338	4239	3482	4375	4357	3918
B150-20	4003	3994	3443	4653	4636	4317	4693	4676	4390
B150-24	4292	4283	3726	4815	4802	4541	4857	4844	4621
B200-16	4699	4685	4140	5240	4841	3972	5523	5444	4469
B200-20	5055	5042	4513	5863	5840	5314	5914	5891	5873
B250-20	5921	5906	5479	6885	6771	5571	6945	6920	6267

Internal bearers – heavier load

Supporting heavier residential decks more than 1m above the ground.

- Live load: 2kPa
- Dead load: 1.1kPa
- End supports: Framing bracket into pier head
- Mid supports: L type pier head on inside

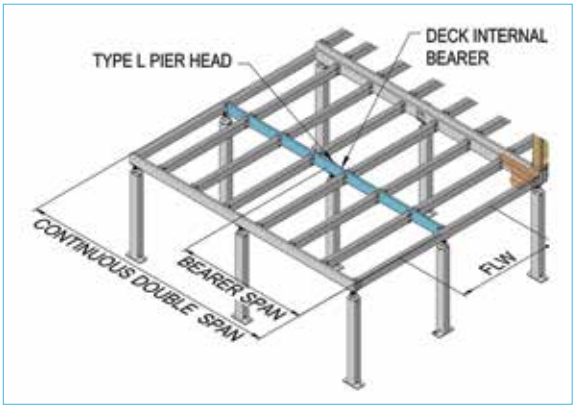


Table 18	MAXIMUM BEARER SPAN (mm)										
BOXSPAN SECTION	FLOOR LOAD WIDTH – FLW (mm)										
	900	1200	1500	1800	2100	2400	3000	3600	4200	4800	5400
	SINGLE SPAN										
B100-16	2336	2126	1978	1865	1774	1699	1582	1494	1424	1342	1246
B150-16	3181	2893	2689	2533	2408	2306	2052	1864	1722	1613	1525
B150-20	3418	3108	2888	2720	2586	2475	2301	2168	2036	1897	1786
B150-24	3635	3305	3071	2892	2749	2631	2445	2304	2191	2097	2019
B200-16	3999	3636	3347	3059	2820	2635	2366	2153	1865	1635	1456
B200-20	4294	3904	3626	3414	3245	3105	2785	2541	2360	2206	2068
B250-20	5141	4673	4340	4085	3860	3607	3033	2532	2174	1905	1696
	CONTINUOUS DOUBLE SPAN										
B100-16	2660	2222	1918	1696	1527	1418	1193	1035	898	797	721
B150-16	3058	2517	2164	1908	1663	1462	1182	996	864	769	696
B150-20	3699	3058	2633	2328	2076	1872	1507	1265	1094	967	867
B150-24	4299	3568	3064	2717	2422	2193	1763	1477	1274	1123	1006
B200-16	3489	2871	2456	2158	1855	1629	1313	1105	958	848	765
B200-20	4146	3408	2919	2565	2222	1949	1568	1315	1137	1003	900
B250-20	4523	3691	3025	2525	2169	1903	1531	1285	1111	981	880
	CONTINUOUS TRIPLE SPAN										
B100-16	2876	2467	2131	1889	1697	1549	1364	1148	989	869	779
B150-16	3424	2821	2420	2124	1873	1641	1317	1103	950	835	745
B150-20	4142	3425	2943	2593	2329	2112	1694	1415	1217	1069	954
B150-24	4487	3996	3434	3027	2731	2466	1987	1659	1425	1250	1114
B200-16	3914	3223	2762	2420	2092	1833	1471	1230	1059	931	831
B200-20	4648	3827	3276	2879	2512	2200	1763	1473	1266	1111	991
B250-20	5070	4143	3428	2858	2452	2147	1721	1438	1237	1086	969

Perimeter bearers – heavier load

Supporting heavier residential decks more than 1m above the ground.

- Live load: 2kPa
- Dead load: 1.1kPa
- End supports: L type pier head on inside

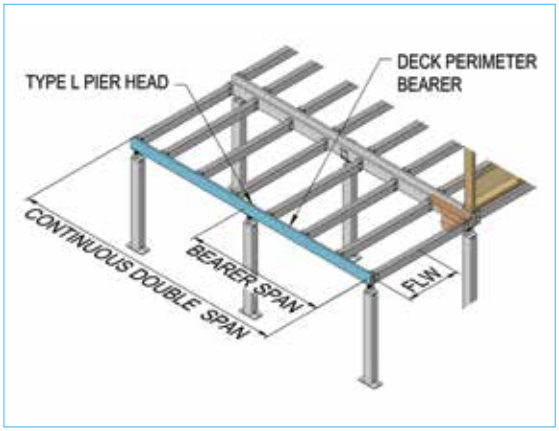
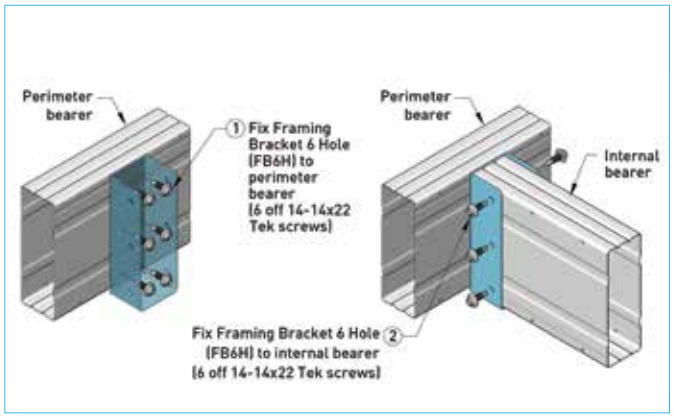
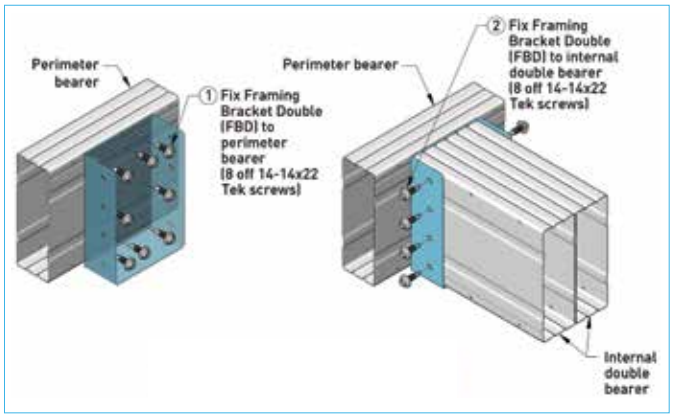


Table 19	MAXIMUM BEARER SPAN (mm)										
BOXSPAN SECTION	FLOOR LOAD WIDTH – FLW (mm)										
	900	1200	1500	1800	2100	2400	3000	3600	4200	4800	5400
	SINGLE SPAN										
B100-16	2336	2126	1978	1865	1774	1699	1582	1494	1424	1342	1246
B150-16	3181	2893	2689	2533	2408	2306	2052	1864	1722	1613	1482
B150-20	3418	3108	2888	2720	2586	2475	2301	2168	2036	1897	1786
B150-24	3635	3305	3071	2892	2749	2631	2445	2304	2191	2097	2019
B200-16	3999	3636	3347	3059	2820	2635	2366	2153	1983	1852	1733
B200-20	4294	3904	3626	3414	3245	3105	2785	2541	2360	2206	2068
B250-20	5141	4673	4340	4085	3860	3607	3225	2931	2515	2204	1962
	CONTINUOUS DOUBLE SPAN										
B100-16	2768	2323	2002	1815	1610	1485	1287	1122	1025	922	828
B150-16	3229	2687	2319	2034	1853	1668	1392	1171	1013	896	806
B150-20	3790	3165	2732	2402	2162	1967	1647	1381	1193	1052	944
B150-24	4344	3616	3109	2751	2456	2253	1824	1527	1317	1161	1039
B200-16	3583	2948	2530	2246	1995	1750	1410	1186	1026	907	816
B200-20	4161	3423	2933	2580	2248	1972	1586	1331	1150	1015	911
B250-20	4760	3915	3349	2924	2511	2201	1769	1482	1278	1127	1009
	CONTINUOUS TRIPLE SPAN										
B100-16	2876	2577	2268	1990	1828	1643	1421	1241	1114	1008	907
B150-16	3625	2993	2579	2293	2045	1869	1561	1305	1122	986	879
B150-20	4218	3529	3041	2712	2418	2205	1854	1548	1330	1167	1041
B150-24	4487	4056	3478	3068	2762	2504	2056	1717	1475	1293	1152
B200-16	4013	3309	2837	2496	2252	1973	1582	1322	1136	999	891
B200-20	4668	3843	3293	2894	2542	2226	1784	1490	1281	1124	1003
B250-20	5349	4397	3764	3302	2842	2488	1994	1665	1430	1255	1118

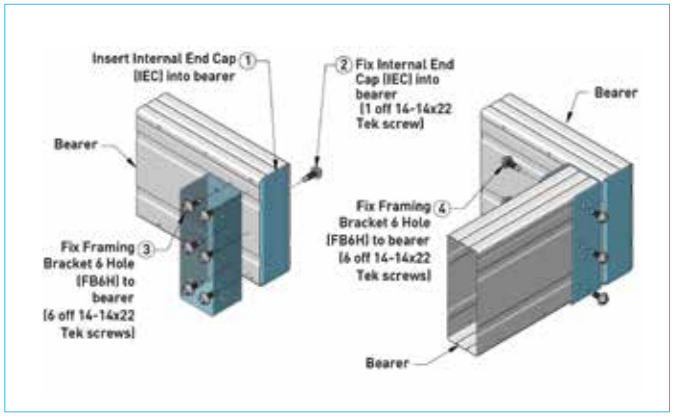
COMMON CONNECTIONS FLOOR FRAMES



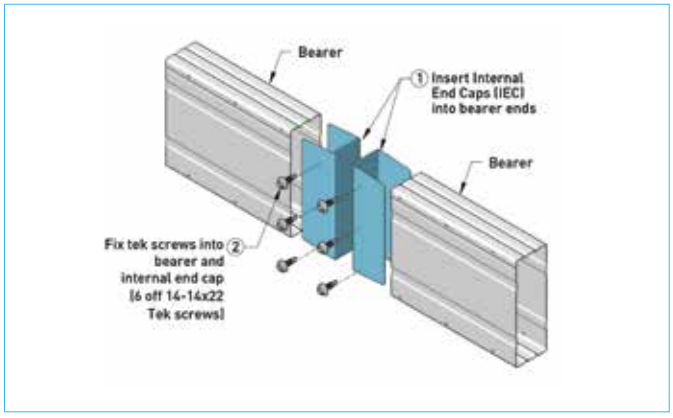
Internal bearer to perimeter bearer connection



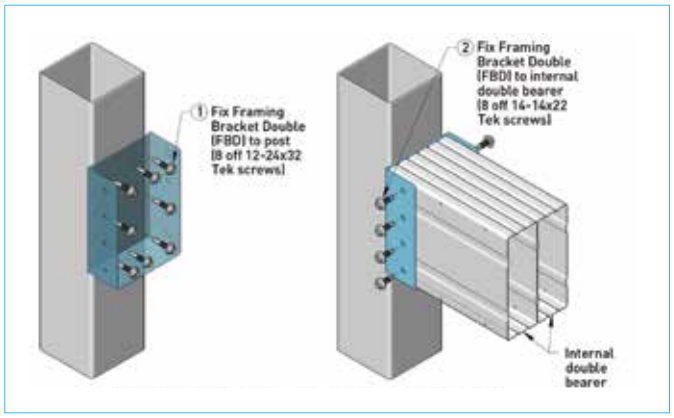
Internal double bearer to perimeter bearer connection



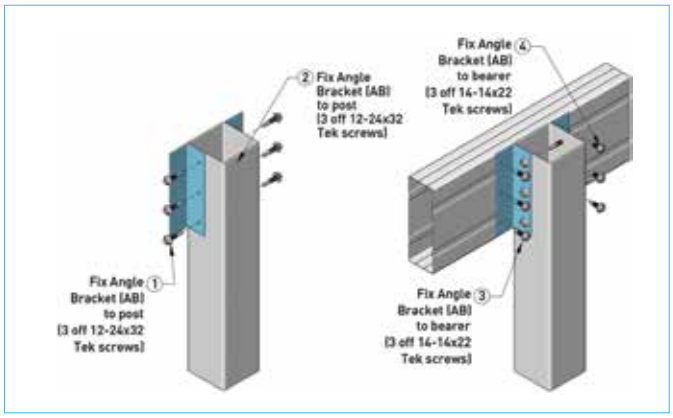
Perimeter bearers connection



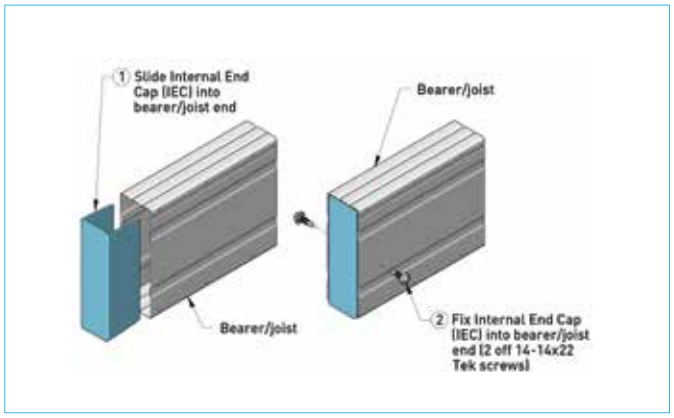
Bearer join connection



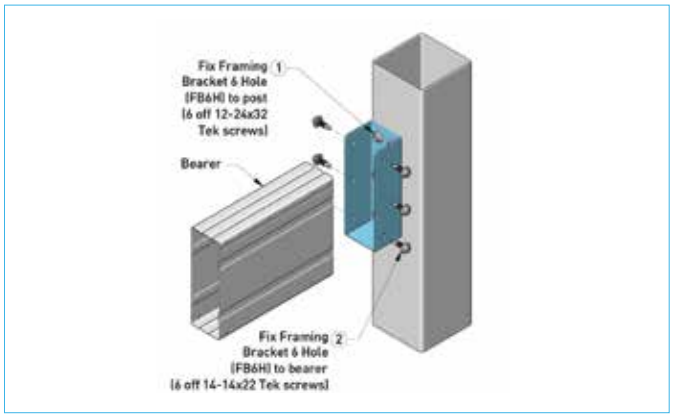
Internal double bearer to post connection



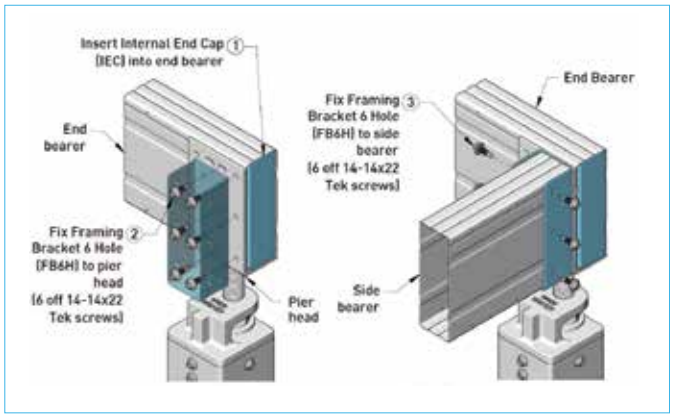
Bearer to post connection with angle brackets



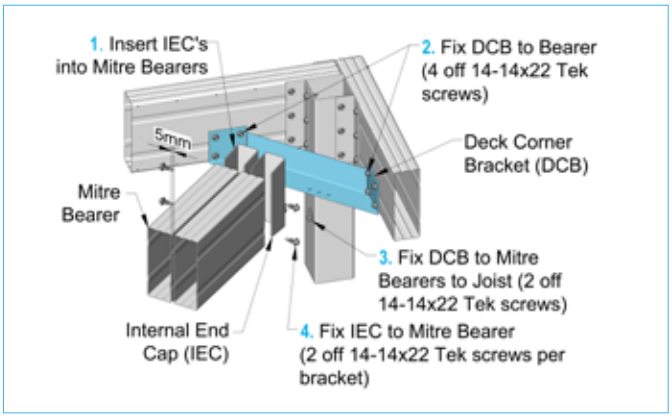
Bearer/joist end connection



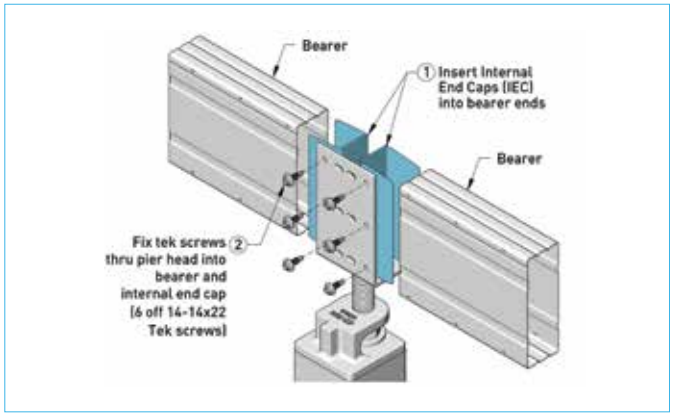
Bearer to post connection with framing bracket 6 hole



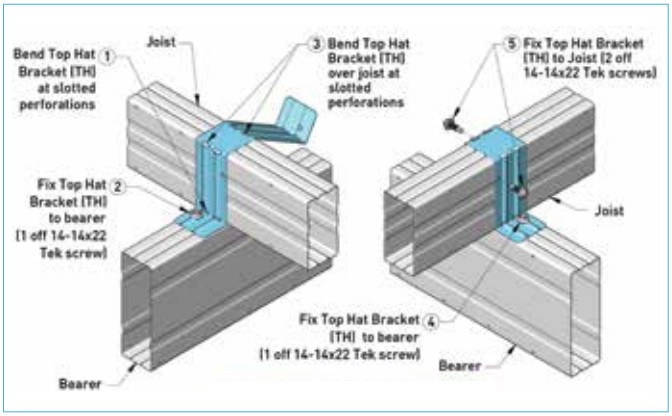
End bearer to side bearer connection



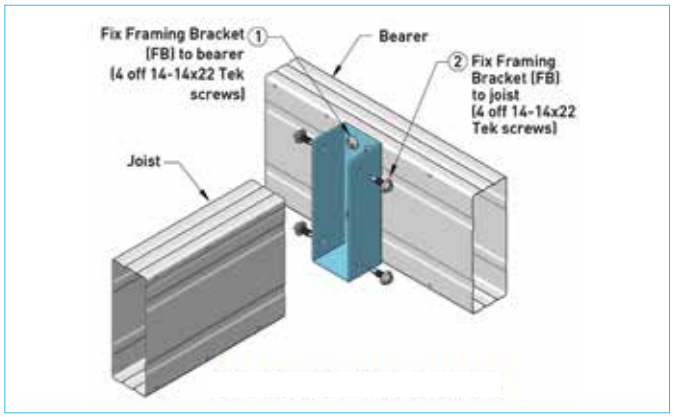
Deck mitre bearers connection



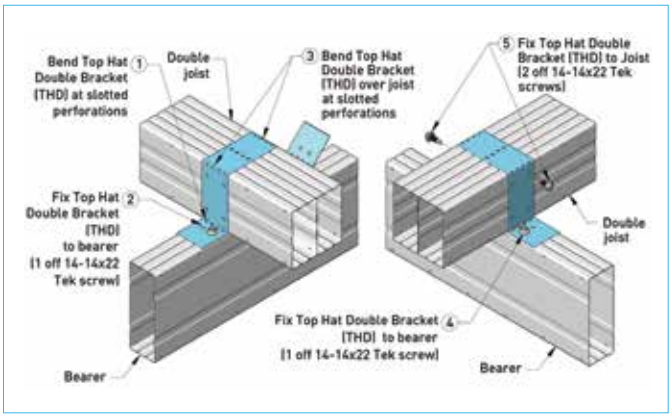
Ezipier bearer join connection



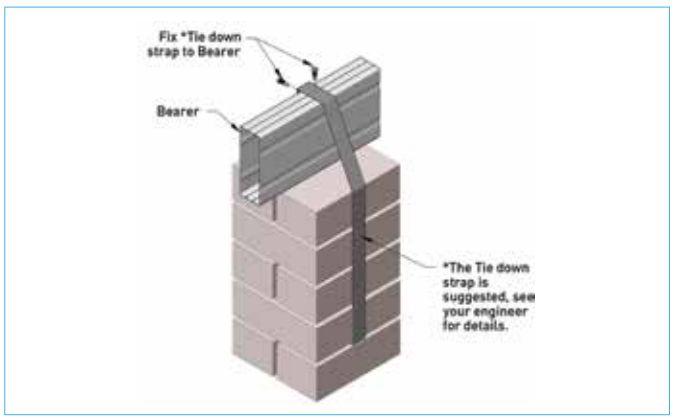
Joist over bearer connection



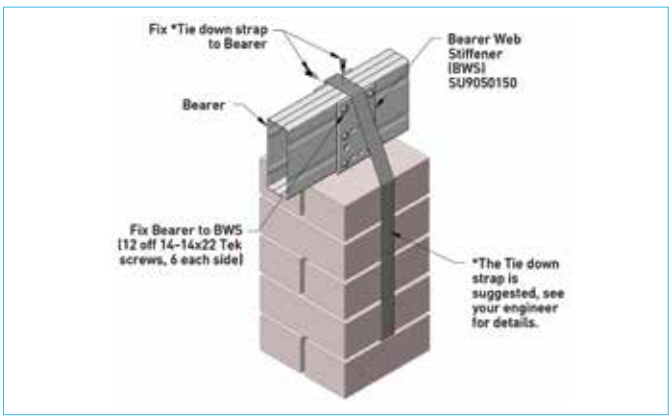
Joist to bearer connection



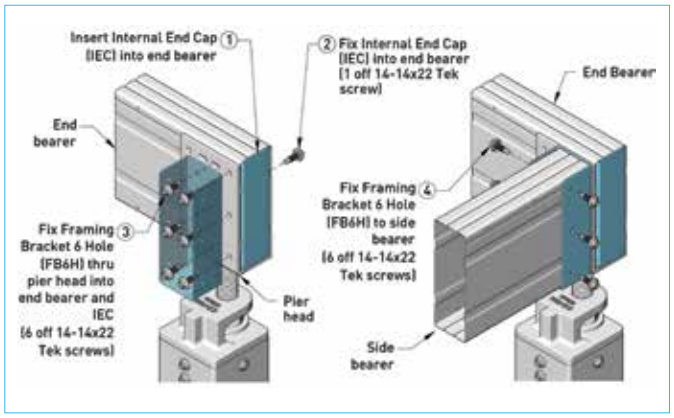
Double joist over bearer connection



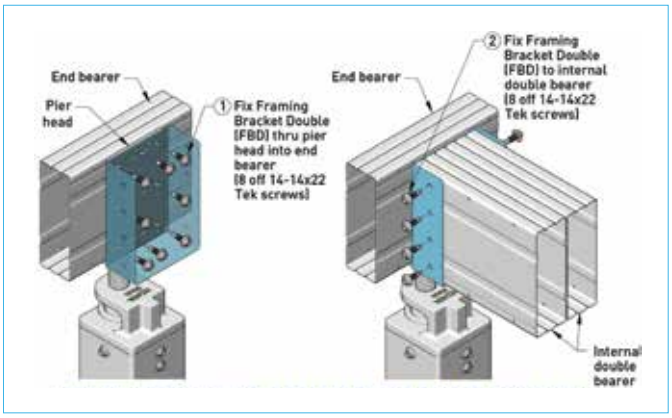
Standard brick pier connection



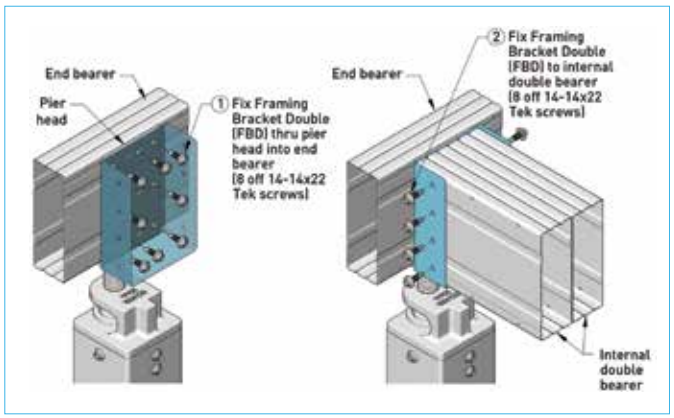
Heavier load brick pier connection



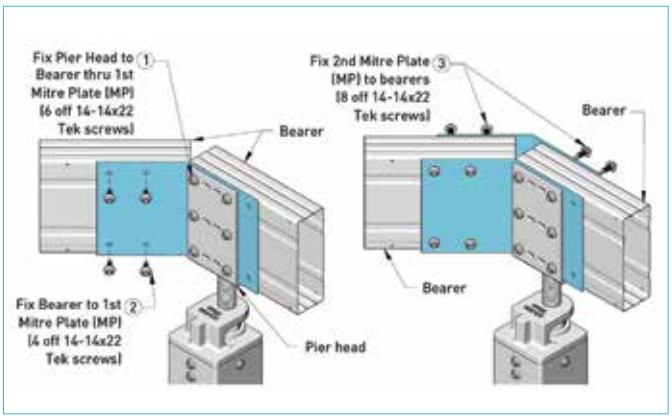
Ezipier end bearer to side bearer connection



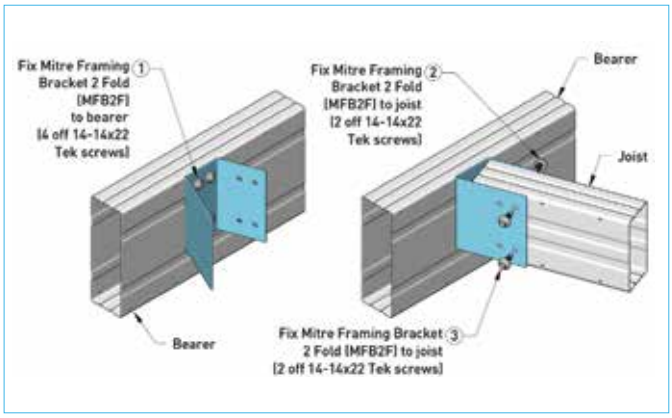
Ezipier internal double bearer to end bearer connection



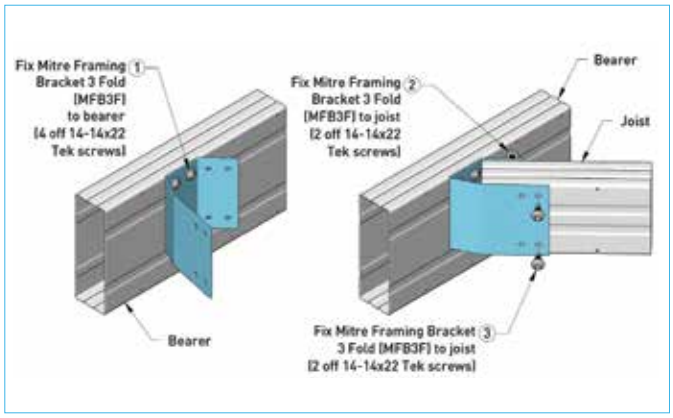
Ezipier internal double bearer to end bearer connection



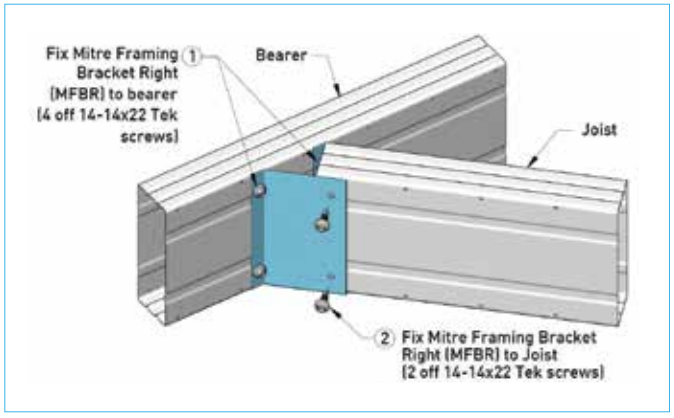
Angled bearer to pier head bearer



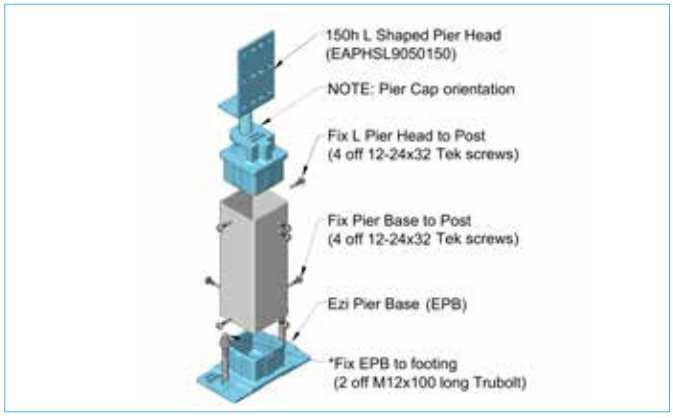
Angled joist to bearer connection (70–135º)



Angled joist to bearer connection (135–175º)

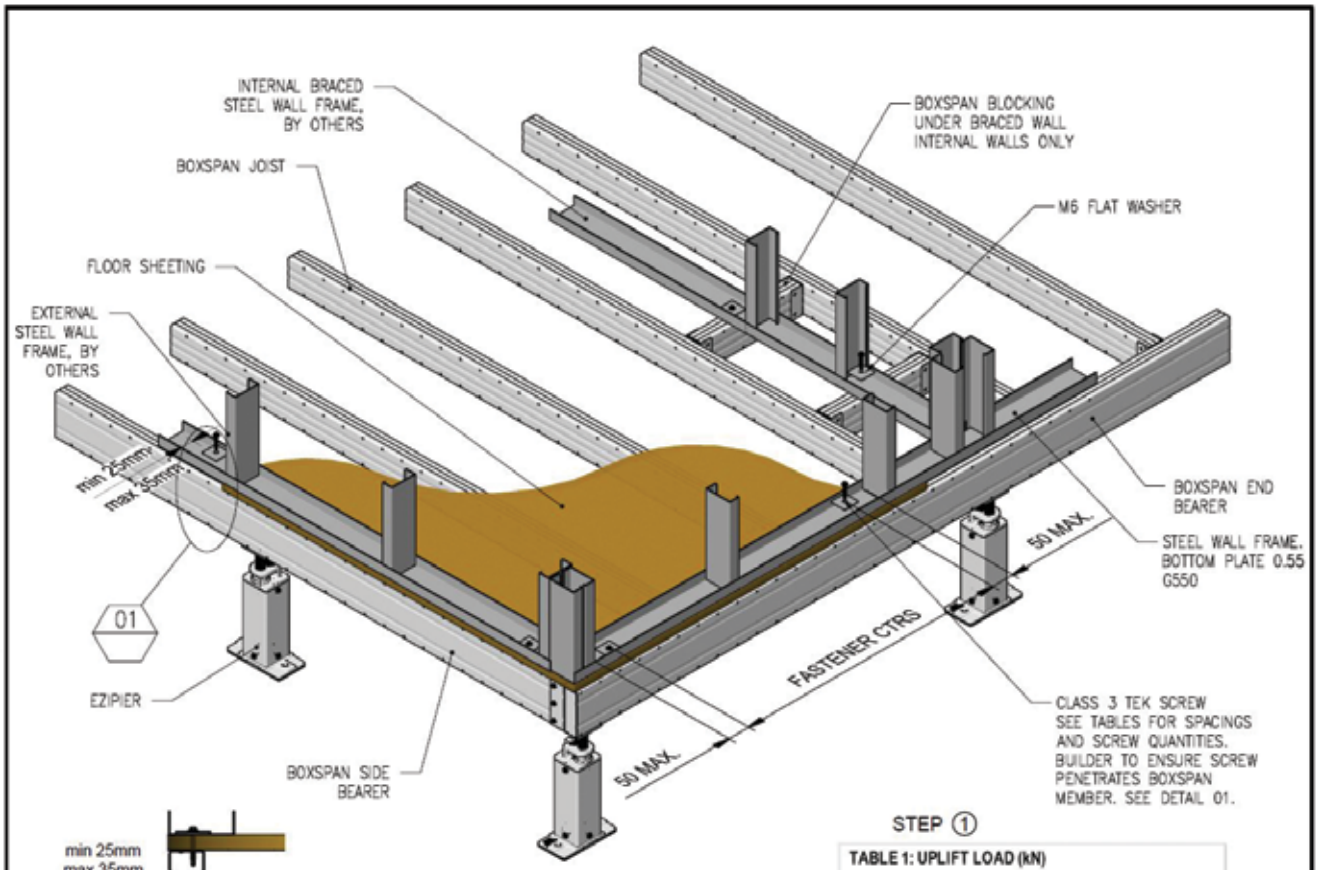


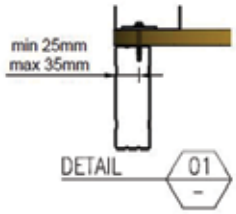
Angled joist to bearer connection



Ezipier assembly (see ezipier.com.au dor technical specs.)

Wall frames connection to Steel floor frame





FOR FURTHER INFORMATION:
REFER TO NASH STANDARD – RESIDENTIAL AND LOW RISE STEEL FRAMING PART 2 DESIGN SOLUTIONS. PAGES 61–63

NOTES
ROOF TRIBUTORY WIDTH GREATER THAN 6m TO BE DESIGNED BY OTHERS.
BRACE CONNECTION FORCES NOT CONSIDERED AND NEED TO BE COMBINED WITH TIE DOWN REQUIREMENTS.
NET UPLIFT PRESSURE AS PER TABLE 9.5 AS1684.2 – 2015

STEP ①

TABLE 1: UPLIFT LOAD (kN)

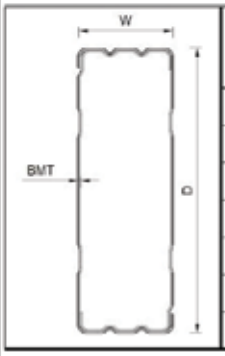
WIND CLASS	ROOFING MATERIAL	FASTENER CENTRES (mm) 450	900	1200
N1	SHEET	1.2	2.3	3.0
	TILE	1.2	2.3	3.0
N2	SHEET	1.2	2.3	3.0
	TILE	1.2	2.3	3.0
N3	SHEET	2.9	5.9	7.9
	TILE	1.7	3.3	4.4

NOTE
LOADS BASED ON MAXIMUM TRIBUTARY WIDTH = 6.0m
TILE ROOF VALUES MADE SAME AS SHEET FOR N1 & N2 RATHER THAN USING NOMINAL FIXING

STEP ②

TABLE 2: FASTENER QUANTITY

UPLIFT LOAD (kN)	SCREWS PER CONNECTION B100-12	B100-16	B150-20
		B150-16	B200-20
		B200-16	B250-20
1.2	1 x 10g	1 x 10g	1 x 10g
1.7	2 x 10g	2 x 10g	2 x 10g
2.3	3 x 10g	3 x 10g	2 x 10g
2.9	3 x 10g	3 x 10g	2 x 10g
3.0	3 x 10g	3 x 10g	2 x 10g
3.3	4 x 10g	3 x 10g	2 x 12g
4.4	4 x 14g	4 x 10g	3 x 12g
5.9	4 x 14g	4 x 14g	4 x 12g
7.9	6 x 14g	5 x 14g	5 x 12g



DIMENSION D x W (mm)	BOXSPAN SECTION	MATERIAL THICKNESS BMT (mm)	FLANGE THICKNESS 2xBMT (mm)
100 x 50	B100-12	0.6	1.2
100 x 50	B100-16	0.8	1.6
150 x 50	B150-16	0.8	1.6
150 x 50	B150-20	1.0	2.0
200 x 50	B200-16	0.8	1.6
200 x 50	B200-20	1.0	2.0
250 x 20	B250-20	1.0	2.0

Structural Design Certification By:
barnson
DESIGN . PLAN . MANAGE
ACN 003 342 445
2 Littlebourne Street, Kelso NSW 2795
Richard J. Noonan
BE(Hons)ME MIEAust CPEng
NPER 472690, RPEQ 5264,
VIC EC2249, NT 11585ES,
Date: 01-04-2019
Reference No: 1684

REV.	DESCRIPTION	DRN.	DATE
A	BARNSON'S CERTIFICATION	MR	13/05/19

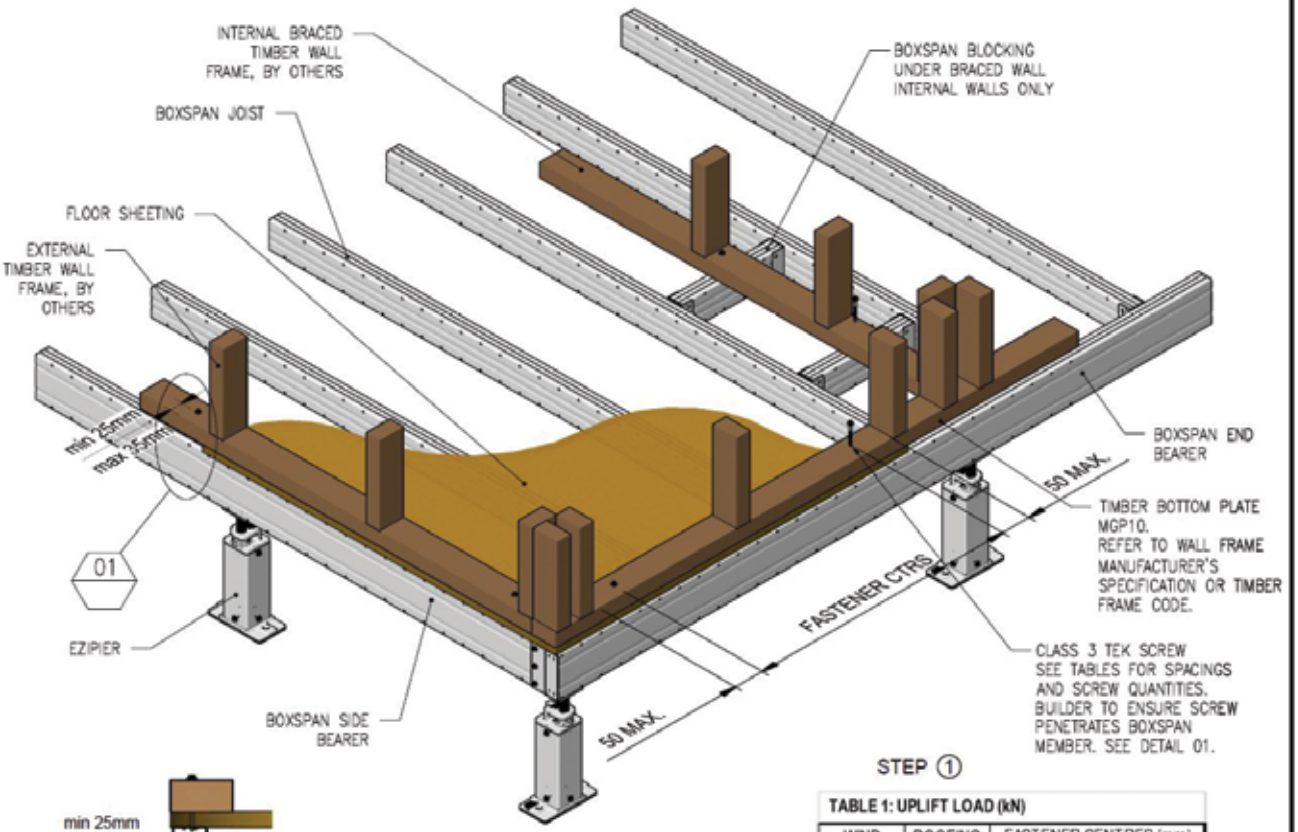
SPANTEC™ 17 Drapers Road, Braemar, NSW, 2575
PO Box 81, Mittagong, NSW, 2575, Australia
Phone: 02 4860 1000 Fax: 02 4872 1616
SPANTEC SYSTEMS Pty Ltd ABN 56 053 584 384 www.spantec.com.au

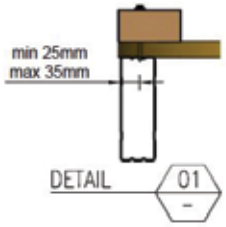
DESCRIPTION
TIE DOWN DETAIL
STEEL WALL FRAME CONNECTED TO BOXSPAN FLOOR FRAME
UP TO N3 WIND CONDITIONS

DRAWING NO. TD01
REVISION A
SCALE @ A3 NTS
DRAWN MR
DATE DRAWN 20/12/17

COMMON CONNECTIONS FLOOR FRAMES – TIMBER

Wall frames connection to Timber floor frame





FOR FURTHER INFORMATION:
REFER TO NASH STANDARD – RESIDENTIAL AND LOW RISE STEEL FRAMING PART 2 DESIGN SOLUTIONS. PAGES 61–63

NOTES
ROOF TRIBUTORY WIDTH GREATER THAN 6m TO BE DESIGNED BY OTHERS.
BRACE CONNECTION FORCES NOT CONSIDERED AND NEED TO BE COMBINED WITH TIE DOWN REQUIREMENTS.
NET UPLIFT PRESSURE AS PER TABLE 9.5 AS1684.2 – 2015

STEP ①

TABLE 1: UPLIFT LOAD (kN)

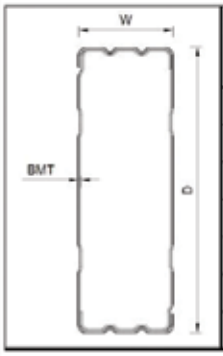
WIND CLASS	ROOFING MATERIAL	FASTENER CENTRES (mm) 450	900	1200
N1	SHEET	1.2	2.3	3.0
	TILE	1.2	2.3	3.0
N2	SHEET	1.2	2.3	3.0
	TILE	1.2	2.3	3.0
N3	SHEET	2.9	5.9	7.9
	TILE	1.7	3.3	4.4

NOTE
LOADS BASED ON MAXIMUM TRIBUTARY WIDTH = 6.0m
TILE ROOF VALUES MADE SAME AS SHEET FOR N1 & N2 RATHER THAN USING NOMINAL FIXING

STEP ②

TABLE 2: FASTENER QUANTITY

UPLIFT LOAD (kN)	SCREWS PER CONNECTION B100-12	B100-16	B150-20
		B150-16	B200-20
		B200-16	B250-20
1.2	1 x 10g	1 x 10g	1 x 10g
1.7	2 x 10g	2 x 10g	2 x 10g
2.3	3 x 10g	3 x 10g	2 x 10g
2.9	3 x 10g	3 x 10g	2 x 10g
3.0	3 x 10g	3 x 10g	2 x 10g
3.3	4 x 10g	3 x 10g	2 x 12g
4.4	4 x 14g	4 x 10g	3 x 12g
5.9	4 x 14g	4 x 14g	4 x 12g
7.9	6 x 14g	5 x 14g	5 x 12g



DIMENSION D x W (mm)	BOXSPAN SECTION	MATERIAL THICKNESS BMT (mm)	FLANGE THICKNESS 2xBMT (mm)
100 x 50	B100-12	0.6	1.2
100 x 50	B100-16	0.8	1.6
150 x 50	B150-16	0.8	1.6
150 x 50	B150-20	1.0	2.0
200 x 50	B200-16	0.8	1.6
200 x 50	B200-20	1.0	2.0
250 x 20	B250-20	1.0	2.0

Structural Design Certification By:
barnson
DESIGN . PLAN . MANAGE
ACN 088 342 645
2 Littlecourne Street, Kelso NSW 2795
Richard J. Noonan
BE(Hons)ME MIEAust CPEng
NPER 472690, RPEQ 5264, VIC EC2249, NT 11585ES,
Date: 01-04-2019
Reference No: 1684

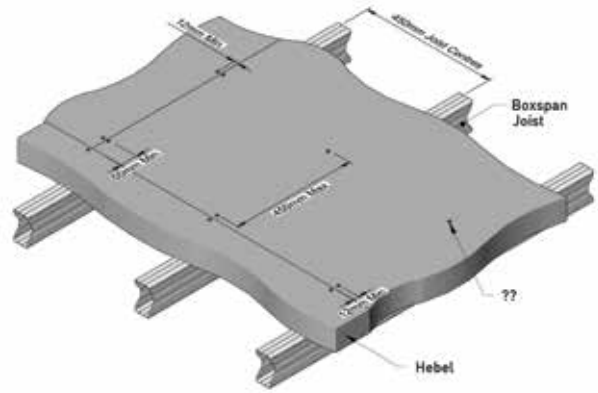
REV.	DESCRIPTION	DRN.	DATE
A	BARNSON'S CERTIFICATION	MR	13/05/19

SPANTEC™ 17 Drapers Road, Braemar, NSW, 2575
PO Box 81, Mittagong, NSW, 2575, Australia
Phone: 02 4860 1000 Fax: 02 4872 1616
SPANTEC SYSTEMS Pty Ltd ABN 56 053 564 284 www.spantec.com.au

DESCRIPTION
TIE DOWN DETAIL
TIMBER WALL FRAME CONNECTED TO BOXSPAN FLOOR FRAME
UP TO N3 WIND CONDITIONS

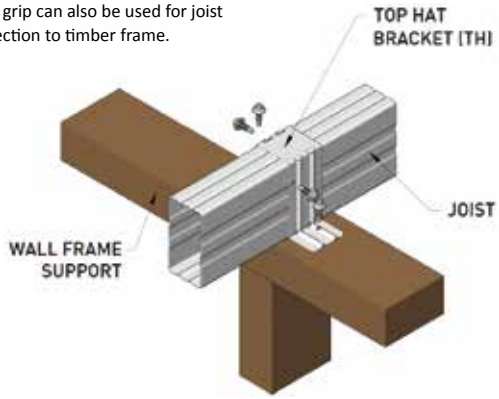
DRAWING NO.	REVISION
TD02	A
SCALE @ A3: NTS	DRAWN: MR
	DATE DRAWN: 20/12/17

COMMON CONNECTIONS FLOOR FIXINGS

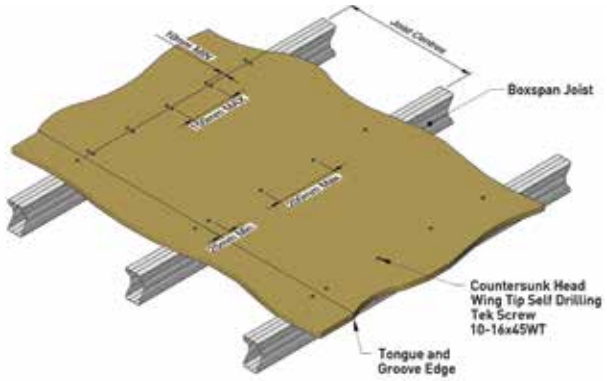


Hebel sheeting fixing to Boxspan joists

Triple grip can also be used for joist connection to timber frame.



Continuous joist over support frame connection



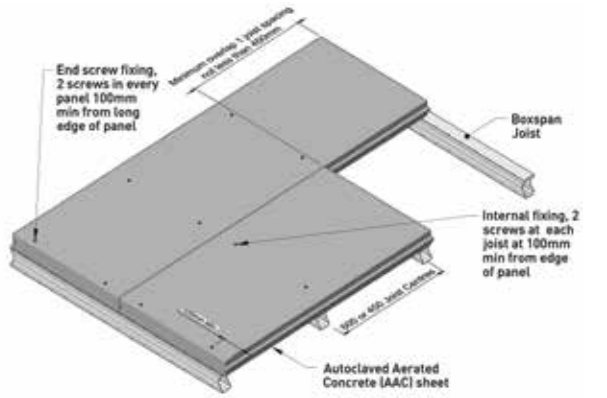
FASTENER DESCRIPTION	JOIST MATERIAL	FASTENER CODE
COUNTERSUNK HEAD WING TIP SELF DRILLING TEK SCREW	STEEL	10-16x45WT AVAILABLE IN PACKS OF 25 & 500
SENCO HARDENED TWIST NAIL	STEEL	6F21AZA 58x2.87mm AVAILABLE IN PACKS OF 1000 & 3000

JOIST CENTRES	NUMBER OF FASTENERS REQUIRED	
	PER 900x3600 SHEET	PER SQUARE METER
450mm	51	16
600mm	41	13

NOTE: QUANTITIES INCLUDE 5% WASTE

Fixing Notes:
Refer to the manufacturer's installation instructions.
Particleboard flooring should be fixed with construction grade adhesive and mechanical grade fasteners.
A 4mm continuous bead of adhesive is applied to joist before positioning particleboard sheets.
A bead of adhesive should also be applied along the tongue before sheets are pushed together.

Particleboard flooring fixing to Boxspan joists and Fixing Notes



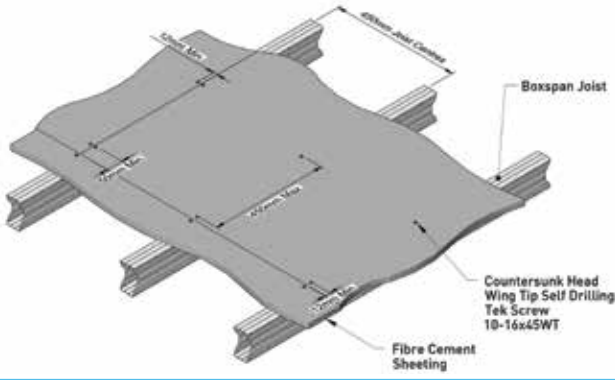
FASTENER DESCRIPTION	JOIST MATERIAL	FASTENER CODE
SELF DRILLING TEK SCREW	STEEL	14-10x95

JOIST CENTRES	NUMBER OF FASTENERS REQUIRED	
	PER 600x1800 SHEET	PER SQUARE METRE
600mm	6	6

NOTE: QUANTITIES INCLUDE 5% WASTE

Fixing Notes:
Refer to the manufacturer's installation instructions

AAC floor sheeting fixing to Boxspan joists and Fixing Notes



FASTENER DESCRIPTION	JOIST MATERIAL	FASTENER CODE
COUNTERSUNK HEAD WING TIP SELF DRILLING TEK SCREW	STEEL	10-16x45WT AVAILABLE IN PACKS OF 25 & 500

JOIST CENTRES	NUMBER OF FASTENERS REQUIRED	
	PER 900x1800 SHEET	PER SQUARE METRE
450mm	16	10

NOTE: QUANTITIES INCLUDE 5% WASTE

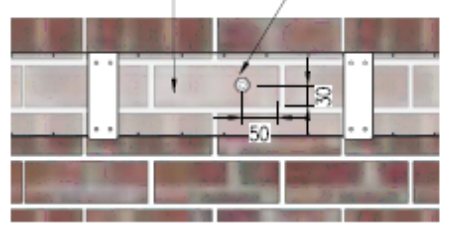
Fixing Notes:
Refer to the manufacturer's installation instructions.
Fibre Cement sheeting should be fixed with construction grade adhesive and mechanical grade fasteners.
A 4mm continuous bead of adhesive is applied to joist before positioning sheets.

Fibre cement sheeting fixing to Boxspan joists and Fixing Notes

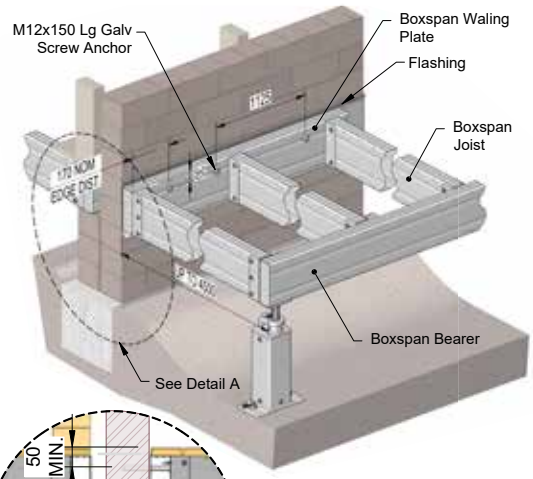
COMMON CONNECTIONS DECK

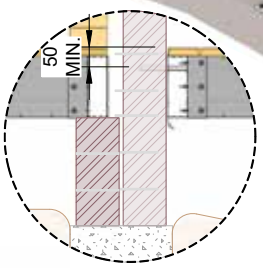
Ezipier, L shape pier head can be used in conjunction with the span tables within this design guide.

CONNECTION DETAILS



SCREW BOLT MINIMUM EDGE DISTANCE IN BRICKWORK

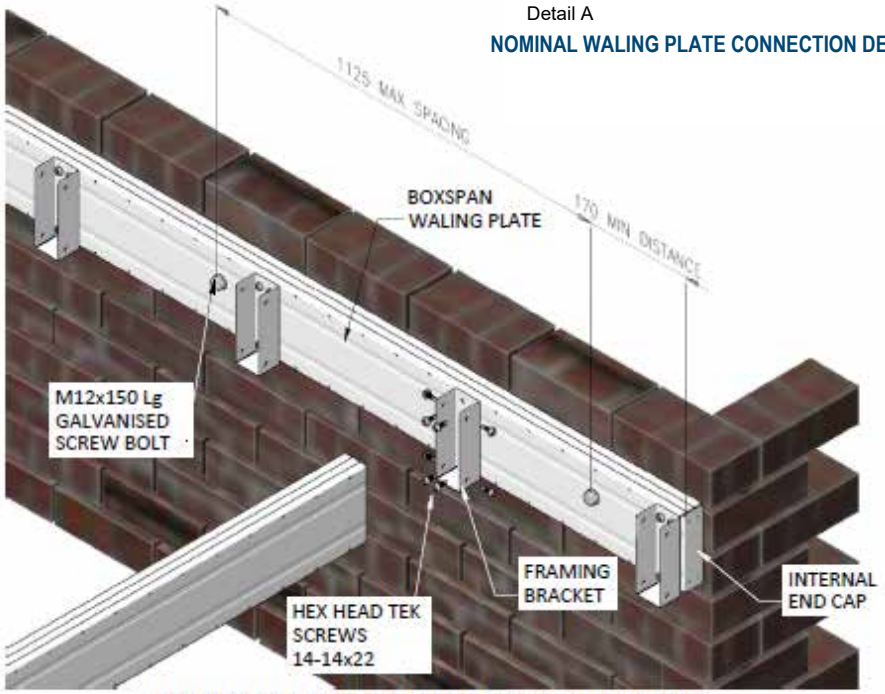




Detail A

NOTE:
These connection details are nominal and need to be confirmed by a competent person to suit the site conditions.

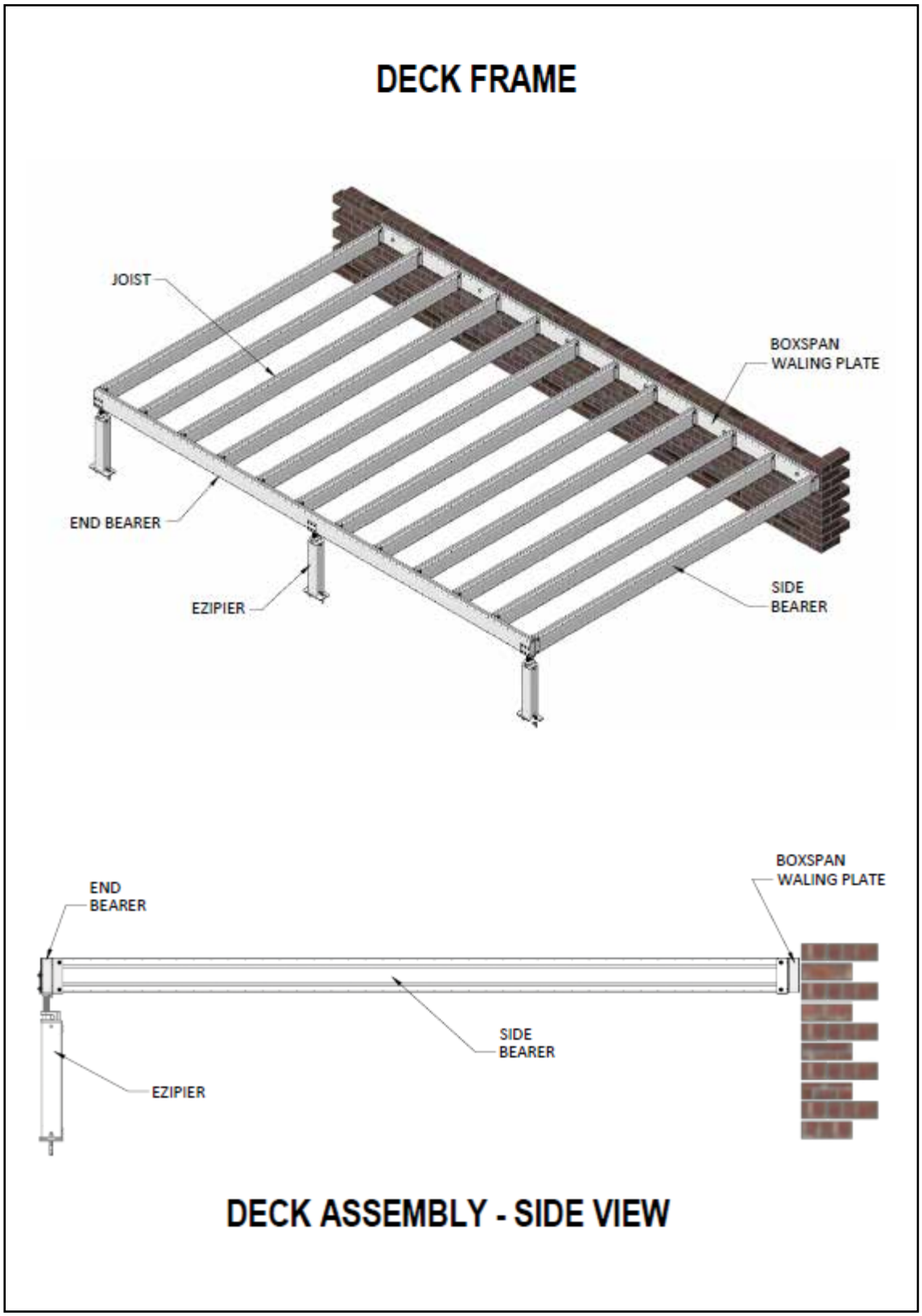
NOMINAL WALING PLATE CONNECTION DETAILS



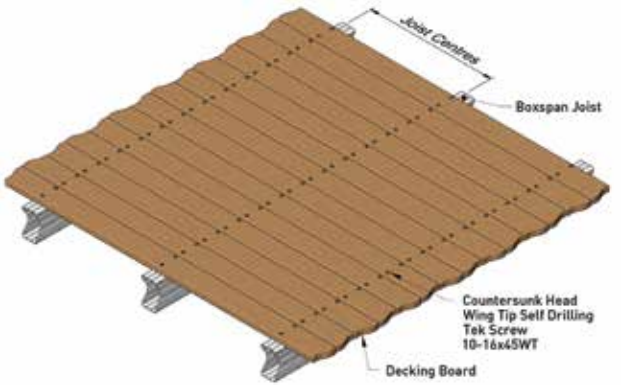
FIXING TO EXISTING STRUCTURE (MASONRY) AND FRAMING BRACKET DETAIL

COMMON CONNECTIONS DECK CONTINUED

Waling plate connection and screw bolt spacing is a guide only, your project engineer should be consulted before construction.



COMMON CONNECTIONS FLOOR FIXINGS – DECKS



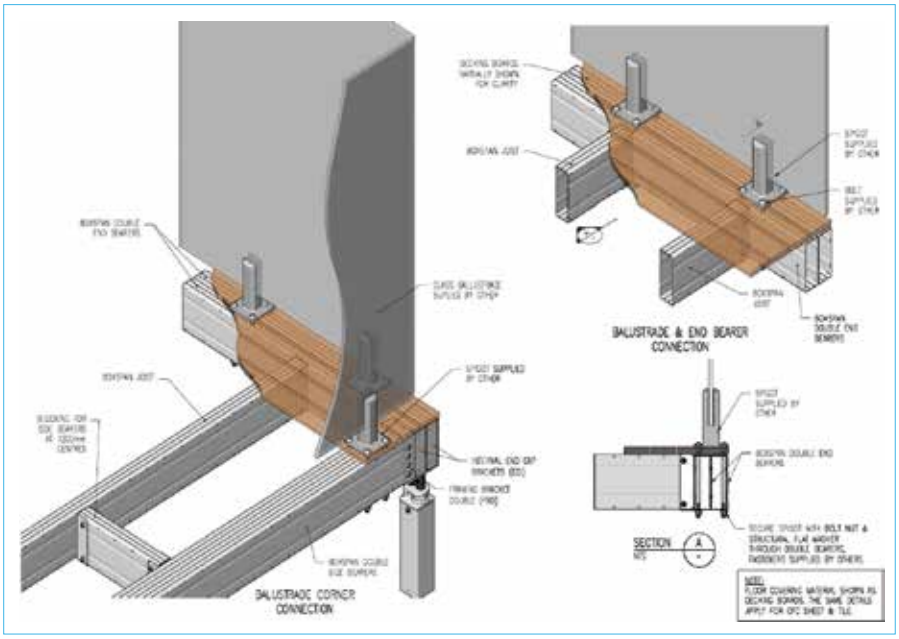
FASTENER DESCRIPTION	JOIST MATERIAL	FASTENER CODE
COUNTERSUNK HEAD WING TIP SELF DRILLING TEK SCREW	STEEL	10-16x45WT AVAILABLE IN PACKS OF 25 & 500

JOIST CENTRES	NUMBER OF FASTENERS PER SQUARE METRE			
	70mm DECKING	90mm DECKING	120mm DECKING	140mm DECKING
450mm	77	60	45	38
600mm	57	45	34	29

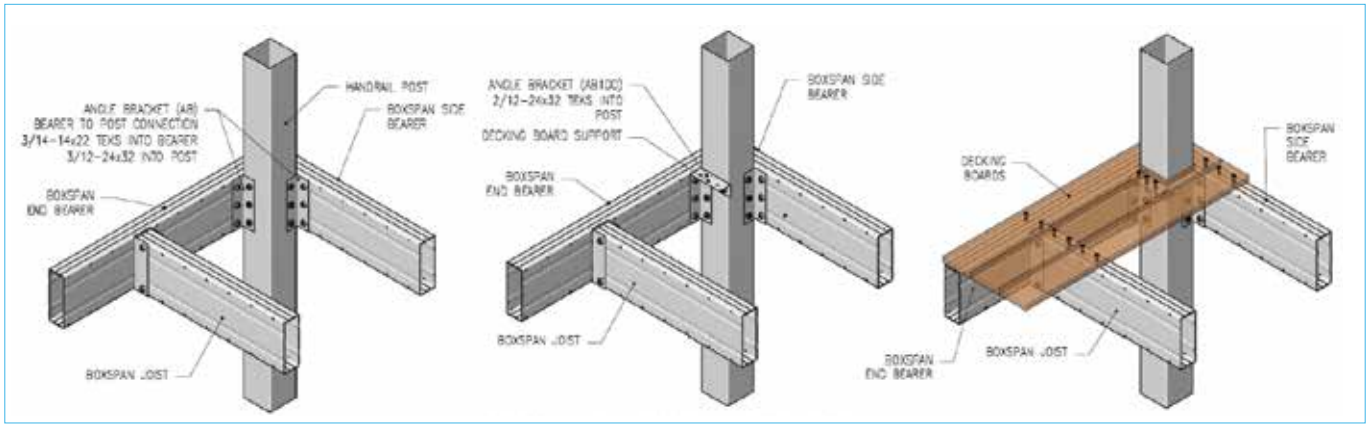
NOTE: QUANTITIES INCLUDE 5% WASTE

Decking board fixing to Boxspan joists and Fixing Notes

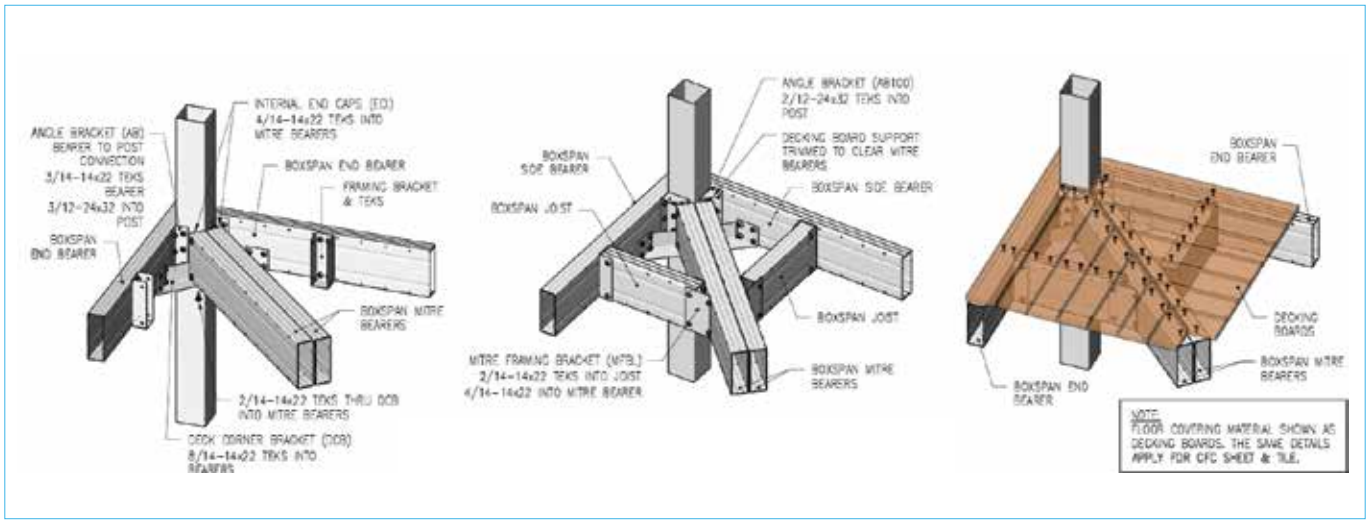
SUGGESTED CONNECTIONS DECKS AND HANDRAILS



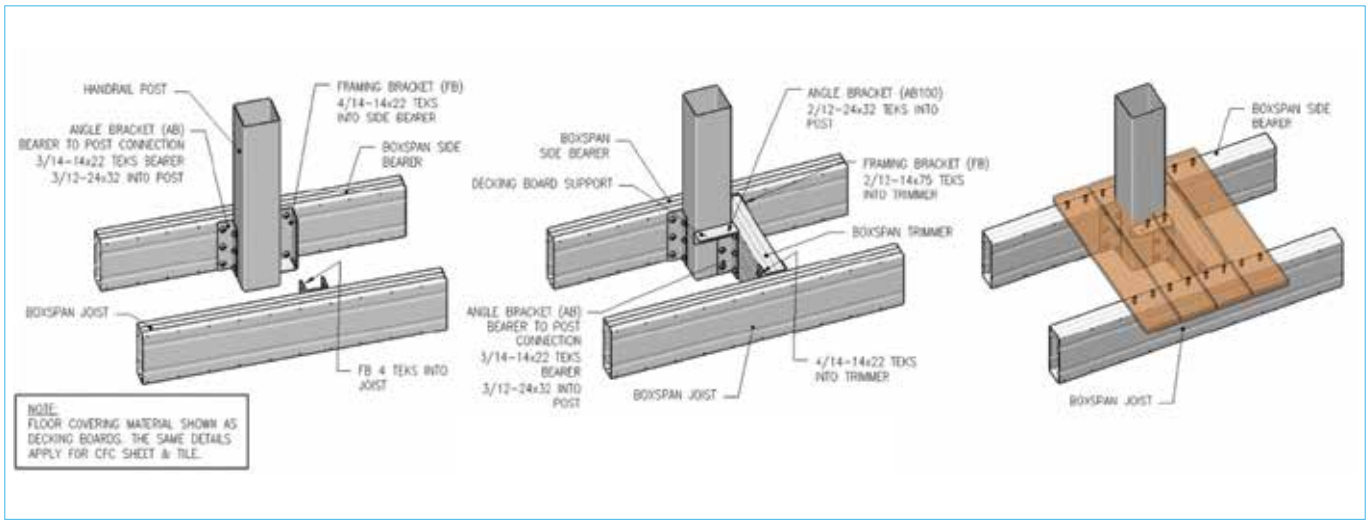
Balustrade Corner and End Bearer connections



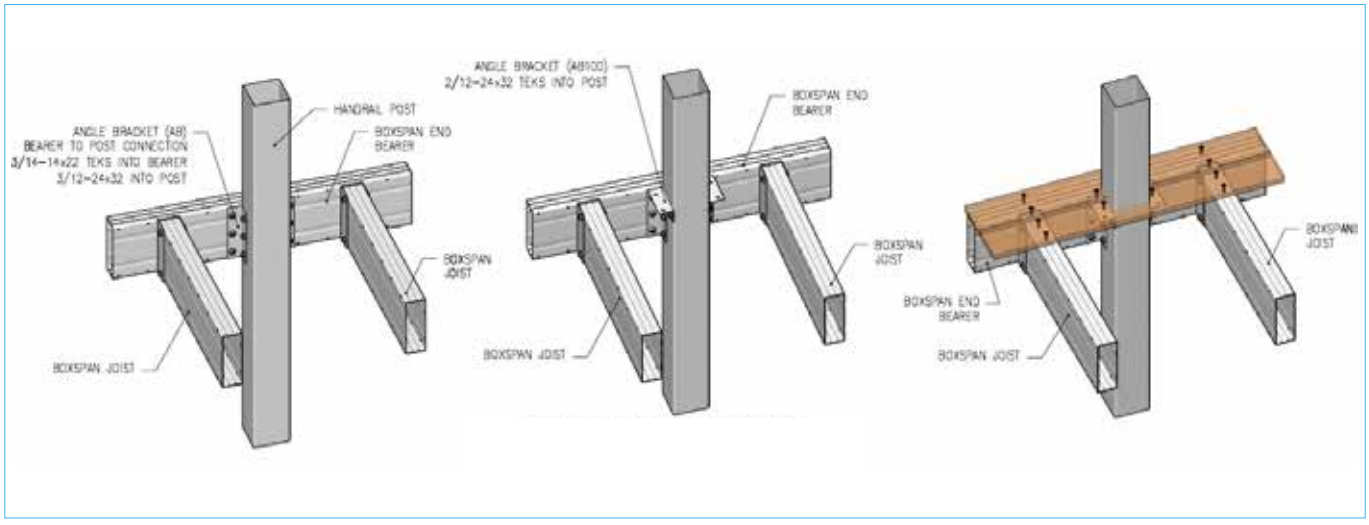
Corner Handrail and Post connections



Corner Handrail Post Mitre Bearer connections

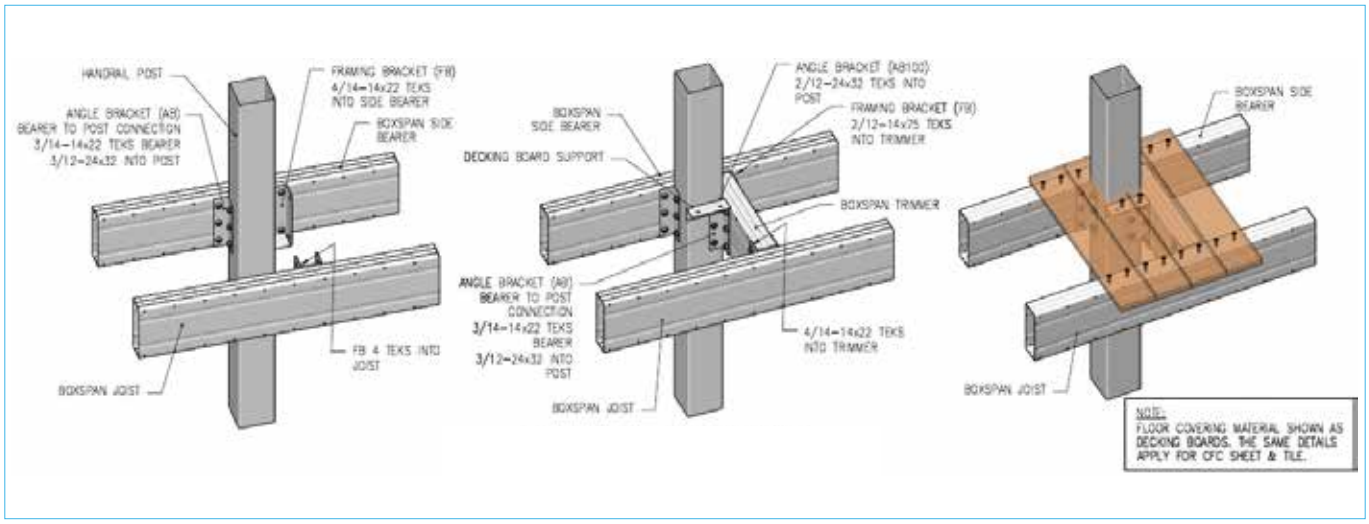


Handrail Post Side Bearer to Post connections

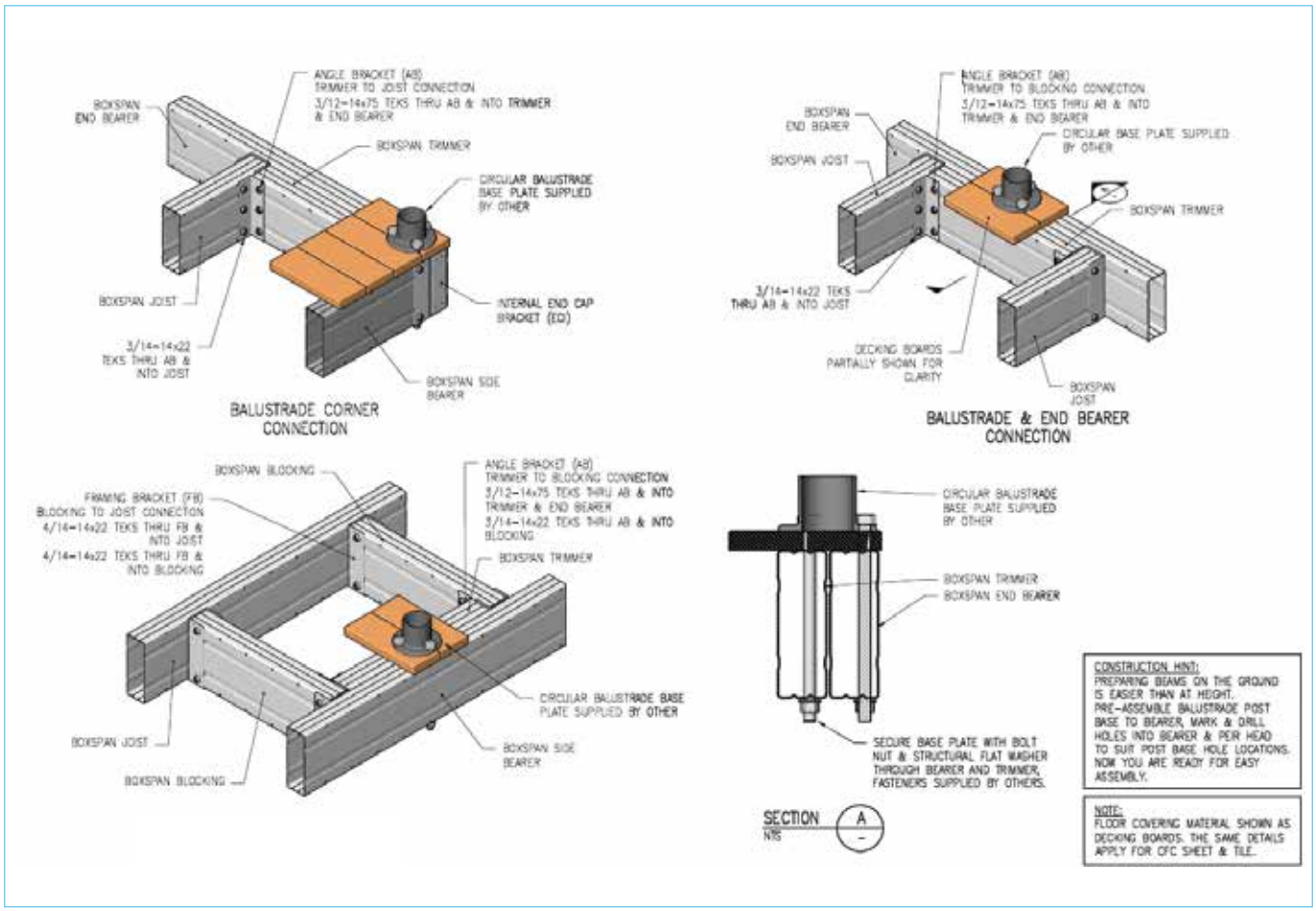


Handrail Post to Foundation End Bearer to Post connections

SUGGESTED CONNECTIONS DECKS AND HANDRAILS CONTINUED



Handrail Post to Foundation Side Bearer to Post connections



Balustrade and Side Bearer connection

ROOFS & LINTELS

Rafters

Supporting rectangular building sheet roof and ceiling loads to 40 kg/m² only

- Wind Class: N3
- Live Load: 0.25kPa
- Dead Load: 0.4kPa
- First Support: Framing Bracket 4 Hole
- Mid Supports: Double UB50 or Triple Grip

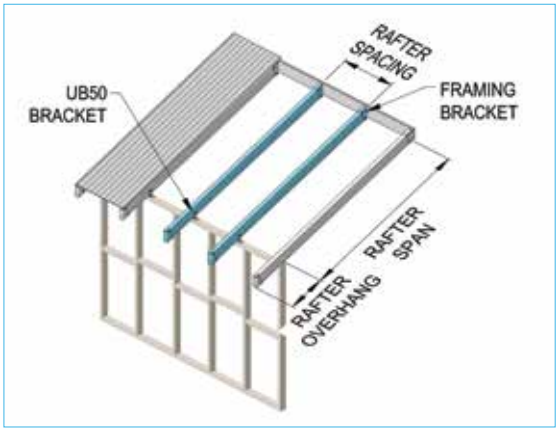


Table 20	ALLOWABLE RAFTER SPAN (mm)											
BOXSPAN SECTION	RAFTER SPACING (mm)											
	450	600	900	1200	1500	1800	450	600	900	1200	1500	1800
	SHEET ROOF & CEILING 40kg/m²											
	NO OVER HANG											
	MAXIMUM SINGLE SPAN						MAXIMUM CONTINUOUS SPAN					
B100-12	3826	3826	3826	3550	3219	2939	4508	4332	3315	2721	2323	1987
B100-16	4389	4389	4100	3815	3608	3398	5171	5171	4497	3730	3214	2837
B150-16	6166	5738	5185	4825	4563	4360	7678	6945	5341	4401	3771	3313
B150-20	6511	6059	5475	5095	4818	4604	8106	7544	6817	5896	5122	4555
B150-24	6821	6348	5736	5338	5048	4823	8493	7903	7142	6646	6162	5497
B200-16	7331	6822	6165	5737	5426	5184	9128	7950	6103	5023	4298	3773
B200-20	7736	7199	6505	6054	5725	5470	9632	8964	7990	6670	5778	5126
B250-20	8860	8245	7450	6933	6557	6265	11031	10266	8530	7040	6039	5312
	500 mm OVER HANG											
	MAXIMUM SINGLE SPAN						MAXIMUM CONTINUOUS SPAN					
B100-12	3124	3124	3124	3124	2951	2794	3607	3607	3355	2770	2381	2060
B100-16	3584	3584	3584	3437	3208	3034	4138	4138	4138	3766	3255	2884
B150-16	5733	5733	5078	4628	4309	4065	6620	6620	5365	4431	3806	3353
B150-20	6391	6083	5449	4964	4619	4357	7379	7379	6804	5918	5148	4584
B150-24	6843	6371	5762	5272	4905	4625	8100	7893	7130	6633	6183	5521
B200-16	7351	6844	6189	5763	5386	5077	9119	7966	6125	5049	4330	3809
B200-20	7755	7220	6528	6078	5751	5443	9624	8955	8006	6690	5801	5152
B250-20	8876	8263	7470	6954	6579	6288	11024	10258	8546	7059	6062	5337
	1000 mm OVER HANG											
	MAXIMUM SINGLE SPAN						MAXIMUM CONTINUOUS SPAN					
B100-12	830	830	–	–	–	–	949	949	949	–	–	–
B100-16	1408	1408	1408	1408	1408	1408	1609	1609	1609	1609	1609	1609
B150-16	5162	5162	5162	4886	4589	4366	5900	5900	5439	4521	3910	3471
B150-20	6391	6158	5585	5202	4878	4634	7379	7379	6768	5984	5224	4669
B150-24	6909	6442	5841	5451	5147	4884	8100	7861	7095	6596	6232	5592
B200-16	7413	6911	6262	5842	5537	5300	9092	8016	6190	5128	4422	3913
B200-20	7814	7283	6598	6153	5830	5580	9598	8927	8055	6749	5869	5229
B250-20	8927	8317	7531	7020	6648	6361	11001	10233	8592	7116	6128	5413

Ridge and Intermediate Beams

Supporting rectangular building

- Wind Class: N3
- Live Load: 0.25kPa
- Supports: UB50 Brackets

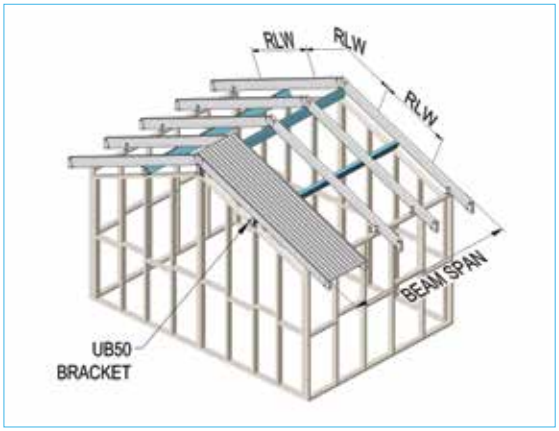


Table 21	MAXIMUM BEAM SPAN BETWEEN SUPPORTS (mm)													
BOXSPAN SECTION	2000	3000	4000	5000	6000	8000	9000	2000	3000	4000	5000	6000	8000	9000
	ROOF LOAD WIDTH RLW (mm)													
	SHEET ROOF & CEILING 40kg/m²													
	SINGLE SPAN							CONTINUOUS SPAN						
B100-16	–	–	–	–	–	–	–	–	–	–	–	–	–	–
B150-16	4146	3563	3105	2759	2525	2205	2063	4127	3231	2713	2345	2070	1719	1578
B150-20	4493	4050	3621	3260	2964	2565	2430	4863	3805	3199	2775	2453	2026	1888
B150-24	4706	4254	3960	3746	3437	2980	2802	5643	4423	3702	3219	2851	2361	2180
B200-16	5049	4128	3559	3204	2908	2515	2378	4689	3669	3052	2648	2349	1932	1798
B200-20	5335	4822	4214	3761	3435	2976	2800	5645	4425	3705	3221	2853	2363	2182
B250-20	6108	5521	4879	4356	3981	3437	3241	6360	4953	4121	3560	3160	2581	2380
2/B100-16	3778	3417	3169	2983	2836	2490	2365	4865	4015	3459	3064	2768	2335	2168
2/B150-16	5058	4572	4256	3911	3563	3105	2913	6109	4971	4267	3750	3363	2834	2642
2/B150-20	5339	4826	4493	4250	4061	3621	3421	6644	5870	5063	4522	4114	3483	3256
2/B150-24	5593	5056	4706	4452	4254	3960	3846	6960	6290	5854	5218	4747	4049	3764
2/B200-16	6011	5433	5049	4503	4128	3559	3363	6997	5662	4841	4240	3799	3201	2957
2/B200-20	6342	5732	5335	5047	4822	4214	3975	7893	6727	5784	5140	4636	3901	3648
2/B250-20	7262	6563	6108	5777	5521	4879	4593	9038	7430	6240	5437	4834	4017	3713

Ceiling Joists

Supporting rectangular building ceiling loads only

- Wind Class: N3
- Live Load: 0.25kPa
- Dead Load: 0.15kPa
- First Support: Framing Bracket 4 Hole
- Mid Supports: Double UB50 or Triple Grip

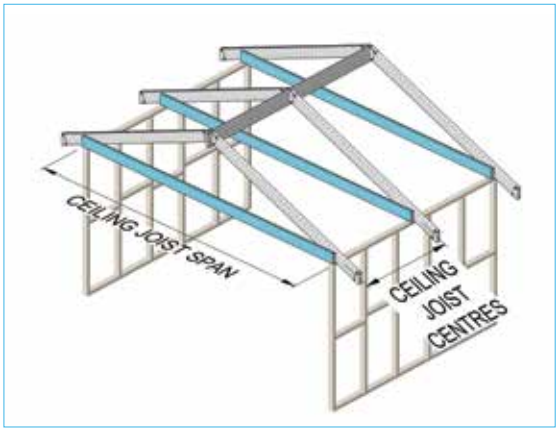


Table 22	MAXIMUM CEILING JOIST SPAN (mm)											
BOXSPAN SECTION	300	400	450	600	900	1200	300	400	450	600	900	1200
	CEILING JOIST CENTRES (mm)											
	SINGLE SPAN						CONTINUOUS SPAN					
B100-12	6440	5851	5626	5111	4465	4057	8627	7838	7536	6847	5981	5066
B100-16	7057	6412	6165	5601	4893	4445	9453	8588	8258	7503	6554	5955
B150-16	9652	8770	8432	7661	6692	6080	12930	11747	11295	10262	8965	8101
B150-20	10377	9428	9065	8236	7195	6537	13901	12630	12144	11033	9638	8757
B150-24	11042	10032	9646	8764	7656	6956	13999	13439	12922	11740	10256	9318
B200-16	12157	11045	10620	9649	8429	7658	13999	13999	13999	12925	11078	9281
B200-20	13060	11866	11409	10366	9055	8227	13999	13999	13999	13886	12130	11021
B250-20	13999	13999	13670	12420	10850	9858	13999	13999	13999	13999	13999	12902

Lintels

Supporting sheet roof and ceiling loads to 40kg/m² only

- Wind Class: N3
- Wall Weight 0.45kPa, height 0.3m
- Live Load: 0.25kPa
- Dead Load: 0.4kPa
- Supports: Lintel End Cap Internal + bearing

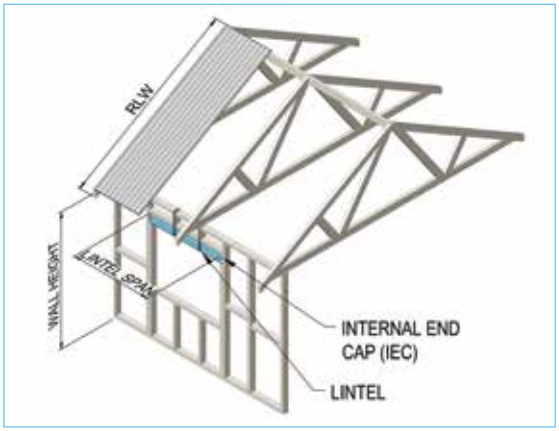


Table 23	MAXIMUM SINGLE SPAN (mm)						
BOXSPAN SECTION	1000	2000	3000	4000	5000	6000	8000
	ROOF LOAD WIDTH — RLW (mm)						
	SHEET ROOF & CEILING 40kg/m²						
B100-16	3262	2772	2463	2267	2127	2009	1736
B150-16	4108	3546	3239	3035	2824	2577	2169
B150-20	4334	3741	3415	3198	3039	2888	2643
B150-24	4538	3915	3574	3345	3178	3047	2806
B200-16	4873	4202	3836	3503	3158	2917	2515
B200-20	5139	4431	4043	3784	3592	3395	2977
B250-20	5879	5066	4621	4322	4102	3922	3379
2/B100-16	3865	3338	3051	2818	2634	2492	2286
2/B150-16	4873	4202	3836	3590	3408	3266	3055
2/B150-20	5142	4434	4046	3787	3595	3444	3218
2/B150-24	5385	4643	4235	3963	3763	3604	3367
2/B200-16	5785	4985	4548	4254	4038	3868	3528
2/B200-20	6102	5257	4795	4486	4256	4077	3808
2/B250-20	6983	6014	5483	5128	4865	4660	4350

Lintels

Supporting sheet roof and ceiling loads to 40kg/m² below a girder truss

- Wind Class: N3
- Live Load: 0.25kPa
- Dead Load: 0.4kPa
- Supports: Lintel Cap Internal + bearing

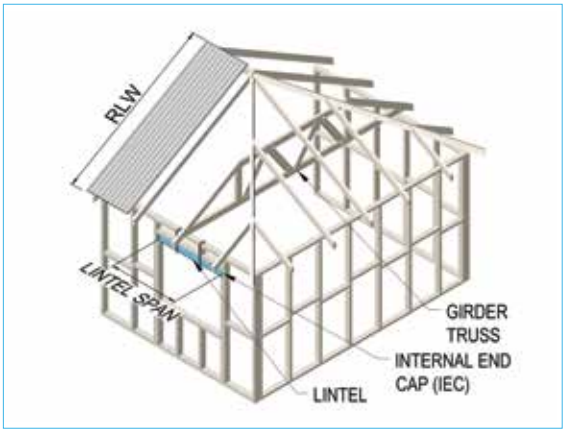


Table 24	MAXIMUM SINGLE SPAN (mm)			
BOXSPAN SECTION	3000	4000	5000	6000
	ROOF LOAD WIDTH — RLW (mm)			
	SHEET ROOF & CEILING 40kg/m² BELOW A GIRDER TRUSS			
B100-16	2380	2127	1427	–
B150-16	3284	2869	2011	–
B150-20	3466	3231	2573	1909
B150-24	3629	3381	3000	2386
B200-16	3888	3442	2459	1499
B200-20	4093	3827	3150	2346
B250-20	4671	4364	3787	1862
2/B100-16	3068	2785	2319	1815
2/B150-16	3888	3631	3258	2550
2/B150-20	4096	3829	3464	3126
2/B150-24	4284	4008	3651	3299
2/B200-16	4598	4296	3960	3131
2/B200-20	4847	4526	4206	3813
2/B250-20	5543	5170	4894	4451

Lintels

Supporting tiled roof and ceiling loads to 90 kg/m² only

- Wind Class: N3
- Wall Weight: 0.45 height 0.3m
- Live Load: 0.25kPa
- Dead Load: 0.9kPa
- Supports: Lintel End Cap Internal + bearing

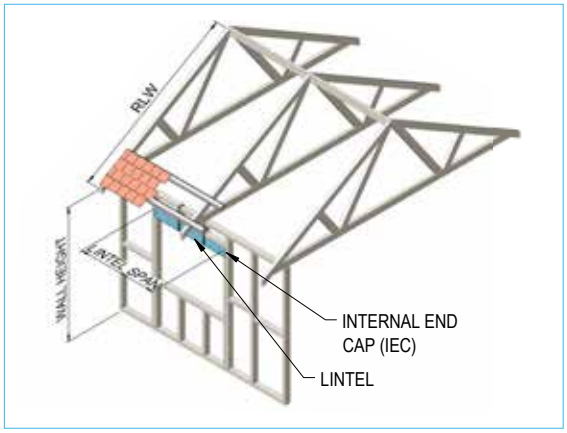


Table 25	MAXIMUM SINGLE SPAN (mm)						
BOXSPAN SECTION	1000	2000	3000	4000	5000	6000	8000
	ROOF LOAD WIDTH – FLW (mm)						
B100-16	2830	2301	2035	1865	1740	1645	1472
B150-16	3621	3094	2755	2518	2295	2109	1865
B150-20	3821	3264	2957	2701	2518	2376	2147
B150-24	4002	3417	3107	2870	2674	2524	2303
B200-16	4299	3670	3336	2988	2646	2410	2081
B200-20	4535	3871	3518	3285	3114	2875	2471
B250-20	5190	4429	4024	3756	3559	3296	2787
2/B100-16	3406	2882	2543	2323	2167	2048	1875
2/B150-16	4300	3671	3336	3116	2938	2772	2530
2/B150-20	4538	3874	3520	3287	3116	2976	2714
2/B150-24	4753	4057	3687	3442	3262	3122	2884
2/B200-16	5107	4358	3960	3696	3503	3352	3005
2/B200-20	5388	4597	4177	3898	3694	3535	3297
2/B250-20	6168	5261	4779	4460	4226	4043	3770

Lintels

Supporting sheet roof and ceiling loads to 40kg/m² plus single storey floor loads

- Wind Class: N3
- Wall Weight: 0.45kPa height 2.7 + 0.3m
- Floor Live Load: 1.5kPa
- Floor Dead Load: 0.75kPa
- Live Load: 0kPa
- Dead Load: 0.4kPa
- Supports: Lintel End Cap Internal + bearing

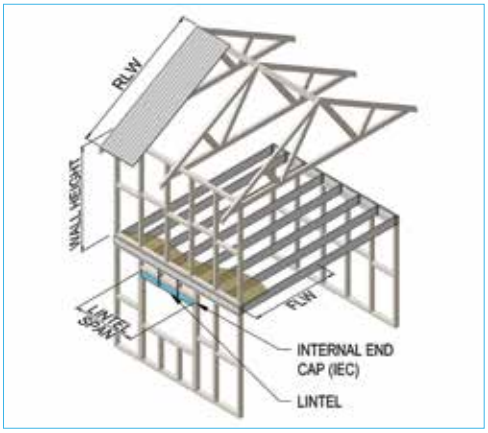


Table 26	MAXIMUM SINGLE SPAN (mm)			
BOXSPAN SECTION	3000	4000	5000	6000
	FLOOR LOAD WIDTH — FLW 900 (mm) – 40KG/M² PLUS SINGLE STOREY FLOOR LOADS			
B100-16	1912	1801	1745	1600
B150-16	2602	2438	2243	1972
B150-20	2796	2617	2530	2371
B150-24	2973	2783	2690	2583
B200-16	3201	2911	2621	2271
B200-20	3376	3209	3056	2767
B250-20	3865	3671	3489	3088
	FLOOR LOAD WIDTH — FLW 1200 (mm) – 40kg/m² PLUS SINGLE STOREY FLOOR LOADS			
B100-16	1818	1725	1678	1588
B150-16	2474	2339	2213	1952
B150-20	2659	2511	2437	2345
B150-24	2828	2669	2590	2499
B200-16	3083	2876	2582	2248
B200-20	3252	3111	3024	2746
B250-20	3722	3559	3446	3058
	FLOOR LOAD WIDTH — FLW 2100 (mm) – 40kg/m² PLUS SINGLE STOREY FLOOR LOADS			
B100-16	1614	1557	1528	1492
B150-16	2201	2116	2072	1898
B150-20	2365	2272	2223	2165
B150-24	2515	2414	2362	2299
B200-16	2768	2655	2478	2181
B200-20	2972	2850	2787	2661
B250-20	3410	3302	3245	2975
	FLOOR LOAD WIDTH — FLW 3000 (mm) – 40kg/m² PLUS SINGLE STOREY FLOOR LOADS			
B100-16	1480	1442	1421	1396
B150-16	2019	1960	1928	1847
B150-20	2169	2104	2069	2026
B150-24	2307	2236	2198	2151
B200-16	2461	2358	2300	2121
B200-20	2727	2639	2592	2535
B250-20	3196	3117	3075	2893

Lintels

Supporting tiled roof and ceiling loads to 90 kg/m² below a girder truss

- Wind Class: N3
- Live Load: 0.25kPa
- Dead Load: 0.9kPa
- Supports: Lintel End Cap Internal + bearing

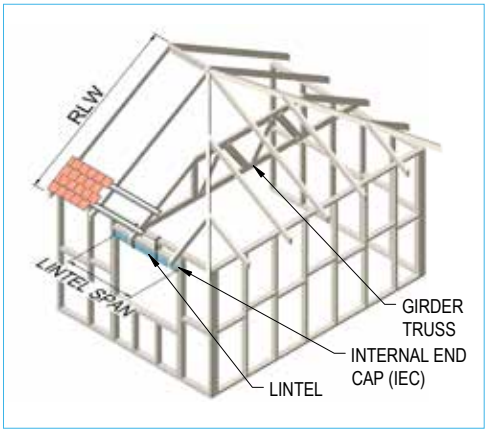
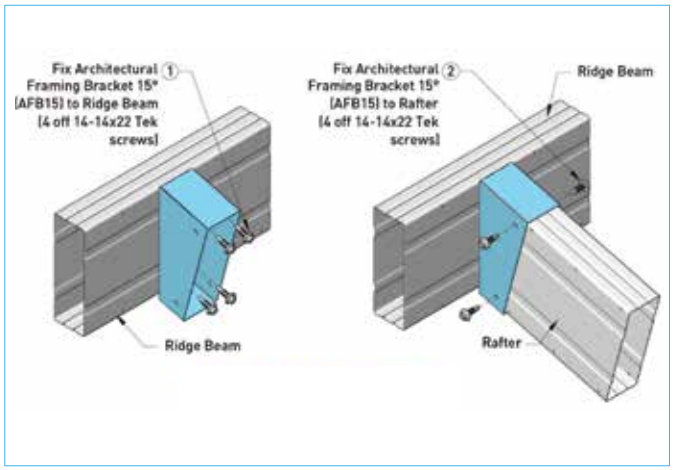
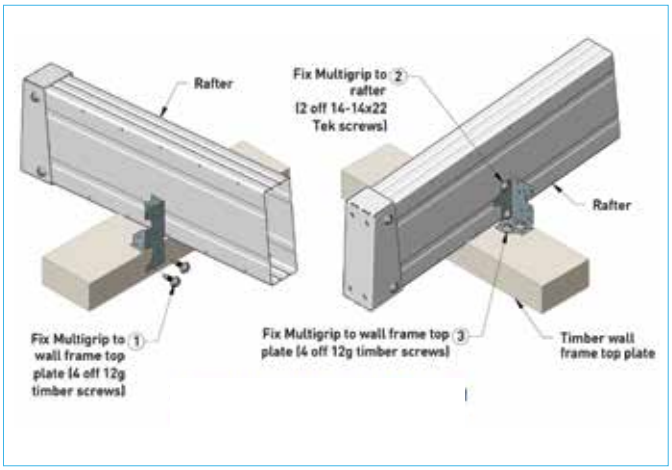


Table 27	MAXIMUM SINGLE SPAN (mm)			
BOXSPAN SECTION	3000	4000	5000	6000
	ROOF LOAD WIDTH – FLW (mm)			
B100-16	1855	1376	–	–
B150-16	2685	1917	–	–
B150-20	2922	2436	1828	1056
B150-24	3100	2639	2276	1508
B200-16	3237	2335	1331	–
B200-20	3545	2978	2250	1010
B250-20	4036	3326	1637	–
2/B100-16	2439	2032	1738	1349
2/B150-16	3359	2964	2437	1900
2/B150-20	3548	3163	2806	2465
2/B150-24	3707	3334	3018	2679
2/B200-16	3973	3616	2982	2347
2/B200-20	4186	3842	3488	3044
2/B250-20	4785	4472	4071	3739

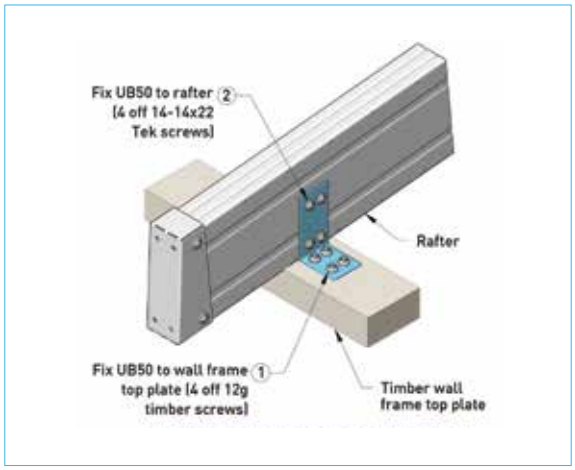
COMMON CONNECTIONS ROOF FRAMES AND LINTELS



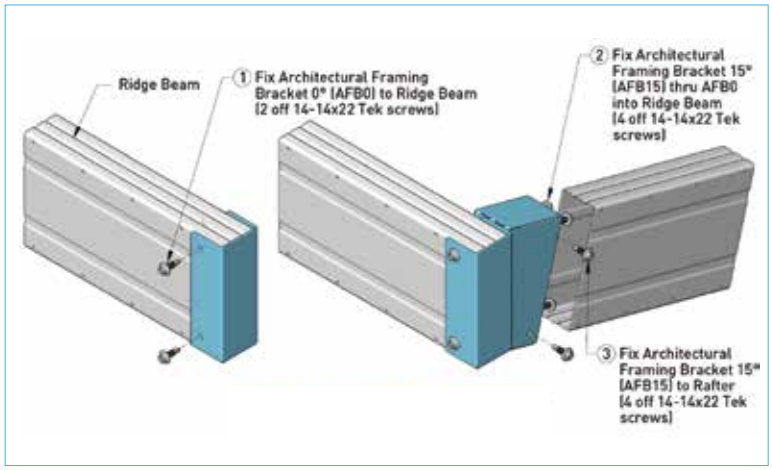
Rafter to Ridge and Headbeam connection



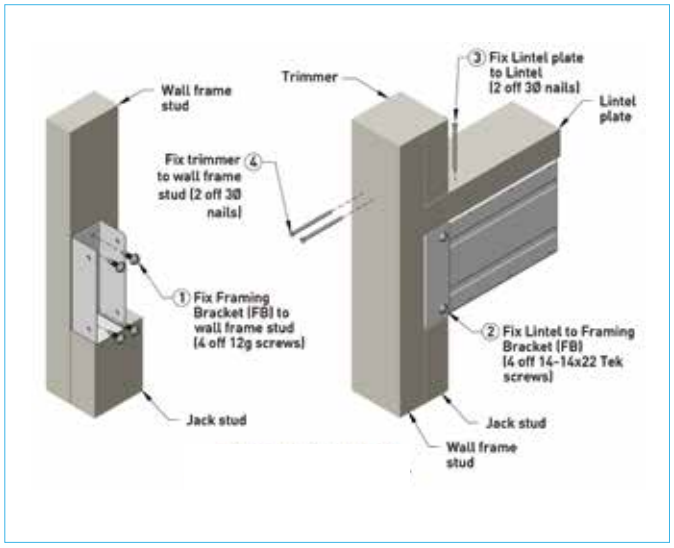
Rafter to Top Plate connection with multigrip or triplegrip



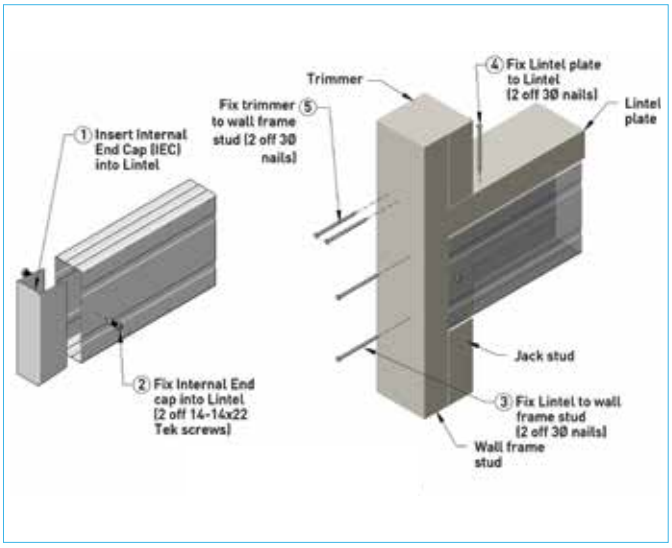
Rafter to Top Plate connection with UB50 bracket



Ridge beam and Rafter corner connection



Lintel connection with Framing Bracket



Lintel connection with Internal End Cap

CARPORTS & PERGOLAS

FOR ATTACHED AWNINGS AND VERANDAHS

Purlins

Rafters

Roof beams

FREESTANDING CARPORTS AND PERGOLAS

Purlins

Rafters

Roof beams

COMMON CONNECTIONS

Purlins

Supporting attached awnings and verandahs with sheet roof load to 20kg/m² only

- Wind Class: N3
- Live Load: 0.25kPa
- Dead Load: 0.2kPa
- First Support: Framing Bracket 4 Hole
- Mid Supports: Double UB50 or Triple Grip

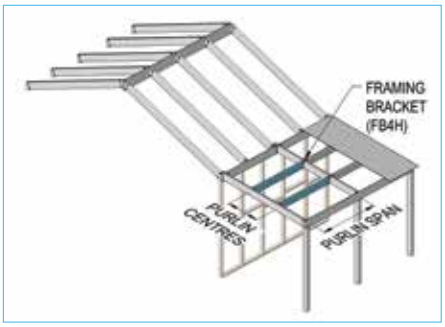


Table 28	MAXIMUM PURLIN SPAN (mm)															
BOXSPAN SECTION	600	900	1200	1800	2100	2400	2700	3000	600	900	1200	1800	2100	2400	2700	3000
	PURLIN CENTRES (mm)															
	SHEET ROOF & CEILING 20kg/m²															
	SINGLE SPAN								CONTINUOUS SPAN							
B100-12	4940	4647	4024	3286	3042	2845	2683	2545	4995	3846	3173	2392	2129	1863	1656	1490
B100-16	5667	5321	4835	4127	3821	3574	3370	3197	6647	5180	4315	3304	2975	2713	2498	2318
B150-16	8332	7270	6296	5141	4759	4452	4197	3982	7989	6180	5116	3880	3480	3162	2827	2544
B150-20	8958	7825	7110	6034	5586	5225	4927	4674	10221	8052	6767	5257	4763	4367	4042	3768
B150-24	9532	8327	7565	6609	6278	6004	5720	5426	12091	9586	8087	6320	5741	5277	4894	4572
B200-16	10276	8391	7266	5933	5493	5138	4844	4595	9152	7069	5845	4424	3965	3561	3166	2849
B200-20	11274	9848	8580	7005	6486	6067	5720	5426	11670	9160	7676	5934	5365	4910	4536	4222
B250-20	13508	11486	9947	8121	7519	7033	6631	6291	12726	9860	8175	6213	5578	5073	4623	4160

Purlins

Supporting attached awnings and verandahs with sheet roof & ceiling loads to 40kg/m² only

- Wind Class: N3
- Live Load: 0.25kPa
- Dead Load: 0.4Kpa
- First Support: Framing Bracket 4 Hole
- Mid Supports: Double UB50 or Triple Grip

Table 29	MAXIMUM PURLIN SPAN (mm)															
BOXSPAN SECTION	600	900	1200	1800	2100	2400	2700	3000	600	900	1200	1800	2100	2400	2700	3000
	PURLIN CENTRES (mm)															
	SHEET ROOF & CEILING 40kg/m²															
	SINGLE SPAN								CONTINUOUS SPAN							
B100-12	4117	3597	3268	2855	2712	2586	2438	2313	4422	3387	2782	2052	1759	1539	1368	1231
B100-16	4512	3941	3581	3128	2971	2842	2733	2638	5917	4590	3810	2901	2606	2371	2179	1977
B150-16	6171	5391	4898	4279	4064	3887	3738	3609	7088	5455	4498	3390	3002	2627	2335	2101
B150-20	6635	5796	5266	4600	4370	4180	4019	3880	8888	7178	6015	4651	4206	3849	3556	3310
B150-24	7060	6167	5603	4895	4650	4447	4276	4128	9457	8261	7207	5610	5087	4668	4323	4032
B200-16	7773	6790	6169	5389	4992	4670	4403	4177	8114	6235	5135	3861	3362	2942	2615	2354
B200-20	8350	7295	6627	5790	5500	5260	5058	4883	10422	8150	6808	5236	4725	4316	3980	3698
B250-20	10005	8740	7941	6937	6590	6303	5850	5265	11298	8712	7195	5434	4867	4296	3819	3437

Rafters

Supporting attached awnings and verandahs with sheet roof loads to 20 kg/m² only

- Wind Class: N3
- Live Load: 0.25kPa
- Dead Load: 0.2kPa
- First Support: Framing Bracket 4 Hole
- Mid Supports: Double UB50 or Triple Grip

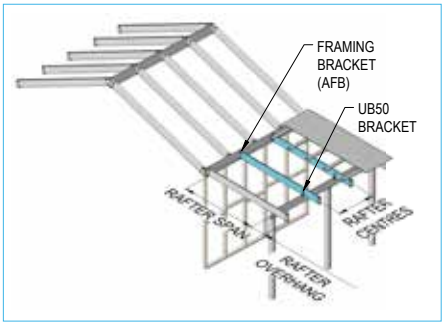


Table 30	ALLOWABLE RAFTER SPAN (mm)											
BOXSPAN SECTION	450	600	900	1200	1500	1800	450	600	900	1200	1500	1800
	SHEET ROOF LOAD 20kg/m²											
	NO OVER HANG											
	MAXIMUM SINGLE SPAN						MAXIMUM CONTINUOUS SPAN					
B100-12	3826	3826	3826	3826	3599	3286	4508	4508	3846	3173	2721	2392
B100-16	4389	4389	4389	4389	4389	4127	5171	5171	5171	4315	3730	3304
B150-16	7021	7021	7006	6296	5631	5141	8271	7989	6180	5116	4401	3880
B150-20	7827	7827	7398	6884	6511	6034	9221	9221	8052	6767	5896	5257
B150-24	8591	8577	7750	7212	6821	6517	10121	10121	9586	8087	7068	6320
B200-16	9906	9219	8330	7266	6499	5933	10929	9152	7069	5845	5023	4424
B200-20	10453	9728	8790	8180	7674	7005	13016	11670	9160	7676	6670	5934
B250-20	11971	11140	10066	9368	8860	8121	13999	12726	9860	8175	7040	6213
	500 mm OVER HANG											
B100-12	3124	3124	3124	3124	3124	3124	3607	3607	3607	3215	2770	2448
B100-16	3584	3584	3584	3584	3584	3584	4138	4138	4138	4138	3766	3344
B150-16	5733	5733	5733	5717	5317	5012	6620	6620	6201	5142	4431	3914
B150-20	6391	6391	6391	6137	5706	5377	7379	7379	7379	6787	5918	5282
B150-24	7014	7014	7014	6522	6063	5713	8100	8100	8100	8100	7087	6341
B200-16	8103	8103	7882	7170	6535	5972	9357	9167	7087	5868	5049	4454
B200-20	9023	9023	8462	7696	7151	6736	10419	10419	9175	7693	6690	5956
B250-20	11834	11154	10081	9204	8550	8051	13665	12736	9874	8191	7059	6235
	1000 mm OVER HANG											
B100-12	830	830	830	830	–	–	949	949	949	949	949	949
B100-16	1408	1408	1408	1408	1408	1408	1609	1609	1609	1609	1609	1609
B150-16	5162	5162	5162	5162	5162	5162	5900	5900	5900	5219	4521	4015
B150-20	6391	6391	6391	6324	5909	5595	7379	7379	7379	6844	5984	5356
B150-24	7014	7014	7014	6697	6253	5916	8100	8100	8100	8100	7141	6402
B200-16	8103	8103	8024	7327	6647	6094	9357	9210	7143	5936	5128	4544
B200-20	9023	9023	8592	7841	7309	6904	10419	10419	9217	7744	6749	6022
B250-20	11834	11194	10126	9323	8679	8189	13665	12767	9914	8240	7116	6299

Rafters

Supporting attached awnings and verandahs with sheet roof and ceiling loads to 40 kg/m² only

- Wind Class: N3
- Live Load: 0.25kPa
- Dead Load: 0.4kPa
- First Support: Framing Bracket 4 Hole
- Mid Supports: Double UB50 or Triple Grip

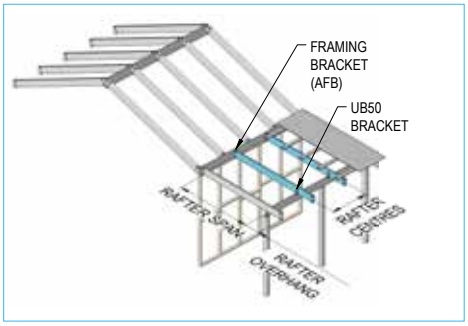


Table 31	ALLOWABLE RAFTER SPAN (mm)											
BOXSPAN SECTION	450	600	900	1200	1500	1800	450	600	900	1200	1500	1800
	SHEET ROOF LOAD 40kg/m²											
	NO OVER HANG											
	MAXIMUM SINGLE SPAN						MAXIMUM CONTINUOUS SPAN					
B100-12	3826	3826	3826	3550	3271	2986	4508	4422	3387	2782	2377	2052
B100-16	4389	4389	4100	3815	3608	3398	5171	5171	4590	3810	3284	2901
B150-16	6166	5738	5185	4825	4563	4360	7678	7088	5455	4498	3856	3390
B150-20	6511	6059	5475	5095	4818	4604	8106	7544	6817	6015	5228	4651
B150-24	6821	6348	5736	5338	5048	4823	8493	7903	7142	6646	6285	5610
B200-16	7331	6822	6165	5737	5426	5184	9128	8114	6235	5135	4397	3861
B200-20	7736	7199	6505	6054	5725	5470	9632	8964	8100	6808	5900	5236
B250-20	8860	8245	7450	6933	6557	6265	11031	10266	8712	7195	6176	5434
	500 mm OVER HANG											
B100-12	3124	3124	3124	3124	2951	2794	3607	3607	3426	2830	2433	2122
B100-16	3584	3584	3584	3437	3208	3034	4138	4138	4138	3845	3325	2947
B150-16	5733	5733	5078	4628	4309	4065	6620	6620	5479	4528	3891	3429
B150-20	6391	6083	5449	4964	4619	4357	7379	7379	6804	6037	5253	4679
B150-24	6843	6371	5762	5272	4905	4625	8100	7893	7130	6633	6189	5633
B200-16	7351	6844	6189	5763	5386	5077	9119	8130	6256	5161	4428	3896
B200-20	7755	7220	6528	6078	5751	5443	9624	8955	8089	6827	5923	5262
B250-20	8876	8263	7470	6954	6579	6288	11024	10258	8727	7213	6197	5459
	1000 mm OVER HANG											
B100-12	830	830	–	–	–	–	949	949	949	–	–	–
B100-16	1408	1408	1408	1408	1408	1408	1609	1609	1609	1609	1609	1609
B150-16	5162	5162	5162	4886	4589	4366	5900	5900	5551	4615	3993	3545
B150-20	6391	6158	5585	5202	4878	4634	7379	7379	6768	6101	5327	4763
B150-24	6909	6442	5841	5451	5147	4884	8100	7861	7095	6596	6232	5702
B200-16	7413	6911	6262	5842	5537	5300	9092	8179	6319	5238	4517	3999
B200-20	7814	7283	6598	6153	5830	5580	9598	8927	8059	6885	5989	5336
B250-20	8927	8317	7531	7020	6648	6361	11001	10233	8773	7269	6262	5533

Roof Beams

Supporting attached awnings and verandahs with sheet roof to 20kg/m² only

- Wind Class: N3
- Live Load: 0.25kPa
- Dead Load: 0.2kPa
- Supports: L Pier Head

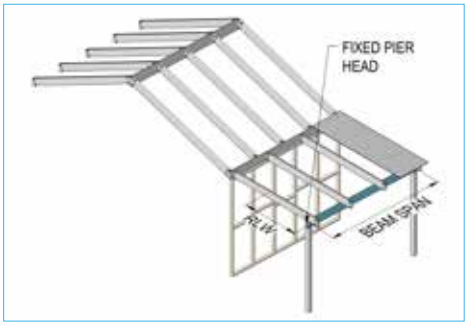


Table 32	MAXIMUM BEAM SPAN BETWEEN SUPPORTS (mm)													
BOXSPAN SECTION	900	1300	1500	2000	3000	4000	5000	900	1300	1500	2000	3000	4000	5000
	ROOF LOAD WIDTH RLW (mm)													
	SHEET ROOF 20kg/m²													
	SINGLE SPAN							CONTINUOUS SPAN						
B100-16	4389	4389	4389	3926	3224	2770	2490	5171	4733	4355	3683	2870	2399	2074
B150-16	7012	6057	5635	4889	3998	3454	3105	6992	5616	5148	4307	3324	2761	2367
B150-20	7403	6753	6517	5732	4676	4070	3621	8338	6725	6167	5174	4019	3327	2867
B150-24	7755	7075	6827	6354	5427	4702	4216	9653	7818	7183	6024	4671	3874	3339
B200-16	8335	6986	6502	5632	4596	3993	3559	8027	6440	5907	4940	3796	3147	2705
B200-20	8794	8023	7687	6653	5427	4702	4214	9510	7637	6992	5858	4519	3725	3206
B250-20	10070	9186	8864	7715	6290	5447	4879	10657	8504	7771	6458	4935	4047	3436

Roof Beams

Supporting attached awnings & verandahs with sheet roof and ceiling loads to 40kg/m² only

- Wind Class: N3
- Live Load: 0.25kPa
- Dead Load: 0.4kPa
- Supports: L Pier Head

Table 33	MAXIMUM BEAM SPAN BETWEEN SUPPORTS (mm)													
BOXSPAN SECTION	900	1300	1500	2000	3000	4000	5000	900	1300	1500	2000	3000	4000	5000
	ROOF LOAD WIDTH RLW (mm)													
	SHEET ROOF 40kg/m²													
	SINGLE SPAN							CONTINUOUS SPAN						
B100-16	4109	3750	3619	3297	2884	2527	2295	5110	4234	3890	3277	2545	2120	1856
B150-16	5193	4738	4572	4256	3620	3161	2804	6250	5009	4584	3816	2929	2414	2064
B150-20	5482	5002	4826	4493	4061	3680	3308	6821	5993	5497	4600	3551	2927	2514
B150-24	5742	5239	5056	4706	4254	3960	3746	7146	6519	6290	5355	4136	3411	2930
B200-16	6171	5630	5433	5057	4190	3617	3251	7168	5727	5239	4365	3344	2762	2358
B200-20	6511	5940	5732	5335	4822	4278	3824	8103	6798	6215	5178	3975	3270	2801
B250-20	7455	6801	6563	6108	5521	4963	4426	9279	7536	6877	5693	4318	3527	2843

Purlins

Supporting freestanding roofs including carports with sheet roof load to 20kg/m² only

- Wind Class: N3
- Live Load: 0.25kPa
- Dead Load: 0.2kPa
- First Support: Framing Bracket 4 Hole
- Mid Supports: Double UB50 or Triple Grip

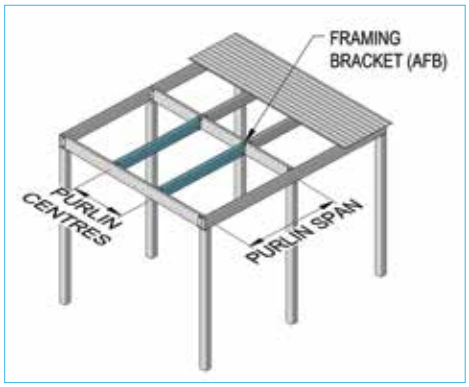


Table 34	MAXIMUM PURLIN SPAN (mm)															
BOXSPAN SECTION	600	900	1200	1800	2100	2400	2700	3000	600	900	1200	1800	2100	2400	2700	3000
	ROOF LOAD WIDTH RLW (mm)															
	SHEET ROOF 20kg/m²															
	SINGLE SPAN								CONTINUOUS SPAN							
B100-12	4940	4856	4213	3440	3185	2979	2809	2665	5292	4085	3376	2553	2288	2042	1815	1633
B100-16	5667	5321	4835	4223	4000	3742	3528	3347	6675	5485	4576	3513	3167	2891	2664	2474
B150-16	8332	7278	6592	5382	4983	4661	4395	4169	8456	6556	5438	4135	3714	3378	3098	2788
B150-20	8958	7825	7110	6211	5849	5471	5158	4893	10778	8504	7157	5571	5052	4636	4294	4006
B150-24	9532	8327	7565	6609	6278	6004	5773	5574	12663	10113	8541	6688	6080	5593	5190	4851
B200-16	10494	8785	7608	6212	5751	5379	5072	4811	9690	7501	6215	4718	4233	3848	3470	3123
B200-20	11274	9848	8948	7335	6790	6352	5989	5681	12315	9683	8125	6296	5698	5220	4826	4495
B250-20	13508	11800	10414	8503	7872	7364	6942	6586	13465	10456	8684	6619	5949	5416	4979	4561

Purlins

Supporting freestanding roofs including carports with sheet roof and celing loads to 40kg/m² only

- Wind Class: N3
- Live Load: 0.25kPa
- Dead Load: 0.4kPa
- First Support: Framing Bracket 4 Hole
- Mid Supports: Double UB50 or Triple Grip

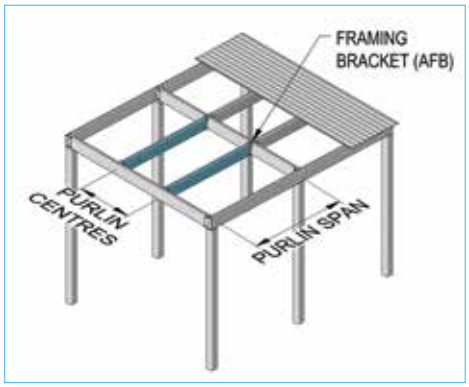


Table 35	MAXIMUM PURLIN SPAN (mm)															
BOXSPAN SECTION	600	900	1200	1800	2100	2400	2700	3000	600	900	1200	1800	2100	2400	2700	3000
	ROOF LOAD WIDTH RLW (mm)															
	SHEET ROOF 40kg/m²															
	SINGLE SPAN								CONTINUOUS SPAN							
B100-12	4195	3665	3330	2909	2763	2643	2532	2402	4641	3562	2931	2201	1896	1659	1474	1327
B100-16	4597	4016	3649	3187	3028	2896	2784	2688	6158	4815	4003	3054	2747	2501	2300	2131
B150-16	6288	5493	4991	4360	4141	3961	3808	3677	7432	5731	4734	3576	3203	2832	2517	2266
B150-20	6760	5906	5366	4687	4452	4259	4095	3953	9056	7512	6302	4882	4418	4047	3741	3485
B150-24	7193	6284	5709	4987	4738	4531	4357	4206	9636	8417	7543	5881	5337	4900	4541	4238
B200-16	7920	6918	6286	5491	5184	4849	4571	4337	8510	6553	5405	4075	3625	3172	2819	2537
B200-20	8508	7432	6753	5899	5604	5360	5153	4975	10899	8536	7139	5502	4969	4542	4192	3898
B250-20	10194	8905	8091	7068	6714	6422	6174	5677	11843	9150	7568	5731	5137	4632	4117	3705

Rafters

Supporting freestanding roofs including carports with sheet roof load to 20kg/m² only

- Wind Class: N3
- Live Load: 0.25kPa
- Dead Load: 0.2kPa
- First Support: Framing Bracket 4 Hole
- Mid Supports: Double UB50 or Triple Grip

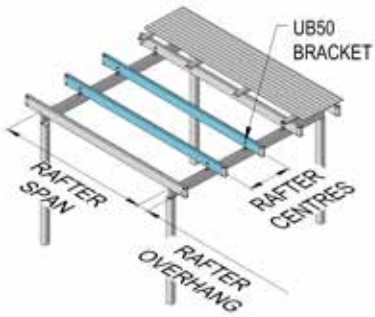


Table 36	ALLOWABLE RAFTER SPAN (mm)											
BOXSPAN SECTION	450	600	900	1200	1500	1800	450	600	900	1200	1500	1800
	RAFTER SPACING (mm)											
	SHEET ROOF LOAD 20kg/m²											
	NO OVER HANG											
	MAXIMUM SINGLE SPAN						MAXIMUM CONTINUOUS SPAN					
B100-12	3826	3826	3826	3826	3768	3440	4508	4508	4085	3376	2900	2553
B100-16	4389	4389	4389	4389	4389	4223	5171	5171	5171	4576	3962	3513
B150-16	7021	7021	7006	6520	5896	5382	8271	8271	6556	5438	4684	4135
B150-20	7827	7827	7398	6884	6511	6211	9221	9221	8504	7157	6242	5571
B150-24	8591	8577	7750	7212	6821	6517	10121	10121	9650	8541	7473	6688
B200-16	9906	9219	8330	7608	6804	6212	11555	9690	7501	6215	5349	4718
B200-20	10453	9728	8790	8180	7736	7335	13016	12112	9683	8125	7070	6296
B250-20	11971	11140	10066	9368	8860	8465	13999	13465	10456	8684	7490	6619
	500 mm OVER HANG											
B100-12	3124	3124	3124	3124	3124	3124	3607	3607	3607	3415	2946	2606
B100-16	3584	3584	3584	3584	3584	3584	4138	4138	4138	4138	3996	3551
B150-16	5733	5733	5733	5717	5317	5012	6620	6620	6576	5462	4713	4168
B150-20	6391	6391	6391	6137	5706	5377	7379	7379	7379	7175	6263	5594
B150-24	7014	7014	7014	6522	6063	5713	8100	8100	8100	8100	7490	6707
B200-16	8103	8103	7882	7170	6664	6249	9357	9357	7519	6236	5374	4746
B200-20	9023	9023	8462	7696	7151	6736	10419	10419	9697	8142	7088	6317
B250-20	11834	11154	10081	9204	8550	8051	3665	13474	10468	8700	7508	6639
	1000 mm OVER HANG											
B100-12	830	830	830	830	–	–	949	949	949	949	949	949
B100-16	1408	1408	1408	1408	1408	1408	1609	1609	1609	1609	1609	1609
B150-16	5162	5162	5162	5162	5162	5162	5900	5900	5900	5534	4797	4263
B150-20	6391	6391	6391	6324	5909	5595	7379	7379	7379	7229	6325	5664
B150-24	7014	7014	7014	6697	6253	5916	8100	8100	8100	8100	7542	6765
B200-16	8103	8103	8024	7327	6834	6366	9357	9357	7571	6300	5448	4830
B200-20	9023	9023	8592	7841	7309	6904	10419	10419	9737	8190	7144	6379
B250-20	11834	11194	10126	9323	8679	8189	13665	13503	10506	8745	7561	6699

Rafters

Supporting freestanding roofs including carports with sheet roof and ceiling loads to 40kg/m² only

- Wind Class: N3
- Live Load: 0.25kPa
- Dead Load: 0.4kPa
- First Support: Framing Bracket 4 Hole
- Mid Supports: Double UB50 or Triple Grip

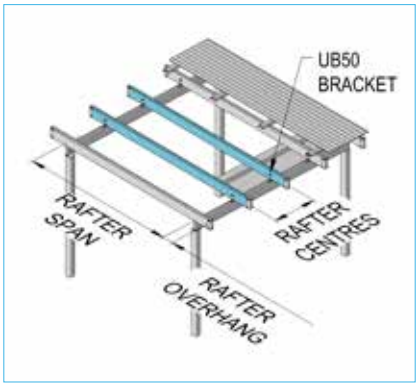


Table 37	ALLOWABLE RAFTER SPAN (mm)											
BOXSPAN SECTION	450	600	900	1200	1500	1800	450	600	900	1200	1500	1800
	RAFTER SPACING (mm)											
	SHEET ROOF & CELING LOAD 40kg/m²											
	NO OVER HANG											
	MAXIMUM SINGLE SPAN						MAXIMUM CONTINUOUS SPAN					
B100-12	3826	3826	3826	3550	3295	3101	4508	4508	3562	2931	2508	2201
B100-16	4389	4389	4100	3815	3608	3398	5171	5171	4815	4003	3454	3054
B150-16	6166	5738	5185	4825	4563	4360	7678	7145	5731	4734	4064	3576
B150-20	6511	6059	5475	5095	4818	4604	8106	7544	6817	6302	5483	4882
B150-24	6821	6348	5736	5338	5048	4823	8493	7903	7142	6646	6285	5881
B200-16	7331	6822	6165	5737	5426	5184	9128	8495	6553	5405	4635	4075
B200-20	7736	7199	6505	6054	5725	5470	9632	8964	8100	7139	6194	5502
B250-20	8860	8245	7450	6933	6557	6265	11031	10266	9150	7568	6505	5731
	500 mm OVER HANG											
B100-12	3124	3124	3124	3124	2951	2794	3607	3607	3599	2976	2561	2262
B100-16	3584	3584	3584	3437	3208	3034	4138	4138	4138	4035	3493	3098
B150-16	5733	5733	5078	4628	4309	4065	6620	6620	5754	4762	4097	3614
B150-20	6391	6083	5449	4964	4619	4357	7379	7379	6804	6263	5507	4909
B150-24	6843	6371	5762	5272	4905	4625	8100	7893	7130	6633	6189	5837
B200-16	7351	6844	6189	5763	5386	5077	9119	8485	6573	5430	4664	4108
B200-20	7755	7220	6528	6078	5751	5443	9624	8955	8089	7157	6215	5526
B250-20	8876	8263	7470	6954	6579	6288	11024	10258	9164	7586	6525	5754
	1000 mm OVER HANG											
B100-12	830	830	–	–	–	–	949	949	949	–	–	–
B100-16	1408	1408	1408	1408	1408	1408	1609	1609	1609	1609	1609	1609
B150-16	5162	5162	5162	4886	4589	4366	5900	5900	5823	4845	4193	3723
B150-20	6391	6158	5585	5202	4878	4634	7379	7379	6768	6291	5578	4989
B150-24	6909	6442	5841	5451	5147	4884	8100	7861	7095	6596	6232	5950
B200-16	7413	6911	6262	5842	5537	5300	9092	8456	6633	5503	4749	4205
B200-20	7814	7283	6598	6153	5830	5580	9598	8927	8059	7212	6279	5598
B250-20	8927	8317	7531	7020	6648	6361	11001	10233	9207	7639	6587	5824

Roof Beams

Supporting attached freestanding roofs including carports with sheet roof load to 20 kg/m² only

- Wind Class: N3
- Live Load: 0.25kPa
- Dead Load: 0.2kPa
- Supports: L Pier Head

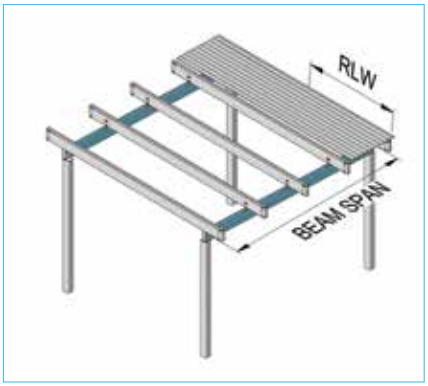


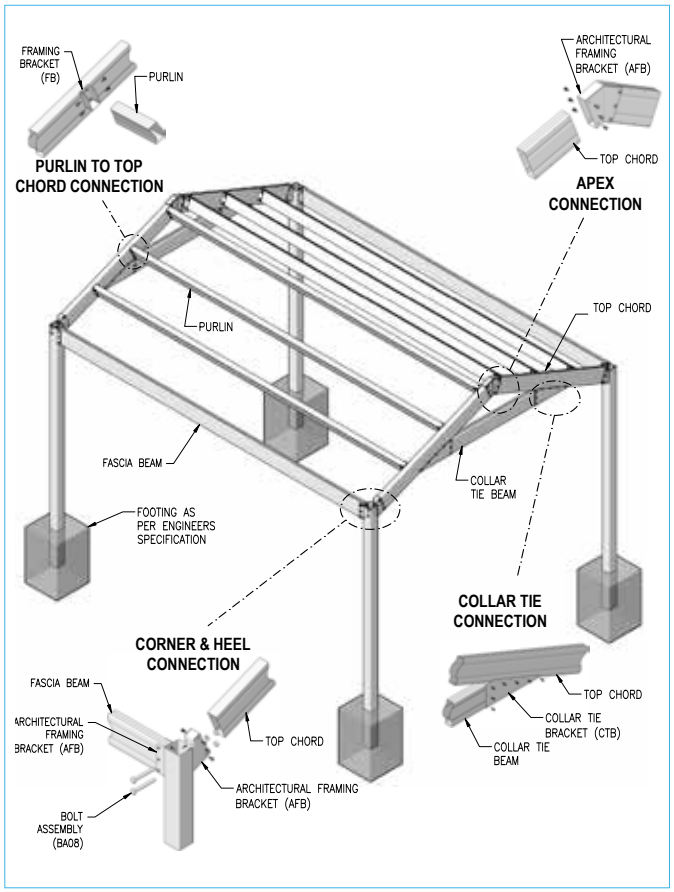
Table 38	MAXIMUM BEAM SPAN BETWEEN SUPPORTS (mm)													
BOXSPAN SECTION	900	1300	1500	2000	3000	4000	5000	900	1300	1500	2000	3000	4000	5000
	ROOF LOAD WIDTH RLW (mm)													
	SHEET ROOF 20kg/m²													
	SINGLE SPAN							CONTINUOUS SPAN						
B100-16	4389	4389	4389	4091	3360	2904	2598	5171	5004	4602	3878	3038	2537	2218
B150-16	7012	6334	5912	5117	4185	3611	3252	7380	5942	5455	4572	3533	2920	2511
B150-20	7403	6753	6517	6003	4907	4249	3794	8793	7096	6515	5482	4252	3539	3051
B150-24	7755	7075	6827	6354	5583	4936	4403	9653	8256	7585	6379	4964	4124	3560
B200-16	8335	7310	6818	5909	4819	4180	3728	8472	6813	6244	5223	4043	3333	2865
B200-20	8794	8023	7741	6964	5687	4935	4402	10033	8070	7396	6196	4784	3961	3401
B250-20	10070	9186	8864	8067	6590	5708	5107	11269	9007	8233	6857	5244	4304	3684

Roof Beams

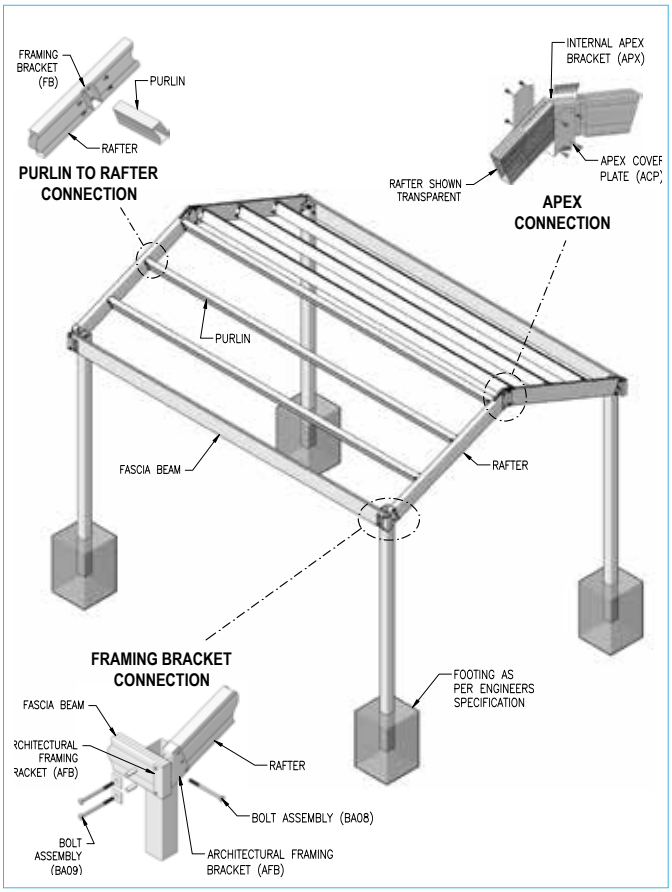
Supporting attached freestanding roofs including carports with sheet roof and ceiling loads to 40 kg/m² only

- Wind Class: N3
- Live Load: 0.25kPa
- Dead Load: 0.4kPa
- Supports: L Pier Head

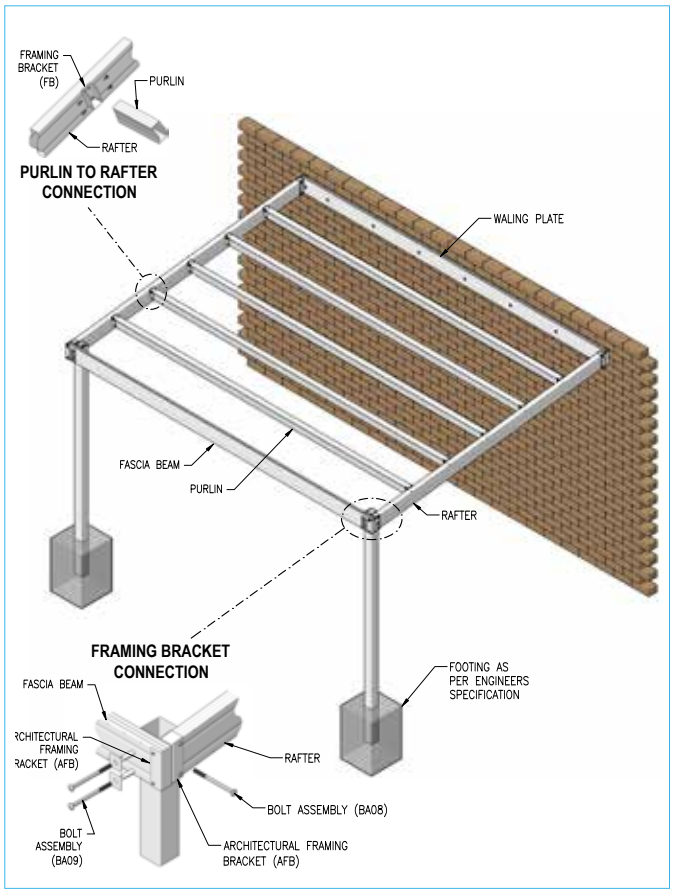
Table 39	MAXIMUM BEAM SPAN BETWEEN SUPPORTS (mm)													
BOXSPAN SECTION	900	1300	1500	2000	3000	4000	5000	900	1300	1500	2000	3000	4000	5000
	ROOF LOAD WIDTH RLW (mm)													
	SHEET ROOF 40kg/m²													
	SINGLE SPAN							CONTINUOUS SPAN						
B100-16	4109	3750	3619	3297	2884	2617	2367	5110	4430	4083	3424	2686	2246	1932
B150-16	5193	4738	4572	4256	3760	3274	2916	6461	5235	4794	4013	3087	2539	2186
B150-20	5482	5002	4826	4493	4061	3781	3424	6821	6222	5751	4816	3726	3086	2659
B150-24	5742	5239	5056	4706	4254	3960	3746	7146	6519	6290	5607	4334	3602	3094
B200-16	6171	5630	5433	5057	4341	3758	3366	7491	6000	5496	4587	3520	2894	2477
B200-20	6511	5940	5732	5335	4822	4436	3979	8103	7113	6510	5444	4178	3438	2944
B250-20	7455	6801	6563	6108	5521	5139	4597	9279	7903	7224	5986	4559	3722	3063



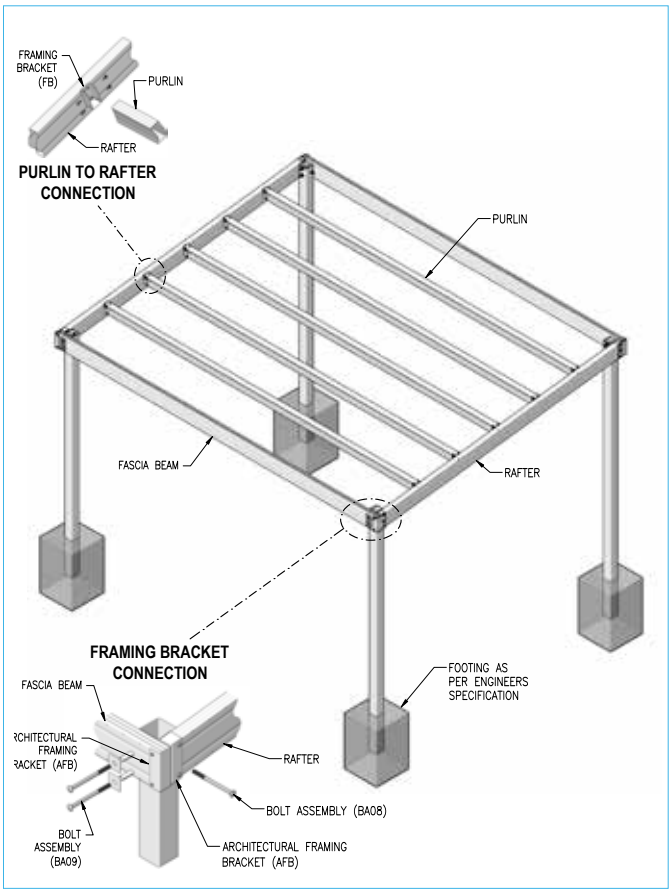
Collar Tie Frame: post flush with fascia beam



Rafter Frame: post flush in to fascia beam



Skillion: Post set in to fascia beam



Skillion: Post set in to fascia beam

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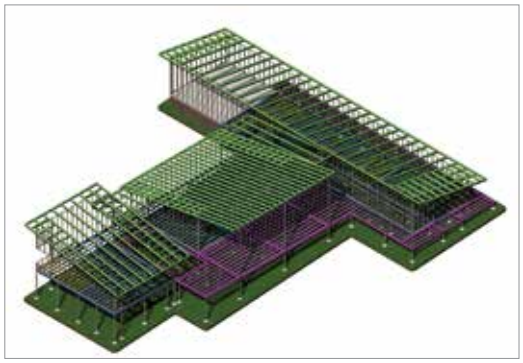

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