

Engineering and Construction Manual

Patios | Carports | Roofing | Decks | Floors

May 2026



About

At Ausdeck Building Systems our part is the solution. We're one of Australia's leading manufacturers and suppliers of products for the residential and commercial building industry.

We specialise in providing complete building systems, including patios and carports, sheds, roofing and modular structures. We also offer traditional building products like roofing and walling, light-gauge structural steel, rainwater goods, expanded polystyrene products and more.

As a proud, 100% Australian-owned manufacturer, we design, engineer and make almost all our products in-house, employing over 170 people across manufacturing facilities in Qld and NSW.

With over 20 years of experience in the roll-forming and sheet metal industry, we've earned a reputation for delivering high-quality products at affordable prices, with responsive lead times and exceptional customer service.

We have achieved this through manufacturing excellence and assembling an experienced team that understand our customers and the industries we serve.

Ausdeck products are tested and certified to meet the most stringent Australian standards and withstand the harshest climatic conditions. These are just some of the reasons why we're trusted by many of Australia's largest dealers, resellers, and builders to deliver tailored solutions to meet their project needs.

Why choose Ausdeck



Australian-owned and manufactured

We manufacture almost all of our products in-house with quality materials for dependable, consistent results every time.



Complete product range

Our complete range of building products means you don't need to source products from multiple suppliers to finish your project, saving you time and effort.



Well-designed products

We pride ourselves on supplying and manufacturing well-designed building products that thrive in Australian conditions, ensuring lasting value for our clients.



Tailored solutions

Leveraging our expansive manufacturing capabilities, we tailor solutions to match your distinct needs, cultivating a competitive edge for our clients through enhanced time and cost efficiencies.



Responsive lead times

We guarantee responsive lead times on our products, so you can complete your project on time and on budget.



20+ years of experience

With a history spanning two decades of managing both small and large building projects, we promise you streamlined execution and timely delivery.

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Document Control

Version	V13.00.00
Date	May 2026
Document	Engineering and Construction Manual
Certified by	Summermore Pty Ltd

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Business Overview



Vision

Our vision is to build Australian lifestyles together.

Core Values

Innovation

We foster a culture of creativity, continuous improvement, and forward-thinking to drive positive change in our roles and stay ahead of the market.

01

Accountability

We take responsibility for our actions, decisions, and their outcomes, and consistently strive to meet our commitments and obligations.

02

Collaboration

We work together seamlessly to leverage diverse perspectives, skills, and ideas toward shared goals and success.

03

Trust

We are transparent and dependable in our interactions, both internally and externally, and cultivate a foundation of confidence and integrity.

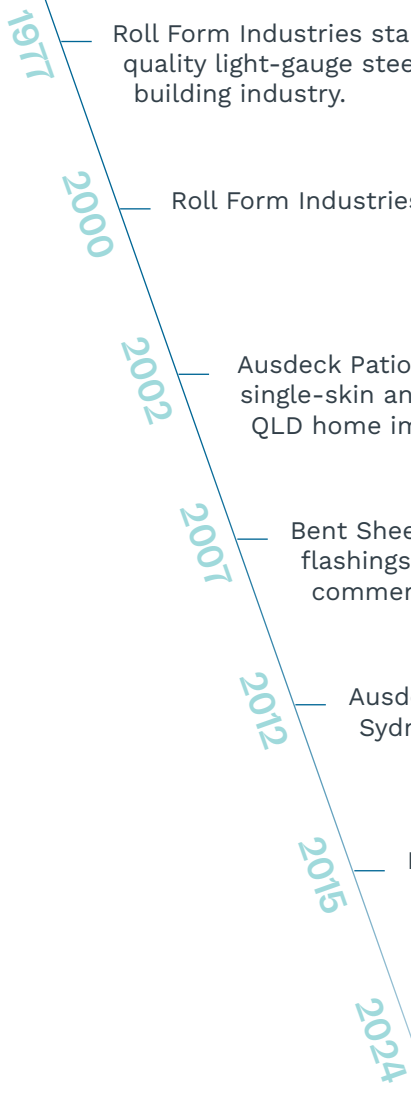
04

Safety

We foster a culture where safety is everyone's responsibility, and where our people feel empowered to speak up, act responsibly, and look out for one another.

05

Our History

- 
- 1977 — Roll Form Industries started operations, manufacturing quality light-gauge steel products to service the building industry.
 - 2000 — Roll Form Industries was acquired by the Ausdeck Group.
 - 2002 — Ausdeck Patios and Roofing QLD was formed to manufacture single-skin and insulated roofing products to the South-East QLD home improvement market.
 - 2007 — Bent Sheetmetal was incorporated to manufacture quality flashings and rainwater goods to the residential and commercial building industry.
 - 2012 — Ausdeck Patios & Roofing NSW was formed to service the Sydney market with home improvement products.
 - 2015 — Fusion EPS was formed to manufacture insulated core material to Ausdeck Patios and Roofing and other roofing and walling manufacturers.
 - 2024 — The Ausdeck Group of companies rebrand to “Ausdeck Building Systems” to align their 4 brands with their overarching vision and capabilities.

Business Overview



Our Locations

Ausdeck manufactures building products in facilities across Queensland and New South Wales. These include roofing and walling, rainwater products, light-gauge structural steel, and expanded polystyrene products.

QLD Head Office

56-72 Bandara Street, Richlands
QLD 4077
1300 287 332

NSW Head Office

Unit 3, 34-38 Anzac Avenue,
Smeaton Grange NSW 2567
1300 287 332

Notes

QLD branch supplies south to Coffs Harbour,
NSW branch supplies north to Coffs Harbour.



Referenced Standards

All information in this manual has been designed in accordance with the following Australian and New Zealand Standards:

- National Construction Code of Australia 2022
- Specification S4C2—Design of Building in Cyclonic Areas NCC2022 VOL 1, Amdt 2
- Part H1D7 Sheet Roofing of NCC 2022 Vol 2, Amdt 2
- AS 1163:1991 Structural Steel Hollow Sections
- 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/NZS 1170.3:2003 Design Actions Part 3—Snow and Ice Actions
- AS/NZS 1554.1:2004 Structural Steel Welding—Welding of Steel Structures
- AS1562.1: 2018 Design and Installation of Sheet Roof and Wall Cladding Part 1: Metal
- AS/NZS 1664.1:1997 Aluminium Structures—Limit State Design
- AS 1684.2:2021 Residential Timber Framed Construction
- AS 3566.1:2002 Self Drilling Screws
- AS 3600:2018 Concrete Structures
- AS 4055:2021 Wind Loads for Housing
- AS 4100:2020 Steel Structures Code
- AS/NZS 4600:2018 Cold Formed Steel Structures

General Notes

1. This manual has been prepared to suit a range of attached, freestanding and flyover patios and carports using structural sections, components and roofing designed and manufactured by Ausdeck.
2. All installation and connection details should be in accordance with the standard Ausdeck details contained in this manual.
3. Minimum recommended Roof Pitches are as follows:
V-Line Single-Skin Roofing—2 Degrees,
Corrugated Insulated Roofing—5 Degrees
Ribbed Insulated Roofing—2 Degrees.
4. It is the responsibility of the installer to check that the existing structure to which a patio or carport is being attached has sufficient strength for the additional loads. In some cases, it may be advisable to engage a structural engineer to determine the suitability of the existing structure or concrete.
5. Insulated and Single-Skin Patios/Carports are considered non-trafficable. Insulated Roofing is designed to support a concentrated load of up to 140 kg per square meter, which includes the weight of a person walking on the roof for maintenance purposes only. However, Single-Skin roofing is not engineered to support a concentrated load. It is recommended to display a non-trafficable sign on the structure.
6. A patio or carport is deemed to be freestanding unless it is attached to an existing structure for at least 50% of its shortest side.
7. Flat roofs attached to either one or both sides of a gable system should be treated as individual freestanding structures.
8. Footing design as nominated by the Footing Capacity calculator (page 66) are to be installed in natural soil. Concrete to have a minimum strength of 20kPa. It is recommended to fix to a concrete slab with a minimum thickness of 100mm and 20Mpa.
9. Slab and footing designs are based upon a site classification “M” Class. Site conditions to be confirmed prior to commencement of construction.
10. Footings shall be founded in stiff natural material with a minimum allowable bearing capacity of 100kPa. Where unsuitable material is encountered, a geotechnical engineer shall be consulted.
11. The cost of the geotechnical investigation and inspections shall be borne by the builder.



Windspeed

Basic Design Parameters—Wind Regions

Geographic Regions

Regions are marked with the letters A (AO to A5), B (B1 to B2), C and D. Coastal region boundaries are smooth lines set in from a smoothed coastline by 50, 100, 150 and 200 km. Islands within 50 km of the coast are designated in the same region as the adjacent coast.



Terrain Category

TC 3	Numerous closely spaced house sized obstructions. Normally houses or substantial trees. Density of buildings or substantial trees greater than 10 per hectare. Usually normal suburbia.
TC 2.5	Spaced trees, sugar cane, long grass, isolated structures or outer suburbia. Density of buildings or substantial trees up to 10 per hectare.
TC 2	Coastal areas or isolated trees, grass fields, airports or generally flat land. Any density of buildings or substantial trees.
TC 1	Exposed or open terrain with few or no obstructions. Flat, treeless, poorly grassed plains of at least 10 km in width.

Topographical Factors

Average Site Slope	Site Location on the Slope		
	Lower Third	Middle Third	Upper Third
Less than 1 in 10	T1	T1	T1
Between 1 in 10 and 1 in 7.5	T1	T1	T2
Between 1 in 7.5 and 1 in 5	T1	T1	T3
Between 1 in 5 and 1 in 3	T1	T2	T4
Greater than 1 in 3	T1	T3	T5

Shielding Classification

Fully Shielded (FS)	10 buildings (or substantial trees in regions A and B) per hectare, all to be built within 5 years.
Partial Shielding (PS)	2.5 buildings (or substantial trees in regions A and B) per hectare. Acreage development, all new or to be built within 5 years.
No Shielding (NS)	Only occurs when shielding is less than that of partial shielding.

Wind Regions

Geographic Region	Terrain Category	Topographic Classification														
		T1			T2			T3			T4			T5		
		FS	PS	NS	FS	PS	NS	FS	PS	NS	FS	PS	NS	FS	PS	NS
A (A0-A5)	TC 3	N1	N1	N2	N1	N2	N2	N2	N3	N3	N1	N3	N3	N3	N4	N4
	TC 2.5	N1	N2	N2	N2	N3	N3	N2	N3	N3	N3	N4	N4	N3	N4	N4
	TC 2	N2	N2	N3	N3	N3	N3	N3	N3	N4	N3	N4	N4	N4	N5	N5
	TC 1	N3	N3	N3	N3	N4	N4	N4	N4	N4	N4	N5	N5	N5	N5	N6
B (B1-B2)	TC 3	N2	N2	N3	N2	N3	N3	N3	N3	N4	N3	N4	N4	N4	N4	N5
	TC 2.5	N2	N3	N3	N3	N3	N4	N3	N4	N4	N4	N4	N5	N4	N5	N5
	TC 2	N3	N3	N3	N3	N4	N4	N4	N4	N5	N4	N5	N5	N5	N5	N6
	TC 1	N3	N4	N4	N4	N5	N5	N4	N5	N5	N5	N6	N6	N6	N6	–
C	TC 3	C1	C1	C2	C2	C2	C2	C2	C2	C3	C3	C3	C3	C3	C4	C4
	TC 2.5	C1	C2	C2	C2	C2	C3	C2	C3	C3	C3	C4	C4	C3	C4	C4
	TC 2	C2	C2	C2	C2	C3	C3	C3	C3	C4	C3	C4	C4	C4	–	–
	TC 1	C2	C2	C2	C2	C3	C3	C3	C3	C4	C3	C4	C4	C4	–	–
D	TC 3	C2	C2	C3	C2	C3	C3	C3	C4	C4	C4	C4	–	C4	–	–
	TC 2.5	C2	C3	C3	C3	C3	C4	C3	C4	C4	C4	–	–	–	–	–
	TC 2	C3	C3	C3	C3	C4	C4	C4	–	–	–	–	–	–	–	–
	TC 1	C3	C3	C3	C3	C4	C4	C4	–	–	–	–	–	–	–	–

Wind Pressure

Wind Category	N1	N2	N3	N4	C1	C2	C3	C4
Applicable Pz	0.69	0.96	1.50	2.23	1.50	2.23	3.29	4.44

Applicable Coefficients (Cp,n)

Building Description	Flat		Gable	
	Patios	Carports	Patios	Carports
Wall to One Side	0.5* / 0.7	1.0	1.0	1.0
Wall to Two Sides	1.0	1.0	1.0	1.0
Wall to Three Sides	1.2	1.2	1.2	1.2
Enclosed—Non Cyclonic	1.1	1.1	1.1	1.1
Enclosed—Cyclonic	1.6	1.6	1.6	1.6
Open Four Sides	0.7	1.0	1.0	1.2

Coefficients—Ultimate Values (kPa)

Wind Class	Pz	Coefficients					
		0.5	0.7	1.0	1.1	1.2	1.6
N1	0.69	0.35	0.48	0.69	0.76	0.83	—
N2	0.96	0.48	0.67	0.96	1.06	1.15	—
N3	1.50	0.75	1.05	1.50	1.65	1.80	—
N4	2.23	1.12	1.56	2.23	2.45	2.68	—
C1	1.50	0.75	1.05	1.50	—	1.80	2.40
C2	2.23	1.12	1.56	2.23	—	2.68	3.57
C3	3.29	1.65	2.30	3.29	—	3.95	5.26

Notes The following conditions apply to a Cp,n of 0.5:

1. Attached flat patios only with a roof pitch of <6 degrees. (Flyover structures and freestanding structures excluded)
2. A maximum of 1 enclosed side
3. The mid height of the existing roof must be a minimum of 1.5 times the patio height
4. Patios must be a minimum of 2.5 metres wide
5. Site address must be in Terrain Category 3, fully shielded and with a topographical factor of 1.0
6. Structures that don't meet the above criteria should be classed as 0.7 Cp,n

Snow Loads

Ausdeck structures in the following locations that require snow loading shall be determined in accordance with the following table.

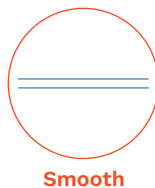
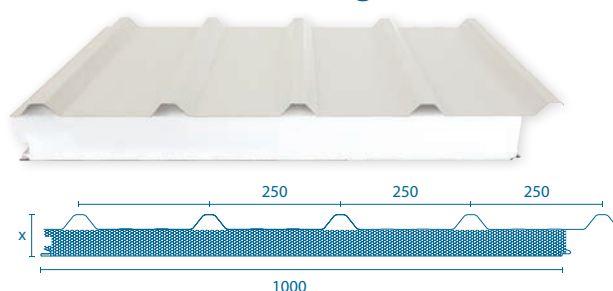
Location	Elevation	Ground Snow Load k100=1.4, k1 = 0.7 (kPa)	Multiplier Factor for Roof Sheet Spans, Beam Spans, Beam Spacings and Post Spacings per Wind Region		
			N2	N3	N4
Kanimbla Valley	650	0.61	0.87	1.00	1.00
Hartley Historic Village	790	0.99	0.78	0.94	1.00
Little Hartley	800	1.02	0.77	0.93	0.99
Capertree	800	1.02	0.77	0.93	0.99
Tarana	830	1.10	0.75	0.90	0.98
Orange	870	1.21	0.73	0.87	0.96
Cullen Bullen	900	1.29	0.72	0.85	0.94
Lithgow	920	1.35	0.71	0.83	0.93
Wallerawang	920	1.35	0.71	0.83	0.93
Portland	930	1.38	0.70	0.82	0.92
Rydal	980	1.51	0.68	0.79	0.90
Hampton	1000	1.57	0.67	0.78	0.89
Katoomba	1020	1.62	0.66	0.77	0.88
Blackheath	1070	1.76	0.64	0.75	0.86
Clarence	1100	1.84	0.63	0.74	0.85
Mount Lambie	1100	1.84	0.63	0.74	0.85
Bathurst	1200	2.12	0.58	0.68	0.77

Notes Roof sheet overhangs shall not exceed 300mm in snow regions. Minimum roof sheet pitch to be 2 degrees in snow regions.

Insulated Roofing Spans

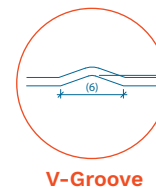
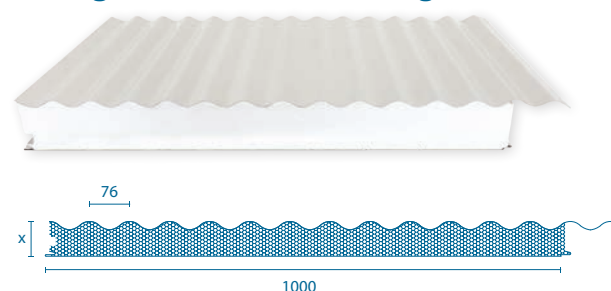
Profiles

Ribbed Insulated Roofing



Smooth

Corrugated Insulated Roofing



V-Groove

Specifications

Panel Size (mm)	50	75	100	125	150	175	200
Ribbed Overall Thickness (mm)	78	103	128	153	178	203	228
Corrugated Overall Thickness (mm)	66	91	116	141	166	191	216
Panel Coverage (mm)	1000						
Min. Length (m)	Cut to length. 1.8						
Roof Profile and Material	Ribbed or Corrugated: 0.42 / AZ150 G550						
Ceiling Profile and Material	Smooth/V-Groove: 0.60 / AZ150 G300						
Ceiling Combinations	Ribbed/Smooth, Ribbed/V-Groove, Corrugated/Smooth						
Roof and Ceiling Finish	Roof: 25% Gloss, Ceiling: 25% Gloss						
Paint System	AS/NZS 2728 and AS 1397						
Min. Roof Pitch (o)	Ribbed: 2° (35mm / metre) or 1° limited length, Corrugated 5° (87mm / metre)						
Core Material	SL Grade Polystyrene—Fire-Retardant						
Adhesive	Thermosetting two-part polyurethane CFC free						

Notes Deflection limit of span 1/150 applies, and in accordance with Serviceability Limit State criteria per AS1170.0 - TABLE C1. Insulated Patios/Carports are considered non-trafficable. However, Insulated Roofing is designed to support a concentrated load of up to 140 kg per square meter per AS/NZS 1170.1:2001, which includes the weight of a person walking on the roof for maintenance purposes only. It is recommended to display a non-trafficable sign on the structure. Self-weight of the panel has been allowed for, plus an allowance of max 25kg/m² uniformly distributed dead loads. (e.g. lights, fans, solar panels, etc.). Distributed live load of 0.25kPa as per AS/NZS 1170.1:2001 has been allowed for. X related to Overall Thickness of the panel.

Ribbed

Panel Size (mm)	50	75	100	125	150	175	200
R Value 8°C m²KW	1.61	2.26	2.66	3.25	3.94	–	–
R Value 20°C m²KW	1.59	2.22	2.59	3.17	3.75	–	–
Panel Weight (kg/m²)	10.58	10.94	11.37	11.8	12.23	12.66	13.09

Corrugated

Panel Size (mm)	50	75	100	125	150	175	200
R Value 8°C m²KW	1.61	2.26	2.66	3.25	3.94	–	–
R Value 20°C m²KW	1.59	2.22	2.59	3.17	3.75	–	–
Panel Weight (kg/m²)	10.85	11.21	11.65	12.08	12.51	12.94	13.37

Early Fire Hazard Properties

Ribbed Insulated Roofing–AS 1530.3–EPS-FR Panel

Index	Test Range	External Top Skin	Exposed Core
Ignitability	0–20	0	12
Spread of Flame	0–10	0	9
Heat Evolved	0–10	0	7
Smoke Developed	0–10	1	7

Corrugated Insulated Roofing–AS 1530.3–EPS-FR Panel

Index	Test Range	External Top Skin	Exposed Core
Ignitability	0–20	0	12
Spread of Flame	0–10	0	9
Heat Evolved	0–10	0	7
Smoke Developed	0–10	1	7

Span Table

Wind Class	Panel Size	Wall to One Side (mm) 0.5/0.7 Cp,n	Walls to Two Sides (mm) 1.0 Cp,n	Walls to Three Sides (mm) 1.2 Cp,n	Enclosed (mm) 1.1-1.6 Cp,n	Open Four Sides (mm) 0.7 Cp,n	Open Four Sides (mm) 1.0 Cp,n	Overhang (mm)
N1	50	5300	5300	4700	5400	5300	5300	900
	75	7100	7000	5300	6500	7100	7000	900
	100	7800	7100	6100	7000	7800	7100	1200
	125	8800	8300	6700	7800	8800	8300	1500
	150	9600	8700	7500	8500	9600	8700	1800
	175	10,000	9100	8200	8900	10,000	9100	1800
	200	10,400	9500	8600	9300	10,400	9500	1800
N2	50	5000	4800	4200	4800	5000	4800	900
	75	6500	6100	5100	5900	6500	6100	900
	100	7000	6300	5400	6200	7000	6300	1200
	125	7800	7200	6000	6900	7800	7200	1500
	150	8600	7800	6600	7600	8600	7800	1800
	175	9300	8500	7300	8200	9300	8500	1800
	200	9900	9100	7800	8600	9900	9100	1800
N3	50	4800	3900	3300	3800	4800	3900	900
	75	5500	4900	4100	4800	5500	4900	900
	100	6200	5000	4300	4900	6200	5000	1200
	125	6800	5500	4800	5500	6800	5500	1500
	150	7400	6300	5200	6100	7400	6300	1700
	175	8000	6600	5600	6700	8000	6600	1700
	200	8600	7300	6200	7100	8600	7300	1700
N4	50	3600	3100	2700	3100	3600	3100	600
	75	4400	3900	3100	3900	4400	3900	900
	100	4600	4000	3500	4000	4600	4000	1200
	125	5100	4500	3900	4500	5100	4500	1300
	150	5600	5100	4300	5000	5600	5100	1400
	175	6100	5400	4600	5600	6100	5400	1500
	200	6800	6100	5200	6200	6800	6100	1500
C1	50	3800	3500	2900	3600	3800	3500	900
	75	4600	4200	3500	4400	4600	4200	900
	100	5300	4900	4100	5100	5300	4900	1200
C2	50	3100	2800	2300	2900	3100	2800	600
	75	3800	3500	2900	3600	3800	3500	600
	100	4400	4000	3300	4200	4400	4000	900
C3	50	2500	2300	1900	2400	2500	2300	400
	75	3100	2800	2400	2900	3100	2800	600
	100	3600	3300	2700	3400	3600	3300	600

Notes Tables apply to flat patio structures that are attached/freestanding. When designing flat/gable carport or gable patio structures that are attached/freestanding, refer to the Applicable Co-efficient table on page 10. Sheet spans are measured from the back of the receiver channel to the front of the beam. A maximum side sheet overhang of 250mm is recommended for a full sheet cover.

Maximum Roof Sheet Length

For a Roof Pitch of 1 Degree

Product	Max. Roof Sheet Length @ 1 Degree (mm)
50mm Ribbed Insulated Roofing	3800
75mm Ribbed Insulated Roofing	4550
100mm Ribbed Insulated Roofing	5300
125mm Ribbed Insulated Roofing	6000
150mm Ribbed Insulated Roofing	6700

Notes Maximum roof sheet lengths shown are based on rain intensity of 350mm/hr. This table does not override the standard roof sheet span tables.

Roofing Fixing Guide

Ribbed

Product	Metal Beam	Timber Beam	Screws Required
50mm Ribbed Insulated Roofing	Tek 14x125 Screw	Type 17 14x125 Screw	4 per panel for each fixing point
75mm Ribbed Insulated Roofing	Tek 14x150 Screw	Type 17 14x150 Screw	4 per panel for each fixing point
100mm Ribbed Insulated Roofing	Tek 14x175 Screw	Type 17 14x200 Screw	4 per panel for each fixing point
125mm Ribbed Insulated Roofing	Tek 14x200 Screw	Type 17 14x200 Screw	4 per panel for each fixing point
150mm Ribbed Insulated Roofing	Tek 14x225 Screw	Type 17 14x250 Screw	4 per panel for each fixing point
175mm Ribbed Insulated Roofing	Tek 14x250 Screw	Type 17 14x250 Screw	4 per panel for each fixing point
200mm Ribbed Insulated Roofing	Tek 14x275 Screw	Type 17 14x275 Screw	4 per panel for each fixing point

Corrugated

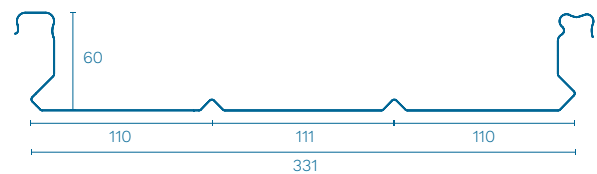
Product	Metal Beam	Timber Beam	Screws Required
50mm Corrugated Insulated Roofing	Tek 14x125 Screw	Type 17 14x125 Screw	7 per panel for each fixing point
75mm Corrugated Insulated Roofing	Tek 14x150 Screw	Type 17 14x150 Screw	7 per panel for each fixing point
100mm Corrugated Insulated Roofing	Tek 14x150 Screw	Type 17 14x200 Screw	7 per panel for each fixing point
125mm Corrugated Insulated Roofing	Tek 14x175 Screw	Type 17 14x200 Screw	7 per panel for each fixing point
150mm Corrugated Insulated Roofing	Tek 14x200 Screw	Type 17 14x250 Screw	7 per panel for each fixing point
175mm Corrugated Insulated Roofing	Tek 14x250 Screw	Type 17 14x250 Screw	7 per panel for each fixing point
200mm Corrugated Insulated Roofing	Tek 14x275 Screw	Type 17 14x275 Screw	7 per panel for each fixing point

Notes Ribbed panels require a fixing point to every crest, corrugated panels require a fixing point to every second crest. Tek 12x20 screws required at 900 centres on overlap for bracing and weather protection. All Tek 14g and Type 17 14g to be Climaseal coated with cyclonic washer. For fixing into metal beam 5mm-15mm use 'Series 500' screws.

Single-Skin Roofing Spans

Profiles

V-Line Roofing



Specifications

Sheet Coverage (mm)	331
Min. Length (m)	Cut to length. 0.5
Roof Material	0.48 / AZ150 G550
Roof Finish	Top: 25% Gloss, Bottom: 80% Gloss*
Paint System	AS/NZS 2728 and AS 1397
Min. Roof Pitch (°)	2° or 1° (limited lengths)
Mass (kg/m ²)	0.48 / 4.145
Tolerances (mm)	Length +10 - 10, Width +2 -2

Notes Deflection limit of span 1/150 applies, and in accordance with Serviceability Limit state criteria per AS1170.0 - TABLE C1. Single-Skin patios/carports are considered non-trafficable. Single-Skin roofing is not engineered to support a concentrated load. It is recommended to display a non-trafficable sign on the structure.

*Off White/Off White 25% Gloss/25% Gloss

Span Table

Wind Class	Thickness	Wall to One Side (mm) 0.5/0.7 Cp,n	Walls to Two Sides (mm) 1.0 Cp,n	Walls to Three Sides (mm) 1.2 Cp,n	Enclosed (mm) 1.1-1.6 Cp,n	Open Four Sides (mm) 0.7 Cp,n	Open Four Sides (mm) 1.0 Cp,n	Overhang (mm)
N1/N2	0.48	5150	5150	4650	4650	5150	5150	900
N3	0.48	4950	4900	4450	4450	5150	4900	900
N4	0.48	4700	4650	4200	4250	4800	4650	900
C1	0.48	4180	4180	3400	3550	4180	4180	750
C2	0.48	3400	3220	2800	2950	4050	3220	525
C3	0.48	2700	2600	2500	2500	2850	2600	275

Notes Tables apply to flat patio structures that are attached/freestanding. When designing flat/gable carport or gable patio structures that are attached/freestanding, refer to the Applicable Coefficient table on page 10. Sheet spans are measured from the back of the receiver channel to the front of the beam.

Maximum Roof Sheet Length

For a Roof Pitch of 1 Degree

Product	Max. Roof Sheet Length @ 1 Degree (mm)
V-Line 0.48 BMT Single-Skin Roofing	3600

Notes Maximum roof sheet length shown are based on rain intensity of 350mm/hr. This table does not override the standard roof sheet span tables.

Roof Fixing Guide

V-Line

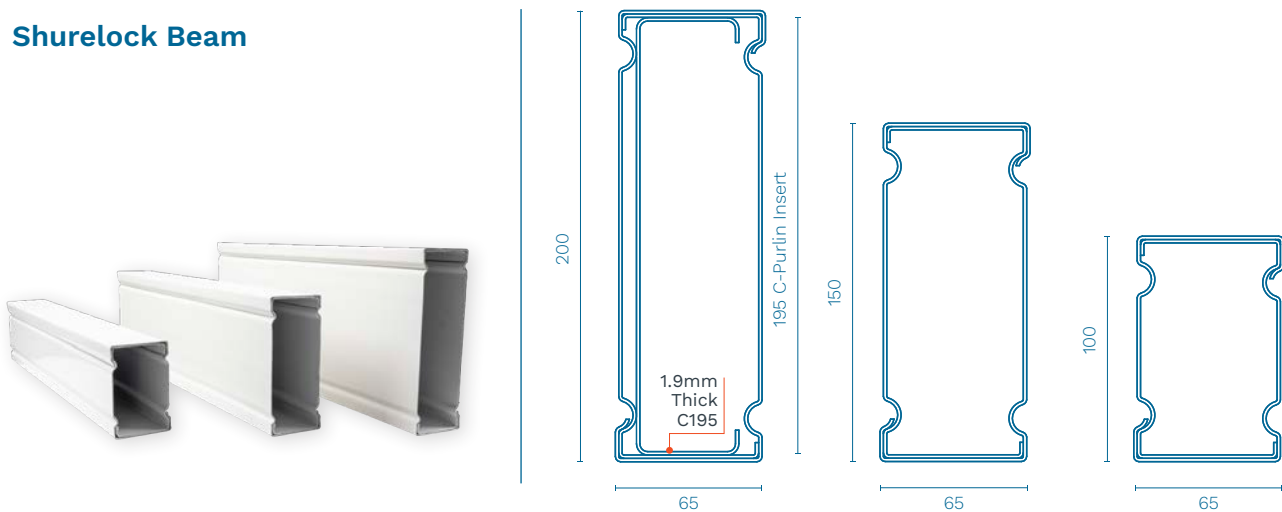
Recommended Fixings	Wind Class		Screws Required
	N1 to N4	C1 to C4	
Metal Beam	Tek 12-14x20 Screw with Neo or Ripple Zip Screw	Tek 12-14x30 Screw with Neo and 25x1.2mm Aluminium EPDM Washer	1 per pan for each fixing point
Timber Beam	T17 12x25 Screw with Neo	N/A	1 per pan for each fixing point

Notes V-Line roofing requires 3 fixing points per sheet (1 per pan). For fixing into metal beam 5mm-15mm use Series 500 screws.

Beam Specifications and Flat Spans

Profiles

Shurelock Beam



Specifications

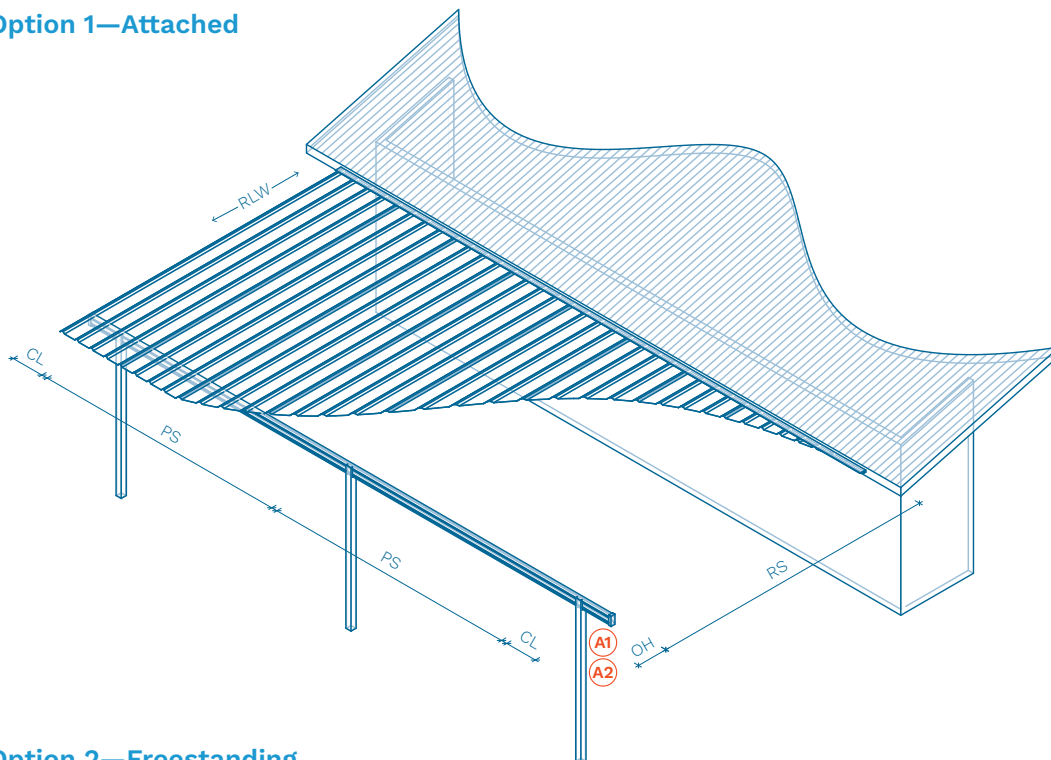
Beam Size (mm)	100x65	150x65	200x65	195x48 Insert
Min. Length (m)	Cut to length. 1.0			
Beam Thickness	1.0	1.2	1.2	1.9
Beam Material	High-Tensile Steel AZ150 G550			AZ350 G550
Beam Finish	Pre-Painted or Alu-zinc			Galvanised
Paint System	AS/NZS 2728 and AS 1397			N/A
Profile Design	2 Piece Contoured			C Section
Mass (kg/m ²)	4.14	5.91	6.89	4.50
Tolerances (mm)	Length +10 - 10, Width +1.5 -1, Height +3 -1			
Beam Cantilever	900	1200	1500	N/A

Notes For extra span insert a C195-1.9 Purlin inside a 200mm Shurelock Beam (Wind load non-trafficable and 15kg/m² roof load). Not recommended for Spliced Beams. Beam Cantilevers apply to Flat Spans (Single, Continuous, Multispan), and Gable Spans (excludes Freestanding Bolt-to-Slab Structures). Beam Cantilevers must not exceed 25% of the main span (the distance between the supporting posts). This formula can be used for a 200x65 Insert (C195-1.9). Beam spans are measured from centre to centre of posts/beams. Deflection limit of span 1/150 applies, and in accordance with Serviceability Limit State criteria per AS1170.0 - TABLE C1.

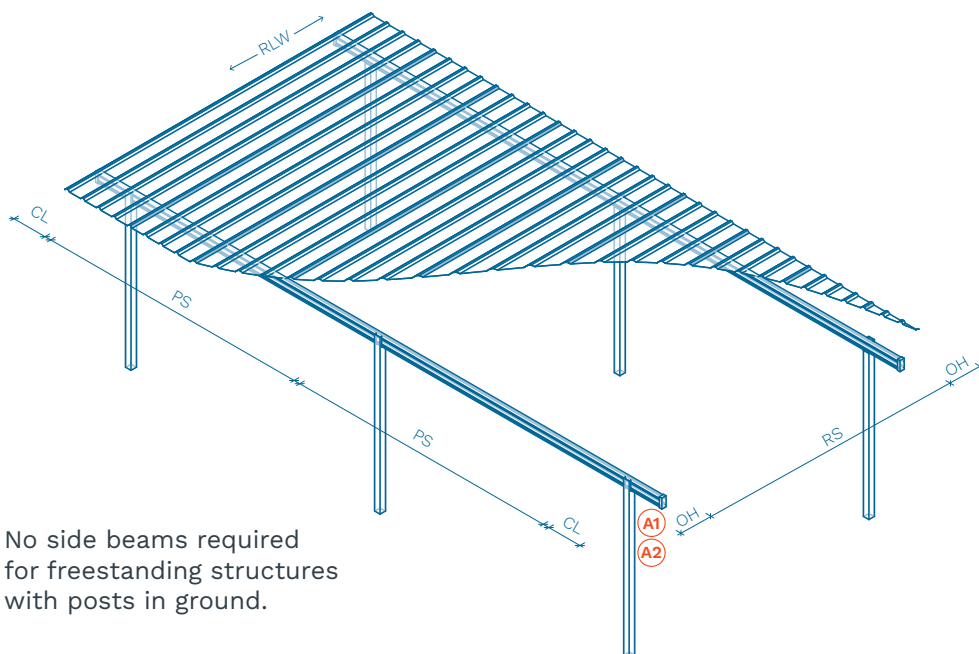
Flat Patio/Carport Designs—Single-Span

Open, Partially Enclosed and Enclosed Cp,n (0.5-1.6)

Option 1—Attached



Option 2—Freestanding



No side beams required
for freestanding structures
with posts in ground.

How to Calculate Roof Load Width

$$RLW = RS/2 + OH$$

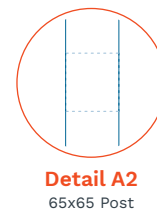
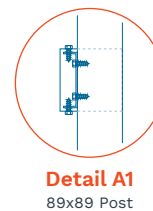
Example:

$$3.0\text{m Roof Sheet}/2 = 1.5\text{m}$$

$$1.5\text{m} + 0.5\text{m Over Hang} = 2.0\text{m Roof Load Width}$$

Legend

CL	Beam Cantilever
RS	Roof Sheet Span
OH	Roof Sheet Overhang
PS	Post Spacing
RLW	Roof Load Width



Flat Patio/Carport Designs—Single-Span

Open, Partially Enclosed and Enclosed Cp,n (0.5-1.2)

Span Table

Wind Class	Roof Load Width (m)	Walls to One Side 0.5 Cp,n				Walls to One Side 0.7 Cp,n				Walls to One/Two Sides 1.0 Cp,n			
		Post Spacing (m)											
		100x65	150x65	200x65*	200x65 Insert	100x65	150x65	200x65	200x65 Insert	100x65	150x65	200x65	200x65 Insert
N1	1.20	6.85	9.05	10.70	12.70	6.15	8.90	10.70	12.70	5.45	7.90	9.90	11.60
	1.50	6.40	8.55	10.10	12.00	5.70	8.25	10.10	12.00	5.05	7.35	9.20	10.75
	1.80	6.00	8.15	9.65	11.50	5.35	7.80	9.65	11.40	4.75	6.90	8.65	10.10
	2.10	5.70	7.85	9.30	11.05	5.10	7.40	9.25	10.80	4.50	6.55	8.20	9.60
	2.40	5.45	7.60	9.00	10.70	4.85	7.05	8.85	10.35	4.30	6.25	7.85	9.20
	2.70	5.25	7.35	8.75	10.35	4.70	6.80	8.50	9.95	4.15	6.05	7.55	8.85
	3.00	5.05	7.20	8.50	10.10	4.50	6.55	8.20	9.60	4.00	5.80	7.30	8.50
	3.30	4.90	7.00	8.30	9.85	4.40	6.35	7.95	9.30	3.90	5.65	7.05	8.25
	3.60	4.75	6.85	8.10	9.65	4.25	6.15	7.75	9.05	3.75	5.45	6.85	8.00
	3.90	4.65	6.70	7.95	9.45	4.15	6.00	7.55	8.80	3.65	5.35	6.70	7.80
	4.20	4.50	6.55	7.80	9.30	4.05	5.85	7.35	8.60	3.60	5.20	6.50	7.60
	4.50	4.40	6.40	7.70	9.15	3.95	5.70	7.20	8.40	3.50	5.10	6.35	7.45
	4.80	4.30	6.25	7.55	9.00	3.85	5.60	7.00	8.20	3.45	4.95	6.25	7.30
	5.10	4.25	6.15	7.45	8.85	3.80	5.50	6.90	8.05	3.35	4.85	6.10	7.15
	5.40	4.15	6.05	7.35	8.70	3.70	5.40	6.75	7.90	3.30	4.80	6.00	7.00
	5.70	4.10	5.90	7.25	8.60	3.65	5.30	6.65	7.75	3.25	4.70	5.90	6.90
	6.00	4.00	5.80	7.15	8.50	3.60	5.20	6.50	7.60	3.20	4.60	5.80	6.78
	6.30	3.95	5.70	7.05	8.40	3.50	5.10	6.40	7.50	3.15	4.55	5.70	6.68
	6.60	3.90	5.65	7.00	8.25	3.45	5.05	6.30	7.40	3.10	4.45	5.60	6.55
	6.90	3.85	5.55	6.90	8.15	3.40	4.95	6.20	7.25	3.05	4.40	5.50	6.45
	7.20	3.75	5.45	6.85	8.00	3.35	4.90	6.15	7.15	3.00	4.35	5.45	6.35
	7.50	3.70	5.40	6.75	7.90	3.30	4.80	6.05	7.05	2.95	4.30	5.35	6.25
	7.80	3.65	5.35	6.70	7.80	3.30	4.75	5.95	7.00	2.90	4.20	5.30	6.20
	8.10	3.65	5.25	6.60	7.70	3.25	4.70	5.90	6.90	—	—	—	—
	8.40	3.60	5.20	6.50	7.60	3.20	4.65	5.85	6.80	—	—	—	—
	8.70	3.26	5.15	6.45	7.55	3.15	4.60	5.75	6.75	—	—	—	—

Notes Tables apply to flat patio structures that are attached/freestanding. For designing flat carport structures that are attached/freestanding, refer to the Applicable Coefficient table on page 10.

Walls to Three Sides 1.2 Cp,n				Enclosed 1.1 Cp,n				Open Four Sides 0.7 Cp,n				Open Four Sides 1.0 Cp,n			
Post Spacing (m)															
200x65				200x65				200x65				200x65			
100x65	150x65	200x65	Insert	100x65	150x65	200x65	Insert	100x65	150x65	200x65*	Insert	100x65	150x65	200x65	Insert
5.15	7.45	9.35	10.90	5.30	7.65	9.60	11.20	6.85	9.05	10.70	12.70	6.15	8.90	10.70	12.70
4.75	6.90	8.65	10.10	4.90	7.10	5.90	10.40	6.40	8.55	10.10	12.00	5.70	8.25	10.10	12.00
4.50	6.50	8.15	9.50	4.60	6.70	8.40	9.80	6.00	8.15	9.65	11.50	5.35	7.80	9.65	11.40
4.25	6.15	7.75	9.05	4.40	6.35	7.95	9.30	5.70	7.85	9.30	11.05	5.10	7.40	9.25	10.80
4.05	5.90	7.40	8.65	4.20	6.05	7.60	8.90	5.45	7.60	9.00	10.70	4.85	7.05	8.85	10.35
3.90	5.65	7.10	8.30	4.00	5.85	7.30	8.55	5.25	7.35	8.75	10.35	4.70	6.80	8.50	9.95
3.75	5.45	6.85	8.00	3.90	5.65	7.05	8.25	5.05	7.20	8.50	10.10	4.50	6.55	8.20	9.60
3.65	5.30	6.65	7.75	3.75	5.45	6.85	8.00	4.90	7.00	8.30	9.85	4.40	6.35	7.95	9.30
3.55	5.15	6.45	7.55	3.65	5.30	6.65	7.75	4.75	6.85	8.10	9.65	4.25	6.15	7.75	9.05
3.45	5.00	6.30	7.35	3.55	5.15	6.45	7.55	4.65	6.70	7.95	9.45	4.15	6.00	7.55	8.80
3.35	4.90	6.15	7.15	3.45	5.05	6.30	7.40	4.50	6.55	7.80	9.30	4.05	5.85	7.35	8.60
3.30	4.80	6.00	7.00	3.40	4.90	6.15	7.20	4.40	6.40	7.70	9.15	3.95	5.70	7.20	8.40
3.20	4.70	5.85	6.85	3.30	4.80	6.05	7.05	4.30	6.25	7.55	9.00	3.85	5.60	7.00	8.20
3.15	4.60	5.75	6.70	3.25	4.70	5.90	6.90	4.25	6.15	7.45	8.85	3.80	5.50	6.90	8.05
3.10	4.50	5.65	6.60	3.20	4.65	5.80	6.80	4.15	6.05	7.35	8.70	3.70	5.40	6.75	7.90
3.05	4.40	5.55	6.45	3.15	4.55	5.70	6.65	4.10	5.90	7.25	8.60	3.65	5.30	6.65	7.75
3.00	4.35	5.45	6.35	3.10	4.45	5.60	6.55	4.00	5.80	7.15	8.50	3.60	5.20	6.50	7.60
2.95	4.25	5.35	6.25	3.05	4.40	5.50	6.45	3.95	5.70	7.05	8.40	3.50	5.10	6.40	7.50
2.90	4.20	5.25	6.15	3.00	4.35	5.45	6.35	3.90	5.65	7.00	8.25	3.45	5.05	6.30	7.40
–	–	–	–	2.95	4.25	5.35	6.25	3.85	5.55	6.90	8.15	3.40	4.95	6.20	7.25
–	–	–	–	2.90	4.20	5.25	6.15	3.75	5.45	6.85	8.00	3.35	4.90	6.15	7.15
–	–	–	–	2.85	4.15	5.20	6.10	3.70	5.40	6.75	7.90	3.30	4.80	6.05	7.05
–	–	–	–	–	–	–	–	3.65	5.35	6.70	7.80	3.30	4.75	5.95	7.00
–	–	–	–	–	–	–	–	3.65	5.25	6.60	7.70	3.25	4.70	5.90	6.90
–	–	–	–	–	–	–	–	3.60	5.20	6.50	7.60	3.20	4.65	5.85	6.80
–	–	–	–	–	–	–	–	3.26	5.15	6.45	7.55	3.15	4.60	5.75	6.75

Flat Patio/Carport Designs—Single-Span

Open, Partially Enclosed and Enclosed Cp,n (0.5-1.2)

Span Table

Wind Class	Roof Load Width (m)	Walls to One Side 0.5 Cp,n				Walls to One Side 0.7 Cp,n				Walls to One/Two Sides 1.0 Cp,n			
		Post Spacing (m)											
		100x65	150x65	200x65*	200x65 Insert	100x65	150x65	200x65	200x65 Insert	100x65	150x65	200x65	200x65 Insert
N2	1.20	6.85	9.05	10.70	12.70	6.15	8.90	10.70	12.70	5.45	7.90	9.90	11.60
	1.50	6.40	8.55	10.10	12.00	5.70	8.25	10.10	12.00	5.05	7.35	9.20	10.75
	1.80	6.00	8.15	9.65	11.50	5.35	7.80	9.65	11.40	4.75	6.90	8.65	10.10
	2.10	5.70	7.85	9.30	11.05	5.10	7.40	9.25	10.80	4.50	6.55	8.20	9.60
	2.40	5.45	7.60	9.00	10.70	4.85	7.05	8.85	10.35	4.30	6.25	7.85	9.20
	2.70	5.25	7.35	8.75	10.35	4.70	6.80	8.50	9.95	4.15	6.05	7.55	8.85
	3.00	5.05	7.20	8.50	10.10	4.50	6.55	8.20	9.60	4.00	5.80	7.30	8.50
	3.30	4.90	7.00	8.30	9.85	4.40	6.35	7.95	9.30	3.90	5.65	7.05	8.25
	3.60	4.75	6.85	8.10	9.65	4.25	6.15	7.75	9.05	3.75	5.45	6.85	8.00
	3.90	4.65	6.70	7.95	9.45	4.15	6.00	7.55	8.80	3.65	5.35	6.70	7.80
	4.20	4.50	6.55	7.80	9.30	4.05	5.85	7.35	8.60	3.60	5.20	6.50	7.60
	4.50	4.40	6.40	7.70	9.15	3.95	5.70	7.20	8.40	3.50	5.10	6.35	7.45
	4.80	4.30	6.25	7.55	9.00	3.85	5.60	7.00	8.20	3.45	4.95	6.25	7.30
	5.10	4.25	6.15	7.45	8.85	3.80	5.50	6.90	8.05	3.35	4.85	6.10	7.15
	5.40	4.15	6.05	7.35	8.70	3.70	5.40	6.75	7.90	3.30	4.80	6.00	7.00
	5.70	4.10	5.90	7.25	8.60	3.65	5.30	6.65	7.75	3.25	4.70	5.90	6.90
	6.00	4.00	5.80	7.15	8.50	3.60	5.20	6.50	7.60	3.20	4.60	5.80	6.78
	6.30	3.95	5.70	7.05	8.40	3.50	5.10	6.40	7.50	3.15	4.55	5.70	6.68
	6.60	3.90	5.65	7.00	8.25	3.45	5.05	6.30	7.40	3.10	4.45	5.60	6.55
	6.90	3.85	5.55	6.90	8.15	3.40	4.95	6.20	7.25	3.05	4.40	5.50	6.45
	7.20	3.75	5.45	6.85	8.00	3.35	4.90	6.15	7.15	3.00	4.35	5.45	6.35
	7.50	3.70	5.40	6.75	7.90	3.30	4.80	6.05	7.05	2.95	4.30	5.35	6.25
	7.80	3.65	5.35	6.70	7.80	3.30	4.75	5.95	7.00	2.90	4.20	5.30	6.20
	8.10	3.65	5.25	6.60	7.70	3.25	4.70	5.90	6.90	—	—	—	—
	8.40	3.60	5.20	6.50	7.60	3.20	4.65	5.85	6.80	—	—	—	—
	8.70	3.26	5.15	6.45	7.55	3.15	4.60	5.75	6.75	—	—	—	—

Notes Tables apply to flat patio structures that are attached/freestanding. For designing flat carport structures that are attached/freestanding, refer to the Applicable Coefficient table on page 10.

Walls to Three Sides 1.2 Cp,n				Enclosed 1.1 Cp,n				Open Four Sides 0.7 Cp,n				Open Four Sides 1.0 Cp,n			
Post Spacing (m)															
200x65				200x65				200x65				200x65			
100x65	150x65	200x65	Insert	100x65	150x65	200x65	Insert	100x65	150x65	200x65*	Insert	100x65	150x65	200x65	Insert
5.15	7.45	9.35	10.90	5.30	7.65	9.60	11.20	6.85	9.05	10.70	12.70	6.15	8.90	10.70	12.70
4.75	6.90	8.65	10.10	4.90	7.10	5.90	10.40	6.40	8.55	10.10	12.00	5.70	8.25	10.10	12.00
4.50	6.50	8.15	9.50	4.60	6.70	8.40	9.80	6.00	8.15	9.65	11.50	5.35	7.80	9.65	11.40
4.25	6.15	7.75	9.05	4.40	6.35	7.95	9.30	5.70	7.85	9.30	11.05	5.10	7.40	9.25	10.80
4.05	5.90	7.40	8.65	4.20	6.05	7.60	8.90	5.45	7.60	9.00	10.70	4.85	7.05	8.85	10.35
3.90	5.65	7.10	8.30	4.00	5.85	7.30	8.55	5.25	7.35	8.75	10.35	4.70	6.80	8.50	9.95
3.75	5.45	6.85	8.00	3.90	5.65	7.05	8.25	5.05	7.20	8.50	10.10	4.50	6.55	8.20	9.60
3.65	5.30	6.65	7.75	3.75	5.45	6.85	8.00	4.90	7.00	8.30	9.85	4.40	6.35	7.95	9.30
3.55	5.15	6.45	7.55	3.65	5.30	6.65	7.75	4.75	6.85	8.10	9.65	4.25	6.15	7.75	9.05
3.45	5.00	6.30	7.35	3.55	5.15	6.45	7.55	4.65	6.70	7.95	9.45	4.15	6.00	7.55	8.80
3.35	4.90	6.15	7.15	3.45	5.05	6.30	7.40	4.50	6.55	7.80	9.30	4.05	5.85	7.35	8.60
3.30	4.80	6.00	7.00	3.40	4.90	6.15	7.20	4.40	6.40	7.70	9.15	3.95	5.70	7.20	8.40
3.20	4.70	5.85	6.85	3.30	4.80	6.05	7.05	4.30	6.25	7.55	9.00	3.85	5.60	7.00	8.20
3.15	4.60	5.75	6.70	3.25	4.70	5.90	6.90	4.25	6.15	7.45	8.85	3.80	5.50	6.90	8.05
3.10	4.50	5.65	6.60	3.20	4.65	5.80	6.80	4.15	6.05	7.35	8.70	3.70	5.40	6.75	7.90
3.05	4.40	5.55	6.45	3.15	4.55	5.70	6.65	4.10	5.90	7.25	8.60	3.65	5.30	6.65	7.75
3.00	4.35	5.45	6.35	3.10	4.45	5.60	6.55	4.00	5.80	7.15	8.50	3.60	5.20	6.50	7.60
2.95	4.25	5.35	6.25	3.05	4.40	5.50	6.45	3.95	5.70	7.05	8.40	3.50	5.10	6.40	7.50
2.90	4.20	5.25	6.15	3.00	4.35	5.45	6.35	3.90	5.65	7.00	8.25	3.45	5.05	6.30	7.40
–	–	–	–	2.95	4.25	5.35	6.25	3.85	5.55	6.90	8.15	3.40	4.95	6.20	7.25
–	–	–	–	2.90	4.20	5.25	6.15	3.75	5.45	6.85	8.00	3.35	4.90	6.15	7.15
–	–	–	–	2.85	4.15	5.20	6.10	3.70	5.40	6.75	7.90	3.30	4.80	6.05	7.05
–	–	–	–	–	–	–	–	3.65	5.35	6.70	7.80	3.30	4.75	5.95	7.00
–	–	–	–	–	–	–	–	3.65	5.25	6.60	7.70	3.25	4.70	5.90	6.90
–	–	–	–	–	–	–	–	3.60	5.20	6.50	7.60	3.20	4.65	5.85	6.80
–	–	–	–	–	–	–	–	3.26	5.15	6.45	7.55	3.15	4.60	5.75	6.75

Flat Patio/Carport Designs—Single-Span

Open, Partially Enclosed and Enclosed Cp,n (0.5-1.2)

Span Table

Wind Class	Roof Load Width (m)	Walls to One Side 0.5 Cp,n				Walls to One Side 0.7 Cp,n				Walls to One/Two Sides 1.0 Cp,n			
		Post Spacing (m)											
		100x65	150x65	200x65*	200x65 Insert	100x65	150x65	200x65	200x65 Insert	100x65	150x65	200x65	200x65 Insert
N3	1.20	—	—	—	—	5.25	7.65	9.60	11.25	4.70	6.80	8.55	9.95
	1.50	—	—	—	—	4.85	7.90	8.95	10.45	4.35	6.30	7.90	9.25
	1.80	—	—	—	—	4.60	7.60	8.40	9.80	4.10	5.95	7.45	8.70
	2.10	—	—	—	—	4.35	7.40	8.00	9.30	3.90	5.65	7.10	8.25
	2.40	—	—	—	—	4.15	7.20	7.65	8.90	3.70	5.40	6.75	7.90
	2.70	—	—	—	—	4.00	7.05	7.35	8.55	3.60	5.20	6.50	7.60
	3.00	—	—	—	—	3.90	5.65	7.10	8.25	3.45	5.00	6.30	7.35
	3.30	—	—	—	—	3.75	5.45	6.85	8.00	3.35	4.85	6.10	7.10
	3.60	—	—	—	—	3.65	5.30	6.65	7.80	3.25	4.70	5.90	6.90
	3.90	—	—	—	—	3.55	5.15	6.50	7.60	3.15	4.60	5.75	6.70
	4.20	—	—	—	—	3.50	5.05	6.35	7.40	3.10	4.50	5.30	6.55
	4.50	—	—	—	—	3.40	4.95	6.20	7.20	3.00	4.35	5.50	6.40
	4.80	—	—	—	—	3.30	4.80	6.05	7.05	2.95	4.30	5.35	6.25
	5.10	—	—	—	—	3.25	4.75	5.95	6.95	2.90	4.20	5.25	6.15
	5.40	—	—	—	—	3.20	4.65	5.80	6.80	2.85	4.10	5.15	6.05
	5.70	—	—	—	—	3.15	4.55	5.70	6.65	2.80	4.05	5.00	5.90
	6.00	—	—	—	—	3.10	4.50	5.60	6.55	2.75	3.95	4.85	5.80
	6.30	—	—	—	—	3.05	4.40	5.50	6.45	2.70	3.90	4.75	5.65
	6.60	—	—	—	—	3.00	4.35	5.45	6.35	—	—	—	—
	6.90	—	—	—	—	2.90	4.25	5.35	6.25	—	—	—	—

Notes: Tables apply to flat patio structures that are attached/freestanding. For designing flat carport structures that are attached/freestanding, refer to the Applicable Coefficient table on page 10.

Walls to Three Sides 1.2 Cp,n				Enclosed 1.1 Cp,n				Open Four Sides 0.7 Cp,n				Open Four Sides 1.0 Cp,n			
Post Spacing (m)															
200x65				200x65				200x65				200x65			
100x65	150x65	200x65	Insert	100x65	150x65	200x65	Insert	100x65	150x65	200x65*	Insert	100x65	150x65	200x65	Insert
4.40	6.40	8.05	9.40	4.55	6.60	8.25	9.65	–	–	–	–	5.25	7.65	9.60	11.25
4.10	5.95	7.45	8.70	4.20	6.10	7.70	8.95	–	–	–	–	4.85	7.90	8.95	10.45
3.85	5.60	7.00	8.20	3.95	5.75	7.20	8.45	–	–	–	–	4.60	7.60	8.40	9.80
3.65	5.30	6.65	7.80	3.75	5.45	6.85	8.00	–	–	–	–	4.35	7.40	8.00	9.30
3.50	5.10	6.35	7.45	3.60	5.25	6.55	7.65	–	–	–	–	4.15	7.20	7.65	8.90
3.35	4.90	6.10	7.15	3.45	5.05	6.30	7.35	–	–	–	–	4.00	7.05	7.35	8.55
3.25	4.70	5.90	6.90	3.35	4.85	6.10	7.10	–	–	–	–	3.90	5.65	7.10	8.25
3.15	4.55	5.75	6.70	3.25	4.70	5.90	6.90	–	–	–	–	3.75	5.45	6.85	8.00
3.05	4.45	5.55	6.50	3.15	4.55	5.75	6.70	–	–	–	–	3.65	5.30	6.65	7.80
2.95	4.30	5.40	6.35	3.06	4.45	5.60	6.50	–	–	–	–	3.55	5.15	6.50	7.60
5.90	4.20	5.30	6.15	3.00	4.35	5.45	6.35	–	–	–	–	3.50	5.05	6.35	7.40
2.85	4.10	5.15	6.05	2.90	4.25	5.30	6.20	–	–	–	–	3.40	4.95	6.20	7.20
2.75	4.05	4.95	5.90	2.85	4.15	5.20	6.10	–	–	–	–	3.30	4.80	6.05	7.05
2.70	3.95	4.80	5.75	2.80	4.05	5.05	5.95	–	–	–	–	3.25	4.75	5.95	6.95
–	–	–	–	2.75	4.00	4.90	5.80	–	–	–	–	3.20	4.65	5.80	6.80
–	–	–	–	2.70	3.90	4.75	5.65	–	–	–	–	3.15	4.55	5.70	6.65
–	–	–	–	2.65	3.80	4.65	5.50	–	–	–	–	3.10	4.50	5.60	6.55
–	–	–	–	–	–	–	–	–	–	–	–	3.05	4.40	5.50	6.45
–	–	–	–	–	–	–	–	–	–	–	–	3.00	4.35	5.45	6.35
–	–	–	–	–	–	–	–	–	–	–	–	2.90	4.25	5.35	6.25

Flat Patio/Carport Designs—Single-Span

Open, Partially Enclosed and Enclosed Cp,n (0.5-1.2)

Span Table

Wind Class	Roof Load Width (m)	Walls to One Side 0.5 Cp,n				Walls to One Side 0.7 Cp,n				Walls to One/Two Sides 1.0 Cp,n			
		Post Spacing (m)											
		100x65	150x65	200x65*	200x65 Insert	100x65	150x65	200x65	200x65 Insert	100x65	150x65	200x65	200x65 Insert
N4	1.20	—	—	—	—	4.65	6.70	8.40	9.85	4.10	5.95	7.50	8.78
	1.50	—	—	—	—	4.30	6.25	7.80	9.15	3.80	5.55	6.95	8.10
	1.80	—	—	—	—	4.05	5.85	7.35	8.60	3.60	5.20	6.55	7.65
	2.10	—	—	—	—	3.85	5.55	7.00	8.15	3.40	4.95	6.20	7.25
	2.40	—	—	—	—	3.65	5.35	6.70	7.80	3.25	4.75	5.95	6.95
	2.70	—	—	—	—	3.55	5.10	6.40	7.50	3.15	4.55	5.70	6.65
	3.00	—	—	—	—	3.40	4.95	6.20	7.25	3.00	4.40	5.50	6.45
	3.30	—	—	—	—	3.30	4.80	6.00	7.00	2.95	4.25	5.35	6.25
	3.60	—	—	—	—	3.20	4.65	5.85	6.80	2.85	4.15	5.15	6.05
	3.90	—	—	—	—	3.10	4.55	5.70	6.65	2.75	4.00	4.95	5.90
	4.20	—	—	—	—	3.05	4.40	5.55	6.45	2.70	3.90	4.75	5.65
	4.50	—	—	—	—	2.95	4.30	5.40	6.35	2.65	3.80	4.60	5.50
	4.80	—	—	—	—	2.90	4.20	5.30	6.20	2.55	3.65	4.45	5.30
	5.10	—	—	—	—	2.85	4.15	5.15	6.05	2.50	3.55	4.30	5.15

Notes Tables apply to flat patio structures that are attached/freestanding. For designing flat carport structures that are attached/freestanding, refer to the Applicable Coefficient table on page 10.

Walls to Three Sides 1.2 Cp,n				Enclosed 1.1 Cp,n				Open Four Sides 0.7 Cp,n				Open Four Sides 1.0 Cp,n			
Post Spacing (m)															
200x65				200x65				200x65				200x65			
100x65	150x65	200x65	Insert	100x65	150x65	200x65	Insert	100x65	150x65	200x65*	Insert	100x65	150x65	200x65	Insert
3.85	5.60	7.05	8.20	4.00	5.80	7.25	8.45	–	–	–	–	4.65	6.70	8.40	9.85
3.60	5.20	6.55	7.65	3.70	5.35	6.70	7.85	–	–	–	–	4.30	6.25	7.80	9.15
3.35	4.90	6.15	7.20	3.45	5.05	6.30	7.40	–	–	–	–	4.05	5.85	7.35	8.60
3.20	4.65	5.85	6.80	3.30	4.80	6.00	7.00	–	–	–	–	3.85	5.55	7.00	8.15
3.05	4.45	5.60	6.50	3.15	4.60	5.75	6.70	–	–	–	–	3.65	5.35	6.70	7.80
2.95	4.25	5.35	6.25	3.05	4.40	5.50	6.45	–	–	–	–	3.55	5.10	6.40	7.50
2.85	4.15	5.15	6.05	2.95	4.25	5.35	6.25	–	–	–	–	3.40	4.95	6.20	7.25
2.75	4.00	4.90	5.85	2.85	4.10	5.15	6.05	–	–	–	–	3.30	4.80	6.00	7.00
2.65	3.75	4.70	5.60	2.75	4.00	4.90	5.85	–	–	–	–	3.20	4.65	5.85	6.80
2.60	3.70	4.50	5.35	2.70	3.90	4.70	5.60	–	–	–	–	3.10	4.55	5.70	6.65
2.50	3.55	4.35	5.20	2.60	3.75	4.55	5.40	–	–	–	–	3.05	4.40	5.55	6.45
–	–	–	–	2.55	3.60	4.40	5.20	–	–	–	–	2.95	4.30	5.40	6.35
–	–	–	–	2.45	3.50	4.25	5.05	–	–	–	–	2.90	4.20	5.30	6.20
–	–	–	–	–	–	–	–	–	–	–	–	2.85	4.15	5.15	6.05

Flat Patio/Carport Designs—Single-Span

Open, Partially Enclosed and Enclosed Cp,n (0.5-1.6)

Span Table

Wind Class	Roof Load Width (m)	Walls to One Side 0.5 Cp,n				Walls to One Side 0.7 Cp,n				Walls to One/Two Sides 1.0 Cp,n			
		Post Spacing (m)											
		100x65	150x65	200x65*	200x65 Insert	100x65	150x65	200x65	200x65 Insert	100x65	150x65	200x65	200x65 Insert
C1	1.20	5.90	8.60	10.70	12.55	5.30	7.65	9.60	11.25	4.70	6.80	8.55	9.95
	1.50	5.50	7.95	9.40	11.65	4.90	7.10	8.95	10.45	4.35	6.30	7.90	9.25
	1.80	5.15	7.50	8.95	11.00	4.60	6.70	8.40	9.80	4.10	5.95	7.45	8.70
	2.10	4.90	7.10	8.55	10.45	4.40	6.35	8.00	9.30	3.90	5.65	7.10	8.25
	2.40	4.70	6.80	8.20	9.95	4.20	6.10	7.65	8.90	3.70	5.40	6.75	7.90
	2.70	4.50	6.55	7.90	9.60	4.05	5.85	7.35	8.55	3.60	5.20	6.50	7.60
	3.00	4.35	6.30	7.70	9.25	3.90	5.65	7.10	8.25	3.45	5.00	6.30	7.35
	3.30	4.20	6.10	7.45	8.95	3.75	5.45	6.85	8.00	3.35	4.85	6.10	7.10
	3.60	4.10	5.95	7.25	8.70	3.65	5.30	6.65	7.80	3.25	4.70	5.90	6.90
	3.90	4.00	5.80	7.10	8.50	3.55	5.15	6.50	7.60	3.15	4.60	5.75	6.70
	4.20	3.90	5.65	6.90	8.25	3.50	5.05	6.35	7.40	3.10	4.50	5.30	6.55
	4.50	3.80	5.50	6.75	8.10	3.40	4.95	6.20	7.20	3.00	4.35	5.50	6.40
	4.80	3.70	5.40	6.65	7.90	3.30	4.80	6.05	7.05	2.95	4.30	5.35	6.25
	5.10	3.65	5.30	6.50	7.75	3.25	4.75	5.95	6.95	2.90	4.20	5.25	6.15
	5.40	3.60	5.20	6.40	7.60	3.20	4.65	5.80	6.80	2.85	4.10	5.15	6.05
	5.70	3.50	5.10	6.30	7.45	3.15	4.55	5.70	6.65	2.80	4.05	5.00	5.90
	6.00	3.45	5.00	6.20	7.35	3.10	4.50	5.60	6.55	2.75	3.95	4.85	5.80
	6.30	3.40	4.95	6.10	7.20	3.05	4.40	5.50	6.45	2.70	–	4.75	5.65
	6.60	3.35	4.85	6.00	7.10	3.00	4.35	5.45	6.25	2.65	–	–	–

Notes Tables apply to flat patio structures that are attached/freestanding. For designing flat carport structures that are attached/freestanding, refer to the Applicable Coefficient table on page 10.

Walls to Three Sides 1.2 Cp,n				Enclosed 1.6 Cp,n				Open Four Sides 0.7 Cp,n				Open Four Sides 1.0 Cp,n			
Post Spacing (m)															
100x65	150x65	200x65	200x65 Insert	100x65	150x65	200x65	200x65 Insert	100x65	150x65	200x65*	200x65 Insert	100x65	150x65	200x65	200x65 Insert
4.40	6.40	8.05	9.40	4.00	5.80	7.30	8.50	5.90	8.60	10.70	12.55	5.30	7.65	9.60	11.25
4.10	5.95	7.45	8.70	3.70	5.40	6.75	7.90	5.50	7.95	9.40	11.65	4.90	7.10	8.95	10.45
3.85	5.60	7.00	8.20	3.50	5.10	6.35	7.45	5.15	7.50	8.95	11.00	4.60	6.70	8.40	9.80
3.65	5.30	6.65	7.80	3.30	4.80	6.05	7.05	4.90	7.10	8.55	10.45	4.40	6.35	8.00	9.30
3.50	5.10	6.35	7.45	3.20	4.60	5.80	6.75	4.70	6.80	8.20	9.95	4.20	6.10	7.65	8.90
3.35	4.90	6.10	7.15	3.05	4.45	5.55	6.50	4.50	6.55	7.90	9.60	4.05	5.85	7.35	8.55
3.25	4.70	5.90	6.90	2.95	4.30	5.35	6.25	4.35	6.30	7.70	9.25	3.90	5.65	7.10	8.25
3.15	4.55	5.75	6.70	2.85	4.15	5.20	6.10	4.20	6.10	7.45	8.95	3.75	5.45	6.85	8.00
3.05	4.45	5.55	6.50	2.75	4.05	4.95	5.90	4.10	5.95	7.25	8.70	3.65	5.30	6.65	7.80
2.95	4.30	5.40	6.35	2.70	3.90	4.75	5.65	4.00	5.80	7.10	8.50	3.55	5.15	6.50	7.60
2.90	4.20	5.30	6.15	2.65	3.80	4.60	5.45	3.90	5.65	6.90	8.25	3.50	5.05	6.35	7.40
2.85	4.10	5.15	6.05	2.55	3.65	4.45	5.30	3.80	5.50	6.75	8.10	3.40	4.95	6.20	7.20
2.75	4.05	4.95	5.90	2.50	3.55	4.30	5.10	3.70	5.40	6.65	7.90	3.30	4.80	6.05	7.05
2.70	3.95	4.80	5.75	2.40	3.40	4.15	4.95	3.65	5.30	6.50	7.75	3.25	4.75	5.95	6.95
2.65	3.85	4.70	5.55	2.35	3.35	4.05	4.80	3.60	5.20	6.40	7.60	3.20	4.65	5.80	6.80
—	—	—	—	—	—	—	—	3.50	5.10	6.30	7.45	3.15	4.55	5.70	6.65
—	—	—	—	—	—	—	—	3.45	5.00	6.20	7.35	3.10	4.50	5.60	6.55
—	—	—	—	—	—	—	—	3.40	4.95	6.10	7.20	3.05	4.40	5.50	6.45
—	—	—	—	—	—	—	—	3.35	4.85	6.00	7.10	3.00	4.35	5.45	6.25

Flat Patio/Carport Designs—Single-Span

Open, Partially Enclosed and Enclosed Cp,n (0.5-1.6)

Span Table

Wind Class	Roof Load Width (m)	Walls to One Side 0.7 Cp,n				Walls to One/Two Sides 1.0 Cp,n			
		Post Spacing (m)							
		100x65	150x65	200x65*	200x65 Insert	100x65	150x65	200x65	200x65 Insert
C2	1.20	4.65	6.70	8.40	9.85	4.10	6.70	7.50	8.75
	1.50	4.30	6.25	7.80	9.15	3.80	6.25	6.95	8.10
	1.80	4.05	5.85	7.35	8.60	3.60	5.85	6.55	7.65
	2.10	3.85	5.55	7.00	8.15	3.40	5.55	6.20	7.25
	2.40	3.65	5.35	6.70	7.80	3.25	5.35	5.95	6.95
	2.70	3.55	5.10	6.40	7.50	3.15	5.10	5.70	6.65
	3.00	3.40	4.95	6.20	7.25	3.00	4.95	5.50	6.45
	3.30	3.30	4.80	6.00	7.00	2.95	4.80	5.35	6.25
	3.60	3.20	4.65	5.85	6.80	2.85	4.65	5.15	6.05
	3.90	3.10	4.55	5.70	6.65	2.75	4.55	4.95	5.90
	4.20	3.05	4.40	5.55	6.45	2.70	4.40	4.75	5.65
	4.50	2.95	4.30	5.40	6.35	2.65	4.30	4.60	5.50
	4.80	2.90	4.20	5.30	6.20	2.55	4.20	4.45	5.30
	5.10	2.85	4.15	5.15	6.05	2.50	4.15	4.30	5.15
	5.40	2.80	4.05	5.05	5.95	—	—	—	—
C3	1.20	4.05	5.90	7.40	8.65	3.60	5.25	6.55	7.65
	1.50	3.75	5.45	6.85	8.00	3.35	4.85	6.10	7.10
	1.80	3.55	5.15	6.45	7.55	3.15	4.55	5.75	6.70
	2.10	3.35	4.90	6.15	7.15	3.00	4.35	5.45	6.35
	2.40	3.20	4.70	5.85	6.85	2.85	4.15	5.20	6.10
	2.70	3.10	4.50	5.65	6.60	2.75	4.00	4.90	5.85
	3.00	3.00	4.35	5.45	6.35	2.65	3.80	4.65	5.50
	3.30	2.90	4.20	5.25	6.15	2.55	3.65	4.45	5.25
	3.60	2.80	4.10	5.05	6.00	2.45	3.50	4.25	5.05
	3.90	2.75	3.95	4.85	5.80	2.35	3.35	4.05	4.85
	4.20	2.65	3.85	4.70	5.60	—	—	—	—
	4.50	2.60	3.70	4.55	5.40	—	—	—	—

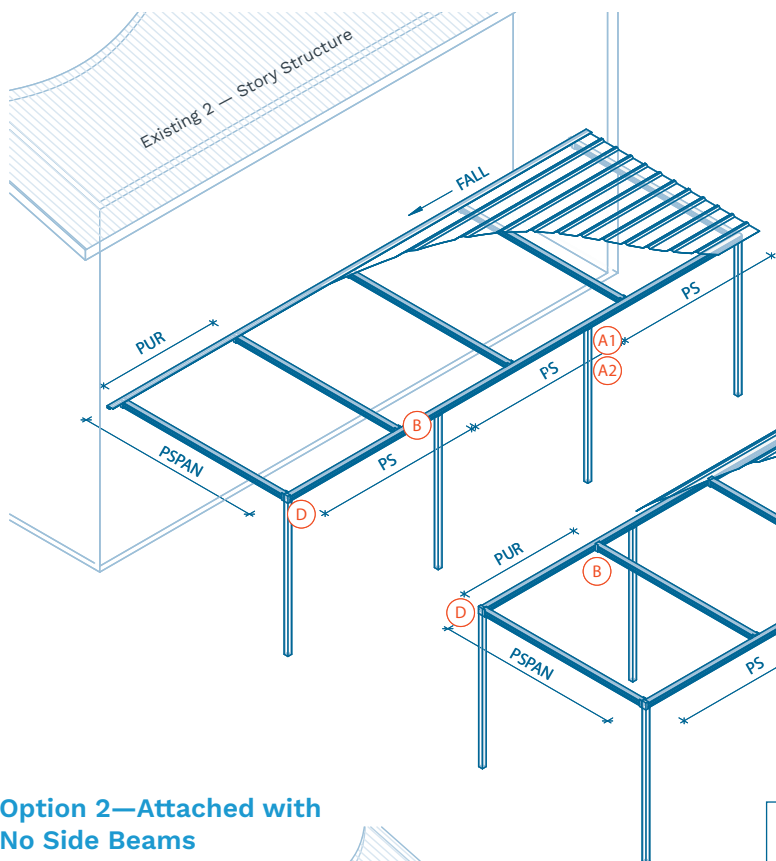
Notes Tables apply to flat patio structures that are attached/freestanding. For designing flat carport structures that are attached/freestanding, refer to the Applicable Coefficient table on page 10.

Walls to Three Sides 1.2 Cp,n				Enclosed 1.6 Cp,n			
Post Spacing (m)							
100x65	150x65	200x65	200x65 Insert	100x65	150x65	200x65	200x65 Insert
3.85	5.60	7.05	8.20	3.50	5.10	6.40	7.45
3.60	5.20	6.55	7.65	3.25	4.75	5.95	6.95
3.35	4.90	6.15	7.20	3.05	4.45	5.60	6.50
3.20	4.65	5.85	6.80	2.90	4.20	5.30	6.20
3.05	4.45	5.60	6.50	2.80	4.06	5.00	5.90
2.95	4.25	5.35	6.25	2.65	3.85	4.70	5.60
2.85	4.15	5.15	6.05	2.55	3.65	4.45	5.30
2.75	4.00	4.90	5.85	2.45	3.50	4.25	5.05
2.65	3.85	4.70	5.60	2.35	3.35	4.05	4.85
2.60	3.70	4.50	5.35	2.25	3.20	3.90	4.65
2.50	3.55	4.35	5.20	2.15	3.10	3.75	4.50
2.40	3.45	4.20	5.00	2.10	3.00	3.65	4.35
2.35	3.35	4.05	4.85	–	–	–	–
–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–
3.40	4.90	6.20	7.20	3.10	4.45	5.60	6.55
3.15	4.55	5.75	6.70	2.85	4.15	5.20	6.10
2.95	4.30	5.40	6.30	2.70	3.90	4.75	5.65
2.80	4.10	5.05	6.00	2.55	3.60	4.40	5.20
2.70	3.90	4.75	5.65	2.35	3.35	4.10	4.90
2.60	3.65	4.45	5.30	2.25	3.20	3.85	4.60
2.45	3.50	4.25	5.05	2.10	3.00	3.65	4.35
2.35	3.30	4.05	4.80	2.00	2.85	3.50	4.15
2.25	3.20	3.85	4.60	1.95	2.75	3.35	4.00
–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–

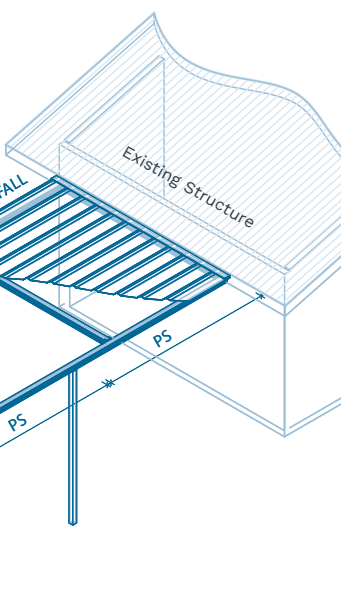
Flat Patio/Carport Designs—Continuous-Span

Cp,n (0.5–1.0)

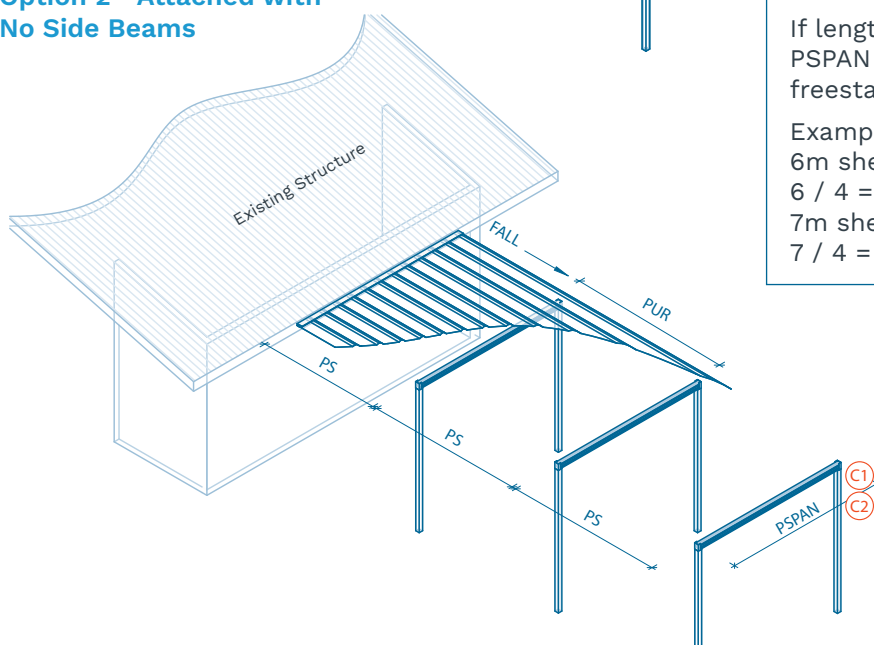
Option 1A—Attached with Side Beams



Option 1B—Attached with Side Beams



Option 2—Attached with No Side Beams



If length of sheet/width of PSPAN > 1.5, posts shall be as per freestanding requirements.

Example:

6m sheet length by 4m PSPAN

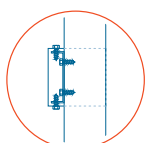
$6 / 4 = 1.5$ (attached rules apply)

7m sheet length by 4m PSPAN

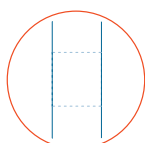
$7 / 4 = 1.75$ (freestanding rules apply)

Legend

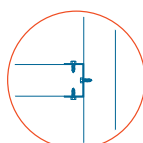
PS Post Spacing
PUR Purlin Spacing
PSPAN Purlin Span



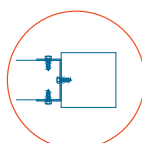
Detail A1
89x89 Post



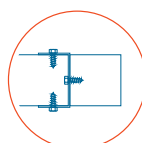
Detail A2
65x65 Post



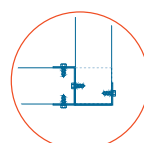
Detail B
Beam to Beam
(T Intersection)



Detail C1
89x89 Post



Detail C2
65x65 Post



Detail D
Beam to Beam
(Corner Intersection)

Flat Patio/Carport Designs—Continuous-Span

Cp,n (0.5-1.0)

Span Table

Wind Class	Beam Size	Purlin Span (mm)	Post Spacing (mm)	Purlin Spacing (mm)	
				Insulated	Single-Skin
N1/N2	100x65	3000	5670	5150	5150
		3600	5340	5150	5150
		4200	5070	4740	4740
		4800	4850	3180	3180
		5400	4660	2230	2230
		6000	4500	1630	1630
		6600	4360	1220	1220
		7200	4240	940	940
		7800	4010	740	740
		8400	3720	590	590
	150x65	3000	8100	5150	5150
		3600	7620	5150	5150
		4200	7240	5150	5150
		4800	6920	5150	5150
		5400	6660	5150	5150
		6000	6430	4730	4730
		6600	6230	3560	3560
		7200	6060	2740	2740
		7800	5590	2150	2150
		8400	5190	1730	1730
	200x65	3000	10100	5150	5150
		3600	9510	5150	5150
		4200	9030	5150	5150
		4800	8310	5150	5150
		5400	7640	5150	5150
		6000	8020	5150	5150
		6600	7770	5150	5150
		7200	7300	5150	5150
		7800	6740	4180	4180
		8400	6260	3350	3350

Notes The Continous-Span has been designed specifically to suit 'Walls to One Side', patio/carport structures. Spans are based on using 50mm Insulated or Single-Skin Roofing. All other sizes will require site specific engineering.

Flat Patio/Carport Designs—Continuous-Span

Cp,n (0.5-1.0)

Span Table

Wind Class	Beam Size	Purlin Span (mm)	Post Spacing (mm)	Purlin Spacing (mm)	
				Insulated	Single-Skin
N3	100x65	3000	5060	4900	4900
		3600	4760	4900	4900
		4200	4520	3360	3360
		4800	4320	2250	2250
		5400	3840	1580	1580
		6000	3450	1150	1150
		6600	3140	860	860
		7200	2880	670	670
		7800	2660	520	520
		8400	2470	420	420
	150x65	3000	7200	4900	4900
		3600	6790	4900	4900
		4200	6450	4900	4900
		4800	6010	4900	4900
		5400	5350	4600	4600
		6000	4810	3350	3350
		6600	4370	2520	2520
		7200	4010	1940	1940
		7800	3700	1530	1530
		8400	3440	1220	1220
	200x65	3000	9000	4900	4900
		3600	8470	4900	4900
		4200	8050	4900	4900
		4800	7260	4900	4900
		5400	6450	4900	4900
		6000	5810	4900	4900
		6600	5280	4890	4890
		7200	4840	3770	3770
		7800	4470	2960	2960
		8400	4150	2370	2370

Notes The Continuous-Span has been designed specifically to suit 'Walls to One Side', patio/carport structures. Spans are based on using 50mm Insulated or Single-Skin Roofing. All other sizes will require site specific engineering.

Flat Patio/Carport Designs—Continuous-Span

Cp,n (0.5-1.0)

Span Table

Wind Class	Beam Size	Purlin Span (mm)	Post Spacing (mm)	Purlin Spacing (mm)	
				Insulated	Single-Skin
N4	100x65	3000	4540	4600	4600
		3600	3950	3760	3760
		4200	3380	2370	2370
		4800	2900	1590	1590
		5400	2630	1110	1110
		6000	2370	810	810
		6600	2150	610	610
		7200	1970	470	470
		7800	1820	370	370
		8400	1690	300	300
	150x65	3000	6430	4600	4600
		3600	5500	4600	4600
		4200	4710	4600	4600
		4800	4120	4600	4600
		5400	3670	3240	3240
		6000	3300	2360	2360
		6600	3000	1780	1780
		7200	2750	1370	1370
		7800	2540	1080	1080
		8400	2300	860	860
	200x65	3000	7960	4600	4600
		3600	6640	4600	4600
		4200	5690	4600	4600
		4800	4980	4600	4600
		5400	4420	4600	4600
		6000	3980	4590	4590
		6600	3620	3450	3450
		7200	3320	2660	2660
		7800	3060	2090	2090
		8400	2840	1670	1670

Flat Patio/Carport Designs—Continuous-Span

Cp,n (0.5–1.0)

Span Table

Wind Class	Beam Size	Purlin Span (mm)	Post Spacing (mm)	Purlin Spacing (mm)	
				Insulated	Single-Skin
C1	100x65	3000	3950	2950	2950
		3600	3290	2950	2950
		4200	2820	2490	2490
		4800	2470	1670	1670
		5400	2190	1170	1170
		6000	1970	850	850
		6600	1790	640	640
		7200	1640	–	–
		7800	1520	–	–
		8400	1410	–	–
	150x65	3000	5500	2950	2950
		3600	4580	2950	2950
		4200	3930	2950	2950
		4800	3440	2950	2950
		5400	3050	2950	2950
		6000	2750	2480	2480
		6600	2500	1860	1860
		7200	2290	1440	1440
		7800	2110	1130	1130
		8400	1960	900	900
	200x65	3000	6640	2950	2950
		3600	5530	2950	2950
		4200	4740	2950	2950
		4800	4150	2950	2950
		5400	3690	2950	2950
		6000	3320	2950	2950
		6600	3020	2950	2950
		7200	2760	2650	2650
		7800	2550	2190	2190
		8400	2370	1760	1760

Notes The Continuous-Span has been designed specifically to suit 'Walls to One Side', patio/carport structures. Spans are based on using 50mm Insulated or Single-Skin Roofing. All other sizes will require site specific engineering.

Flat Patio/Carport Designs—Continuous-Span

Cp,n (0.5-1.0)

Span Table

Wind Class	Beam Size	Purlin Span (mm)	Post Spacing (mm)	Purlin Spacing (mm)	
				Insulated	Single-Skin
C2	100x65	3000	2680	1850	1850
		3600	2240	1850	1850
		4200	1920	1720	1720
		4800	1680	1150	1150
		5400	1490	810	810
		6000	3450	–	–
		6600	3140	–	–
		7200	2880	–	–
		7800	2660	–	–
		8400	2470	–	–
	150x65	3000	3740	1850	1850
		3600	3110	1850	1850
		4200	2670	1850	1850
		4800	2340	1850	1850
		5400	2080	1850	1850
		6000	1870	1720	1720
		6600	1700	1290	1290
		7200	1560	990	990
		7800	1440	780	780
		8400	–	–	–
	200x65	3000	4510	1850	1850
		3600	3760	1850	1850
		4200	3220	1850	1850
		4800	2820	1850	1850
		5400	2510	1850	1850
		6000	2260	1850	1850
		6600	2050	1850	1850
		7200	1880	1820	1820
		7800	1730	1520	1520
		8400	1610	1520	1520

Flat Patio/Carport Designs—Continuous-Span

Cp,n (0.5-1.0)

Span Table

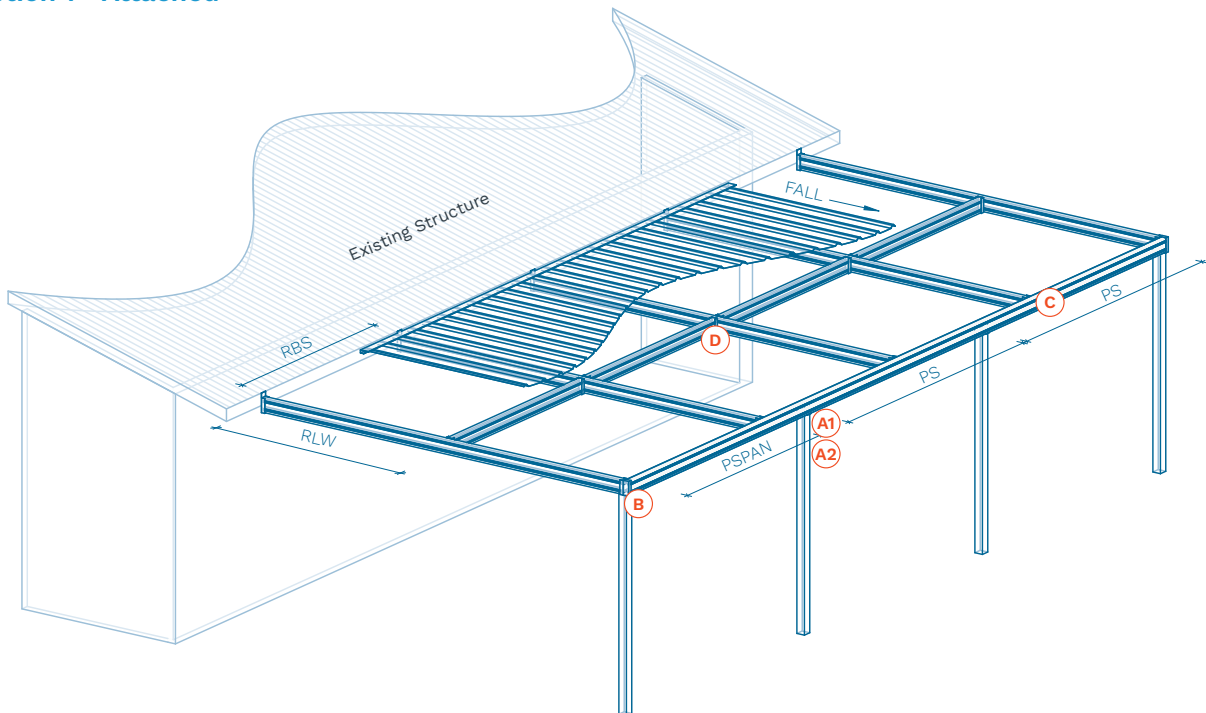
Wind Class	Beam Size	Purlin Span (mm)	Post Spacing (mm)	Purlin Spacing (mm)	
				Insulated	Single-Skin
C3	100x65	3000	1840	900	900
		3600	1530	900	900
		4200	—	—	—
		4800	—	—	—
		5400	—	—	—
		6000	—	—	—
		6600	—	—	—
		7200	—	—	—
		7800	—	—	—
		8400	—	—	—
	150x65	3000	2560	900	900
		3600	2130	900	900
		4200	1830	900	900
		4800	1600	900	900
		5400	1420	900	900
		6000	—	—	—
		6600	—	—	—
		7200	—	—	—
		7800	—	—	—
		8400	—	—	—
	200x65	3000	3090	900	900
		3600	2570	900	900
		4200	2210	900	900
		4800	1930	900	900
		5400	1720	900	900
		6000	1540	900	900
		6600	1400	900	900
		7200	—	—	—
		7800	—	—	—
		8400	—	—	—

Notes The Continuous-Span has been designed specifically to suit 'Walls to One Side', patio/carport structures. Spans are based on using 50mm Insulated or Single-Skin Roofing. All other sizes will require site specific engineering.

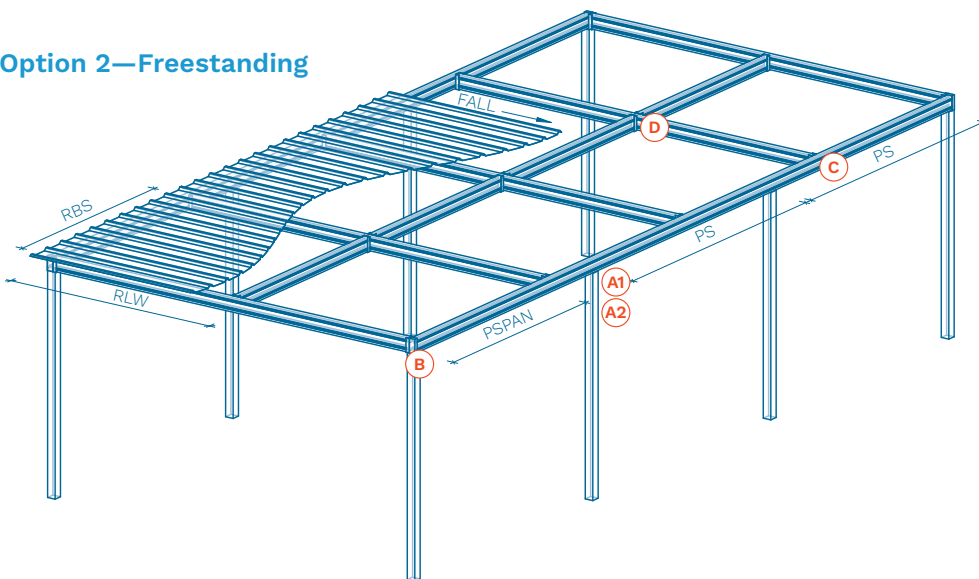
Flat Patio/Carport Designs—Multi-Spans

Open, Partially Enclosed and Enclosed Cp,n (0.5-1.6)

Option 1—Attached



Option 2—Freestanding



Legend

PS	Post Spacing
RBS	Rafter Beam Spacing
PSPAN	Purlin Span
RLW	Roof Load Width

How to Calculate Roof Load Width

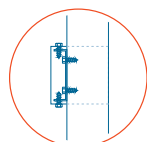
$$RLW = RS/2 + OH$$

Example:

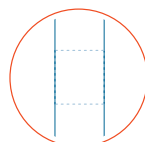
$$3.0\text{m Roof Sheet}/2 = 1.5\text{m}$$

$$1.5\text{m} + 0.5\text{m Over Hang} = 2.0\text{m}$$

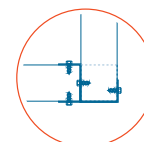
Roof Load Width



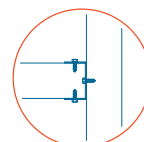
Detail A1
89x89 Post



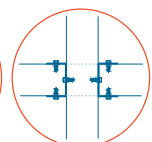
Detail A2
65x65 Post



Detail B
Beam to Beam
(Corner Intersection)



Detail C
Beam to Beam
(T Intersection)



Detail D
Beam to Beam
(Cross Intersection)

Flat Patio/Carport Designs—Multi-Span

Open, Partially Enclosed Cp,n (0.5-1.2)

Span Table

Wind Class	Roof Load Width (mm)	Rafter Beam Spacing (mm)			No. of Purlins	Purlin Span (mm)			Post Spacing (mm)		
		100x65	150x65	200x65		100x65	150x65	200x65	100x65	150x65	200x65
N1/ N2	2325	4760	6600	7940	1	4760	6600	7940	6840	8850	8880
	2525	4100	6090	7330	1	4390	6090	7330	5810	8620	8650
	2725	3020	5650	6800	1	4070	5650	6800	4410	8410	8440
	2925	2280	5270	6340	1	3800	5270	6340	3390	8210	8230
	3125	1750	4940	5940	1	3560	4940	5940	2640	8020	8040
	3325	1360	3970	5590	1	3340	4650	5590	2090	7620	7870
	3525	1080	3140	5280	1	3160	4390	5280	–	6440	7700
	3725	–	2520	4890	1	2990	4150	5000	–	5490	7550
	3925	–	2040	3970	1	2840	3940	4750	–	4720	7400
	4125	–	1670	3250	1	2700	3760	4520	–	4090	7260
	4325	–	1390	2690	1	2580	3580	4320	–	3560	6880
	4525	–	1160	2250	1	2460	3430	4130	–	3120	6030
	4725	–	–	1890	2	3530	4900	5900	–	2760	5320
	4925	–	–	1600	2	3390	4700	5660	–	2440	4720
N3	2325	3910	5430	6540	1	3910	5430	6540	5620	6890	6900
	2525	3320	5010	6030	1	3600	5010	6030	5420	6710	6720
	2725	2850	4640	5590	1	3340	4640	5590	4410	6540	6550
	2925	2280	4330	5220	1	3120	4330	5220	3390	6390	6400
	3125	1750	4060	4890	1	2920	4060	4890	2640	6240	6250
	3325	1360	3710	4600	1	2740	3810	4600	2090	5460	6110
	3525	1080	3140	4340	1	2590	3600	4340	–	4610	5980
	3725	–	2520	4110	1	2450	3410	4110	–	3930	5860
	3925	–	2040	3880	1	2330	3240	3900	–	3380	5750
	4125	–	1670	3250	1	2210	3080	3710	–	2920	5640
	4325	–	1390	2690	1	2110	2940	3540	–	2550	4930
	4525	–	1160	2250	2	3020	4200	5060	–	2230	4320
	4725	–	–	1890	2	2890	4020	4850	–	1970	3810
	4925	–	–	1600	2	2780	3960	4650	–	–	3370
N4	2325	2700	4530	5460	1	3260	4530	5460	4680	5560	5570
	2525	2290	4170	5030	1	3000	4170	5030	4510	5410	5420
	2725	1960	3810	4660	1	2780	3870	4660	4220	5280	5290
	2925	1700	3300	4350	1	2590	3610	4350	3390	5150	5160
	3125	1490	2890	4070	1	2430	3380	4070	2640	4660	5040
	3325	1320	2560	3720	1	2280	3180	3830	2090	3890	4930
	3525	1080	2270	3310	1	2150	3000	3610	–	3280	4830
	3725	–	2040	2970	1	2040	2840	3420	–	2800	4730
	3925	–	1840	2670	1	1940	2690	3250	–	2400	4640
	4125	–	1660	2420	1	1840	2560	3090	–	2080	4020
	4325	–	1390	2200	2	2630	3660	4410	–	1810	3510
	4525	–	1160	2010	2	2520	3500	4220	–	–	3070
	4725	–	–	1840	2	2410	3350	4040	–	–	2710
	4925	–	–	1600	2	2310	3220	3880	–	–	2400

Notes The Multi-Span has been designed specifically to suit 'Walls to One, Two, Three & Open Four Sides' patio/carport structures. Spans are based on using all Insulated or Single-Skin Roofing.

Flat Patio/Carport Designs—Multi-Span

Open, Partially Enclosed $C_{p,n}$ (0.5-1.2)

Span Table

Wind Class	Roof Load Width (mm)	Rafter Beam Spacing (mm)				Purlin Span (mm)			Post Spacing (mm)		
		100x65	150x65	200x65	No. of Purlins	100x65	150x65	200x65	100x65	150x65	200x65
C1	2325	3910	5430	6540	1	3910	5430	6540	5280	6890	6900
	2525	3320	5010	6030	1	3600	5010	6030	4170	6710	6720
	2725	2850	4640	5590	1	3340	4640	5590	3350	6540	6550
	2925	2280	4330	5220	1	3120	4330	5220	2730	6390	6400
	3125	1750	4060	4890	1	2920	4060	4890	2260	6240	6250
	3325	1360	3710	4600	1	2740	3810	4600	1890	5460	6110
	3525	1080	3140	4340	1	2590	3600	4340	–	4610	5980
	3725	–	2520	4110	1	2450	3410	4110	–	3930	5860
	3925	–	2040	3880	1	2330	3240	3900	–	3380	5750
	4125	–	1670	3250	1	2210	3080	3710	–	2290	5640
	4325	–	1390	2690	2	3160	4390	5290	–	2550	4930
	4525	–	1160	2250	2	3020	4200	5060	–	2230	4320
	4725	–	–	1890	2	2890	4020	4850	–	1970	3810
	4925	–	–	1600	2	2780	3860	4650	–	–	3370
C2	2325	2700	4350	5460	1	3260	4530	5460	4680	5560	5570
	2525	2290	4170	5030	1	3000	4170	5030	4170	5410	5420
	2725	1960	3810	4660	1	2780	3870	4660	3350	5280	5290
	2925	1700	3300	4350	1	2590	3610	4350	2730	5150	5160
	3125	1490	2890	4070	1	2430	3380	4070	2260	4660	5040
	3325	1320	2560	3720	1	2280	3180	3830	1890	3890	4930
	3525	1080	2280	3310	2	3220	4480	5400	–	3280	4830
	3725	–	2040	2970	2	3050	4240	5110	–	2800	4730
	3925	–	1840	2670	2	2900	4030	4860	–	2400	4640
	4125	–	1660	2420	2	2760	3840	4620	–	2080	4020
	4325	–	1390	2200	2	2630	3660	4410	–	1810	3510
	4525	–	1160	2010	2	2520	3500	4220	–	–	3070
	4725	–	–	1840	2	2410	3350	4040	–	–	2710
	4925	–	–	1600	2	2310	3220	3880	–	–	2400
C3	2325	1860	3620	4550	1	2710	3780	4550	3900	4540	4540
	2525	1580	3070	4460	2	3740	5200	6270	3340	4420	4420
	2725	1360	2630	3830	2	3470	4830	5810	2730	4310	4310
	2925	1180	2280	3330	2	3230	4500	5420	2260	4030	4210
	3125	1030	2000	2910	2	3030	4210	5080	1890	3330	4110
	3325	–	1770	2570	2	2850	3960	4770	–	2780	4020
	3525	–	1570	2290	2	2690	3740	4510	–	2350	3940
	3725	–	1410	2050	2	2540	3540	4260	–	2000	3860
	3925	–	1270	1850	3	3210	4470	5390	–	–	3330
	4125	–	1150	1670	3	3060	4250	5130	–	–	2880
	4325	–	1040	1520	3	2920	4060	4890	–	–	2510
	4525	–	–	1390	3	2790	3880	4680	–	–	2200
	4725	–	–	1270	3	2670	3720	4480	–	–	1930
	4925	–	–	1170	3	2560	3570	4300	–	–	–

Flat Patio/Carport Designs—Multi-Span

Enclosed Cp,n (1.1-1.6)

Span Table

Wind Class	Roof Load Width (mm)	Rafter Beam Spacing (mm)			No. of Purlins	Purlin Span (mm)			Post Spacing (mm)		
		100x65	150x65	200x65		100x65	150x65	200x65	100x65	150x65	200x65
N1/ N2	2325	3860	4360	5270	1	3960	4360	5270	5670	5680	5690
	2525	3270	4020	4850	1	3640	4020	4850	5090	5470	5480
	2725	2720	3720	4490	1	3370	3720	4490	4070	5290	5290
	2925	2200	3460	4180	1	3140	3460	4180	3310	5120	5120
	3125	1750	4140	5890	1	2940	4870	5890	2640	4960	4970
	3325	1360	3660	5330	1	2760	4580	5530	2090	4820	4830
	3525	1080	3140	4740	1	2600	4320	5210	—	4690	4700
	3725	—	2520	4250	1	2460	4080	4930	—	4570	4580
	3925	—	2040	3820	1	2340	3870	4680	—	4070	4470
	4125	—	1670	3250	1	2220	3690	4450	—	3510	4360
	4325	—	1390	2690	2	3190	3510	4240	—	3050	4270
	4525	—	1160	2250	2	3040	4480	5420	—	2670	4180
	4725	—	—	1890	2	2910	4290	5190	—	2350	4090
	4925	—	—	1600	2	2800	4120	4970	—	2080	4010
N3	2325	2430	4710	6850	1	4410	6540	7850	4000	4490	4500
	2525	2060	3990	5810	1	4250	6360	7590	3140	4330	4330
	2725	1700	3430	4990	1	4110	6130	7360	2520	4180	4190
	2925	1380	2970	4330	1	3900	6680	8030	2040	4050	4050
	3125	1130	2600	3790	1	3660	6530	7820	—	3930	3930
	3325	—	2300	3350	1	3440	6390	7630	—	3820	3820
	3525	—	2050	2980	1	3250	6230	7450	—	3460	3720
	3725	—	1830	2670	1	3070	6630	7970	—	2940	3620
	3925	—	1650	2410	2	4180	6520	7810	—	2520	3540
	4125	—	1430	2180	2	4090	6400	7650	—	2180	3450
	4325	—	1240	1980	2	3960	6290	7510	—	1890	3380
	4525	—	1080	1810	2	3780	6140	7370	—	—	3220
	4725	—	—	1660	2	3630	6510	7800	—	—	2840
	4925	—	—	1530	2	3480	6420	7670	—	—	2510
N4	2325	1610	3130	3080	1	3890	8710	10930	2580	3660	3660
	2525	1370	2650	2610	1	3730	8750	10980	2030	3520	3530
	2725	1110	2280	2240	1	3520	8510	10670	—	3410	3410
	2925	—	1980	1940	1	3280	8560	10740	—	3300	3300
	3125	—	1730	1700	1	3070	8610	10790	—	3180	3200
	3325	—	1530	1500	1	2890	8650	10840	—	2650	3110
	3525	—	1360	1340	2	3860	8680	10880	—	2240	3030
	3725	—	1220	1200	2	3760	8510	10670	—	1900	2950
	3925	—	1080	1080	2	3660	8540	10710	—	—	2880
	4125	—	—	—	2	3480	8580	10760	—	—	2740
	4325	—	—	—	2	3320	8610	10800	—	—	2380
	4525	—	—	—	2	3180	8640	10830	—	—	2090
	4725	—	—	—	2	3050	8500	10660	—	—	1840
	4925	—	—	—	2	2920	8530	10700	—	—	—

Notes The Multi-Span has been designed specifically to suit 'Walls to One, Two, Three & Open Four Sides' patio/carport structures. Spans are based on using all Insulated or Single-Skin Roofing.

Flat Patio/Carport Designs—Multi-Span

Enclosed Cp,n (1.1-1.6)

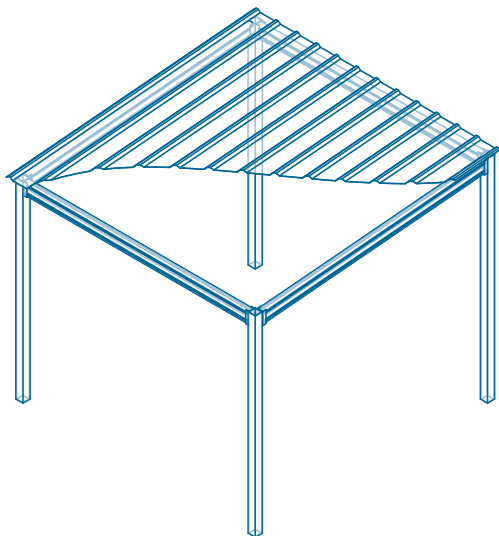
Span Table

Wind Class	Roof Load Width (mm)	Rafter Beam Spacing (mm)			No. of Purlins	Purlin Span (mm)			Spacing of Edge Beam posts (mm)		
		100x65	150x65	200x65		100x65	150x65	200x65	100x65	150x65	200x65
C1	2325	2430	4360	5270	1	3130	4360	5270	4000	4490	4500
	2525	2060	3990	4850	1	2880	4020	4850	3140	4330	4330
	2725	1700	3430	4490	1	2670	3720	4490	2520	4180	4190
	2925	1380	2970	4180	1	2480	3460	4180	2040	4050	4050
	3125	1130	2600	3790	2	3490	4870	5890	–	3930	3930
	3325	–	2300	3350	2	3280	4580	5530	–	3820	3820
	3525	–	2050	2980	2	3100	4320	5210	–	3460	3720
	3725	–	1830	2670	2	2930	4080	4930	–	2940	3620
	3925	–	1650	2410	2	2780	3870	4680	–	2520	3540
	4125	–	1430	2180	2	2640	3690	4450	–	2180	3450
	4325	–	1240	1980	2	2520	3510	4240	–	1890	3380
	4525	–	1080	1810	3	3220	4480	5420	–	–	3220
	4725	–	–	1660	3	3080	4290	5190	–	–	2840
	4925	–	–	1530	3	2950	4120	4970	–	–	2510
C2	2325	1610	3130	4560	2	4570	6540	7850	2580	3660	3660
	2525	1370	2650	3870	2	4450	6360	7590	2030	3520	3530
	2725	1110	2280	3320	2	4430	6130	7360	–	3410	3410
	2925	–	1980	2880	3	4670	6680	8030	–	3300	3300
	3125	–	1730	2520	3	4560	6530	7820	–	3180	3200
	3325	–	1530	2230	3	4460	6390	7630	–	2650	3110
	3525	–	1360	1980	3	4380	6230	7450	–	3460	3030
	3725	–	1220	1780	4	4640	6630	7970	–	2240	2950
	3925	–	1650	1600	4	4550	6520	7810	–	1900	2880
	4125	–	1080	1450	4	4480	6400	7650	–	–	2740
	4325	–	–	1320	4	4400	6290	7510	–	–	2380
	4525	–	–	1200	4	4340	6140	7370	–	–	2090
	4725	–	–	1100	4	4550	6510	7800	–	–	1840
	4925	–	–	1020	4	4480	6420	7670	–	–	–
C3	2325	1090	2110	3080	9	6070	8710	10930	–	3000	3000
	2525	–	1790	2610	10	6100	8750	10980	–	2890	2890
	2725	–	1540	2240	10	5930	8510	10670	–	2800	2800
	2925	–	1340	1940	11	5970	8560	10740	–	2590	2710
	3125	–	1170	1700	12	6000	8610	10790	–	2140	2630
	3325	–	1030	1500	13	6020	8650	10840	–	–	2550
	3525	–	–	1340	14	6050	8680	10880	–	–	2490
	3725	–	–	1200	14	5930	8510	10670	–	–	2420
	3925	–	–	1080	15	5960	8540	10710	–	–	2130
	4125	–	–	–	16	5980	8580	10760	–	–	1830
	4325	–	–	–	17	6000	8610	10800	–	–	–
	4525	–	–	–	18	6020	8640	10830	–	–	–
	4725	–	–	–	18	5930	8500	10660	–	–	–
	4925	–	–	–	19	5950	8530	10700	–	–	–

Flat Patio/Carport Designs—Freestanding Bolt to Slab (Standard Sizes)

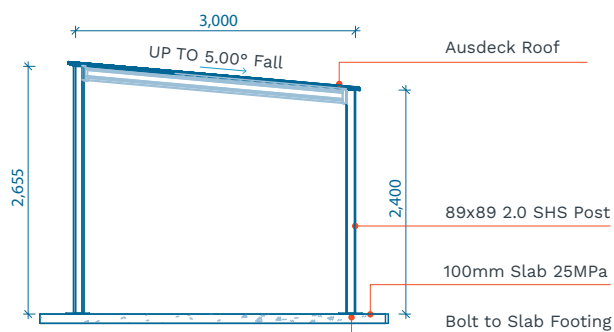
N1-N3

Option 1—3x3m Freestanding



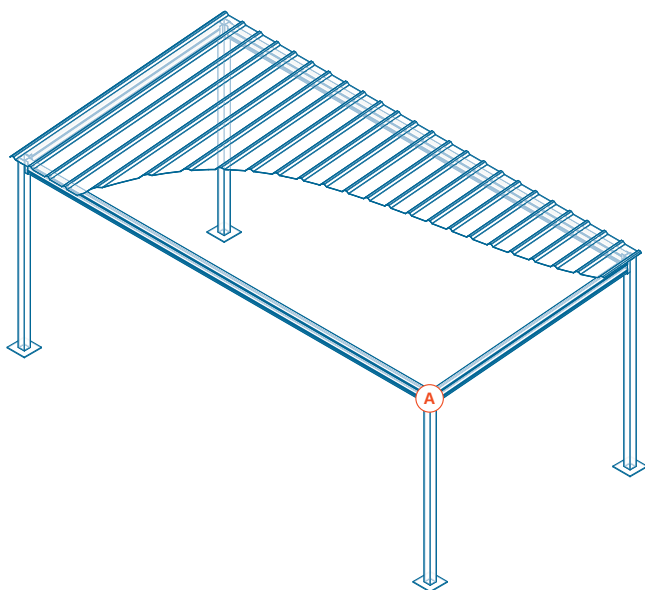
Notes Beam Cantilevers have not been incorporated into Freestanding Bolt to Slab (Standard & Custom) Structures. Freestanding Bolt to Slab require side beams for bracing. 2 x Tek 12g screws required to each side of the bracket. 4 x Tek 12g screws required to each post.

Elevation



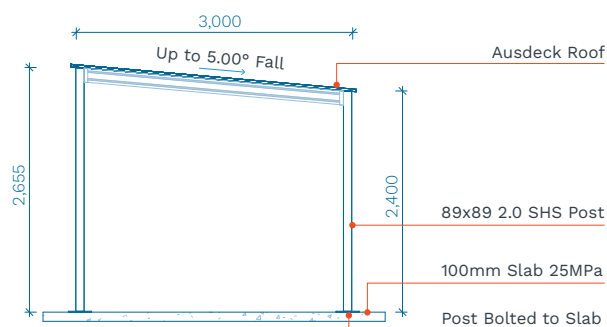
Beam Size: 150x65 Shurelock Beam
Roof: Min 50mm Insulated or 0.48 V-Line

Option 2—3x6m Freestanding

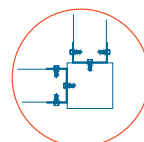


Notes Beam Cantilevers have not been incorporated into Freestanding Bolt to Slab (Standard & Custom) Structures. Freestanding Bolt to Slab require side beams for bracing. 2 x Tek 12g screws required to each side of the bracket. 4 x Tek 12g screws required to each post.

Elevation



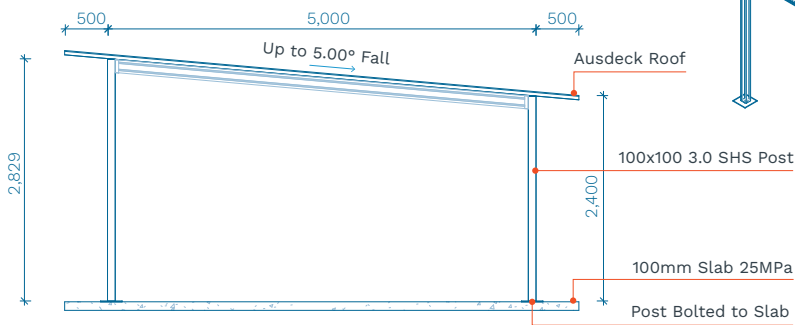
Beam Size: 150x65 Shurelock Beam
Roof: Min 50mm Insulated or 0.48 V-Line



Detail A
Beam to Beam
(Corner Intersection)
89x89 Post

Option 3—6x6m Freestanding

Elevation

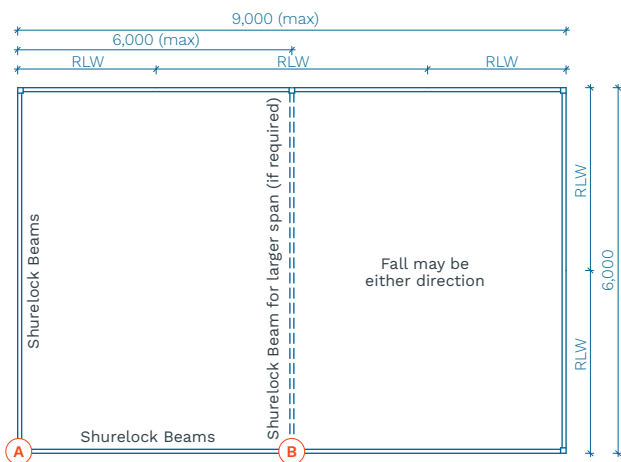


Beam Size: 150x65 Shurelock Beam
Roof: Min 50mm Insulated or 0.48 V-Line

Notes Beam Cantilevers have not been incorporated into Freestanding Bolt to Slab (Standard & Custom) Structures. Freestanding Bolt to Slab require side beams for bracing. 2 x Tek 12g screws required to each side of the bracket. 4 x Tek 12g screws required to each post.

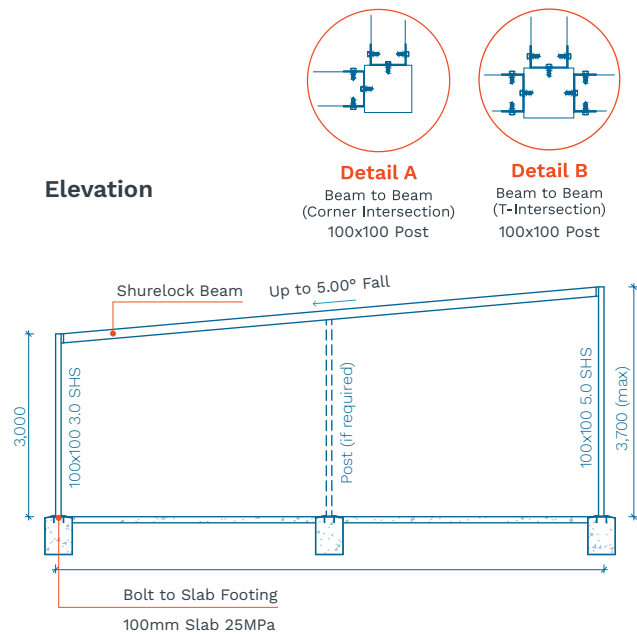
Flat Patio/Carport Designs—Freestanding Bolt to Slab (Custom Sizes)

N1–N3



Notes 3 x Tek 12g screws required to each side of the bracket. 6 x Tek 12g screws required to each post.

Elevation



Span Table

Wind Class	Roof Load Width (mm)	Max. Beam Spacing (mm)		
		100x65	150x65	200x65
N1/N2/N3	1500	3000	—	—
	2250	—	4500	—
	3000	—	—	6000

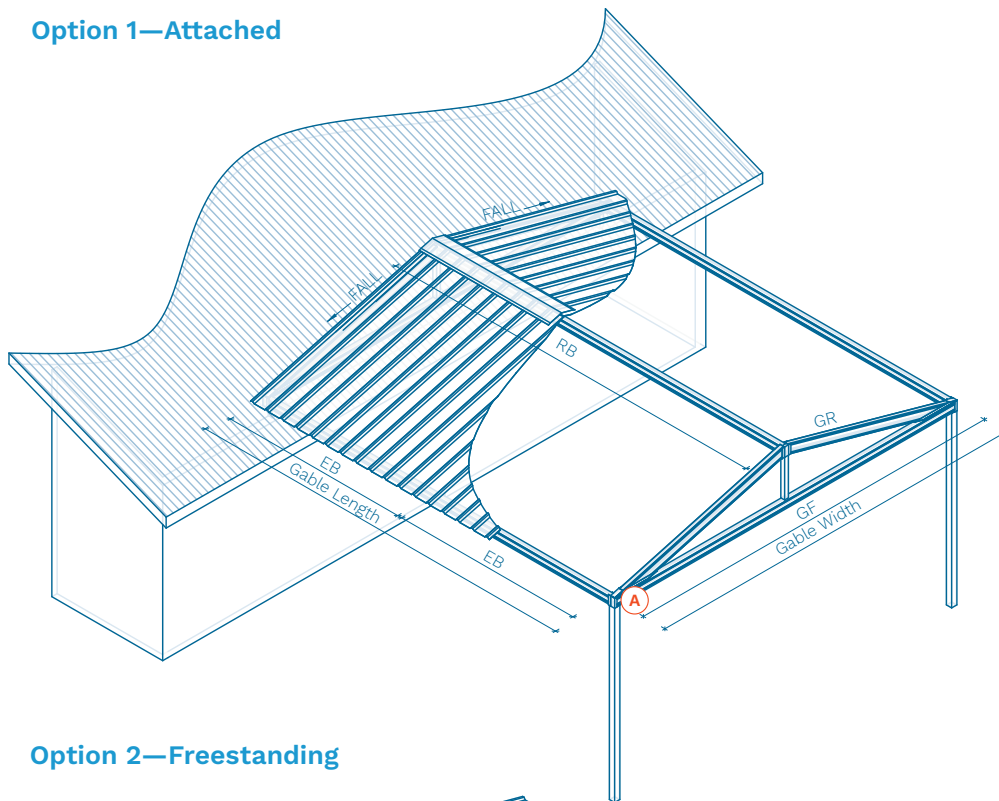
Notes Please refer to roof span and apply the $C_{p,n}$ 0.7 for patios or $C_{p,n}$ 1.0 carport application. 12mm base plate 250x250 square 4/M16 chemsets 125mm embedment. N25/20/100 450x450x600 deep mass concrete footings. Beam Cantilevers have not been incorporated into Freestanding Bolt to Slab (Standard & Custom) Structures.

Gable Spans

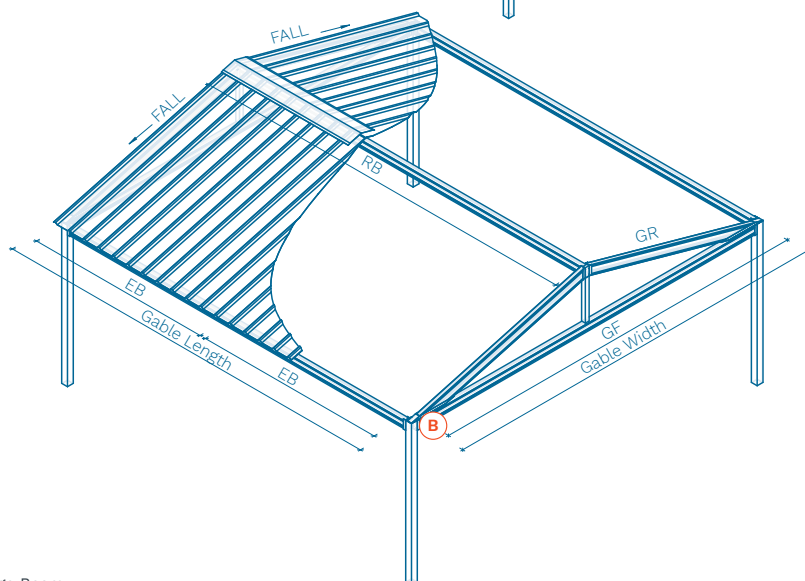
Gable Patio/Carport Designs - Single Bay

Open, Partially Enclosed and Enclosed Cp,n (1.0-1.6)

Option 1—Attached

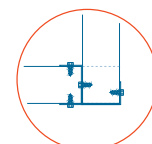


Option 2—Freestanding

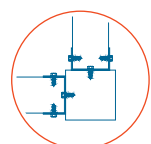


Legend

- EB Edge Beam
- RB Ridge Beam
- GR Gable Rafter Beam
- GF Gable Frame



Detail A
Beam to Beam
(Corner Intersection)



Detail B
Beam to Beam
(Corner Intersection)
89x89 Post

Gable Patio/Carport Designs – Single Bay

Open, Partially Enclosed and Enclosed Cp,n (1.0-1.6)

Span Table

	Gable Width (mm)	Gable Length (mm)	Edge Beam	Ridge Beam	Rafter Beams	Gable Frame Type	Post Attached	Post Freestanding
N1/ N2/ N3	Up to 4000	Up to 4000	100x65	100x65	–	GF1	65x65 2.0 ALI	89x89 2.0 SHS
	4000 to 7000	4000 to 6000	150x65	150x65	–	GF1	65x65 2.0 ALI	100x100 3.0 SHS
	7000 to 8500	6000 to 8000	200x65	200x65	100x65	GF1	89x89 2.0 SHS	100x100 3.0 SHS
N4	Up to 4000	Up to 4000	150x65	150x65	100x65	GF2	65x65 2.0 ALI	100x100 3.0 SHS
	4000 to 7000	4000 to 6000	200x65	200x65	150x65	GF2	65x65 2.0 ALI	100x100 3.0 SHS

Notes This table is designed for Single Bay Gable Structures with a min pitch of 10deg and a max pitch of 30deg. Footing details are based on the assumption of 12kPa suction into clay soil. Gable Frame should match the Edge Beam.

Open, Partially Enclosed Cp,n (1.0-1.6)

Span Table

	Gable Width (mm)	Gable Length (mm)	Purlin Size	No. of Purlins Per Side	Edge Beam	Ridge Beam	Rafter Beams	Gable Frame Type	Enclosed Post Attached	Non-Enclosed Post Freestanding or Attached
C1	4000	4000	–	–	100x65	100x65	100x65	GF2	89x89 2.0 SHS	124x124 4.0 SHS
	4000	5000	–	–	150x65	150x65	150x65	GF2	89x89 2.0 SHS	124x124 4.0 SHS
	4000	6000	–	–	200x65	200x65	200x65	GF2	89x89 2.0 SHS	124x124 4.0 SHS
	4000	7000	–	–	200x65	200x65	200x65	GF2	89x89 2.0 SHS	124x124 4.0 SHS
	6000	4000	100x65	1	100x65	100x65	200x65	GF3	89x89 2.0 SHS	124x124 4.0 SHS
	6000	5000	150x65	1	150x65	150x65	200x65	GF3	89x89 2.0 SHS	124x124 4.0 SHS
	6000	6000	200x65	1	200x65	200x65	200x65	GF3	89x89 2.0 SHS	124x124 4.0 SHS
	6000	7000	200x65	1	200x65	200x65	200x65	GF3	89x89 2.0 SHS	124x124 4.0 SHS
	8000	4000	100x65	1	100x65	100x65	150x65	GF3	89x89 2.0 SHS	124x124 4.0 SHS
	8000	5000	150x65	1	150x65	150x65	150x65	GF3	89x89 2.0 SHS	124x124 4.0 SHS
	8000	6000	200x65	1	200x65	200x65	200x65	GF3	89x89 2.0 SHS	124x124 4.0 SHS
	8000	7000	200x65	1	200x65	200x65	200x65	GF3	89x89 2.0 SHS	124x124 4.0 SHS

Notes This table is designed for Single Bay Gable Structures with a min pitch of 10deg and a max pitch of 30deg. Footing details are based on the assumption of 12kPa suction into clay soil. Gable Frame should match the Edge Beam.

Gable Patio/Carport Designs – Single Bay (continued)

Open, Partially Enclosed Cp,n (1.0-1.6)

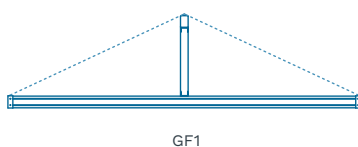
Span Table

	Gable Width (mm)	Gable Length (mm)	Purlin Size	No. of Purlins Per Side	Edge Beam	Ridge Beam	Rafter Beams	Gable Frame Type	Enclosed	Non-Enclosed
									Post Attached	Post Freestanding or Attached
C2	4000	4000	–	–	150x65	150x65	150x65	GF2	89x89 2.0 SHS	124x124 4.0 SHS
	4000	5000	150x65	1	150x65	150x65	200x65	GF2	89x89 2.0 SHS	124x124 4.0 SHS
	4000	6000	200x65	1	200x65	200x65	200x65	GF3	89x89 2.0 SHS	124x124 4.0 SHS
	6000	4000	150x65	1	150x65	150x65	200x65	GF2	89x89 2.0 SHS	124x124 4.0 SHS
	6000	5000	200x65	2	200x65	200x65	200x65	GF2	89x89 2.0 SHS	124x124 4.0 SHS
	8000	4000	100x65	3	100x65	100x65	200x65	GF3	89x89 2.0 SHS	124x124 4.0 SHS
C3	4000	4000	100x65	2	100x65	100x65	150x65	GF2	89x89 2.0 SHS	124x124 4.0 SHS
	4000	5000	100x65	2	100x65	100x65	150x65	GF2	89x89 2.0 SHS	124x124 4.0 SHS
	4000	6000	100x65	2	150x65	150x65	200x65	GF2	89x89 2.0 SHS	124x124 4.0 SHS
	6000	4000	100x65	3	100x65	100x65	100x65	GF3	89x89 2.0 SHS	124x124 4.0 SHS
	6000	5000	150x65	3	150x65	150x65	150x65	GF3	89x89 2.0 SHS	124x124 4.0 SHS
	6000	6000	150x65	3	150x65	150x65	150x65	GF3	89x89 2.0 SHS	124x124 4.0 SHS
	8000	4000	100x65	2	100x65	100x65	150x65	GF3	89x89 2.0 SHS	124x124 4.0 SHS
	8000	5000	150x65	4	150x65	150x65	200x65	GF3	89x89 2.0 SHS	124x124 4.0 SHS
	8000	6000	150x65	4	150x65	150x65	200x65	GF3	89x89 2.0 SHS	124x124 4.0 SHS

Notes This table is designed for Single Bay Gable Structures with a min pitch of 10deg and a max pitch of 30deg. Footing details are based on the assumption of 12kPa suction into clay soil. Gable Frame should match the Edge Beam.

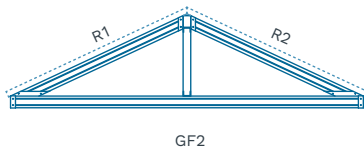
Option A—Gable Frame 1

Suitable for Non-Cyclonic



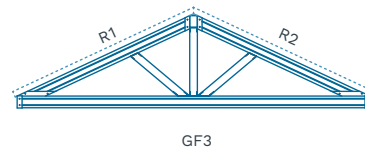
Option B—Gable Frame 2

Suitable for Cyclonic



Option C—Gable Frame 3

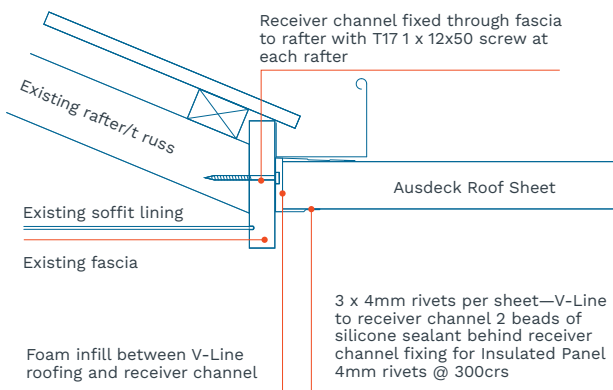
Suitable for Cyclonic



Patio and Carport Connection Details

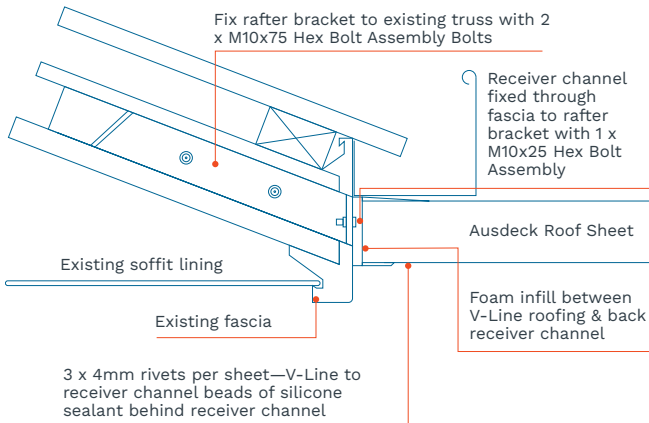
Receiver Channel Connections

Receiver Channel to Timber Fascia



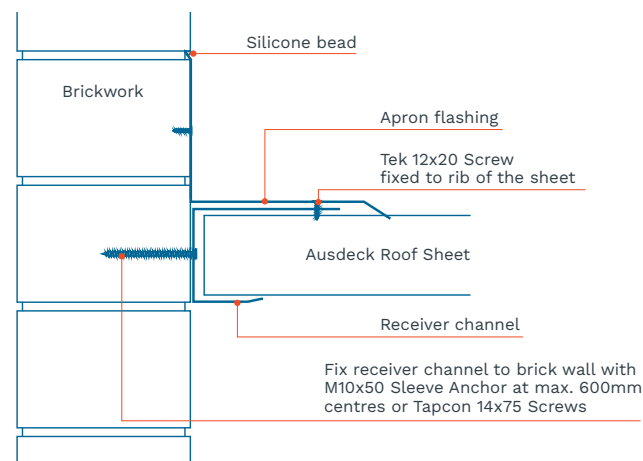
Fix the receiver channel every 600mm to the timber fascia with T17 12x25 screw and 1 x T17 12x50 screw per rafter.

Receiver Channel to Steel Fascia with Rafter Bracket



Every 900mm fit a fascia rafter bracket to existing rafter and bolt through to the receiver channel.

Receiver Channel to Brick/Masonry Wall

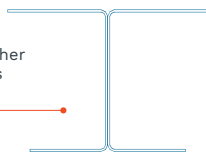


Fix the receiver channel every 600mm to the wall with M10x50 Sleeve Anchor for the brickwork that you are attaching to. Or fix Tapcon 14x75 screw every 450mm (not suitable for structures with no eaves or two storey with blueboard over brick).

Receiver Channel to Receiver Channel Connections

Back to Back Receiver Channel Using No Reinforcement

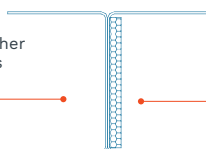
Fix receiver channel together using 5mm diameter bolts
Max 500mm centres



Wind Class	Max Spans (mm)
N1, N2, N3, N4	3400
C1, C2	2950
C3	2600

Back to Back Receiver Channel Using Single Reinforcement Bar

Fix receiver channel together using 5mm diameter bolts
Max 500mm centres

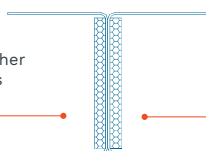


60mm x 5mm flat reinforcement bar

Wind Class	Max Spans (mm)
N1, N2, N3, N4	3500
C1, C2	3000
C3	2650

Back to Back Receiver Channel Using Double Reinforcement Bar

Fix receiver channel together using 5mm diameter bolts
Max 500mm centres



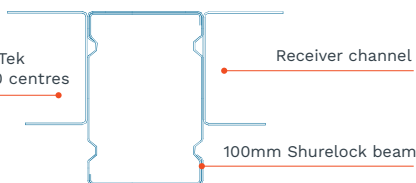
60mm x 5mm flat reinforcement bar

Wind Class	Max Spans (mm)
N1,N2,N3, N4	3700
C1, C2	3200
C3	2800

Receiver Channel to Beam Connections

100mm

Fix receiver channel to Shurelock beam using Tek 12-14x20 Screws @ 300 centres



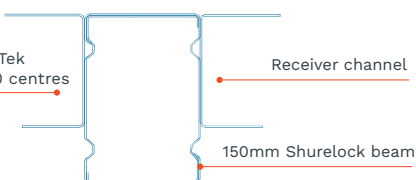
Receiver channel

100mm Shurelock beam

Wind Class	Max Spans (mm)
N1, N2, N3, N4	5200
C1, C2	4500
C3	3950

150mm

Fix receiver channel to Shurelock beam using Tek 12-14x20 Screws @ 300 centres



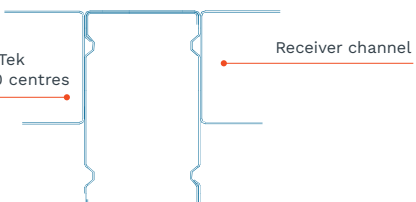
Receiver channel

150mm Shurelock beam

Wind Class	Max Spans (mm)
N1, N2, N3, N4	6800
C1, C2	5900
C3	5150

200mm

Fix receiver channel to Shurelock beam using Tek 12-14x20 Screws @ 300 centres



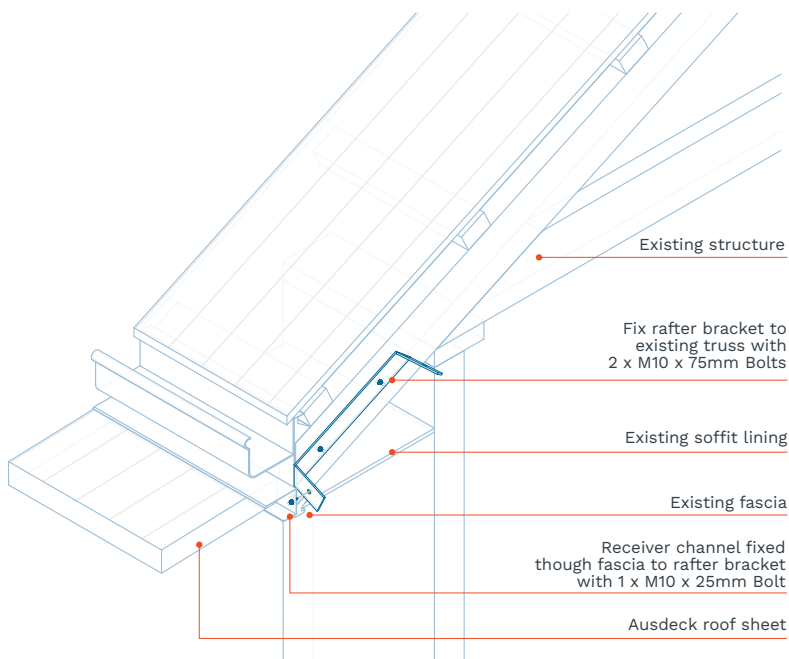
Receiver channel

Wind Class	Max Spans (mm)
N1, N2, N3, N4	8000
C1, C2	6950
C3	6100

Bracket Connections (Attaching to Existing Structures)

Rafter Bracket

(To suit Steel Fascia)



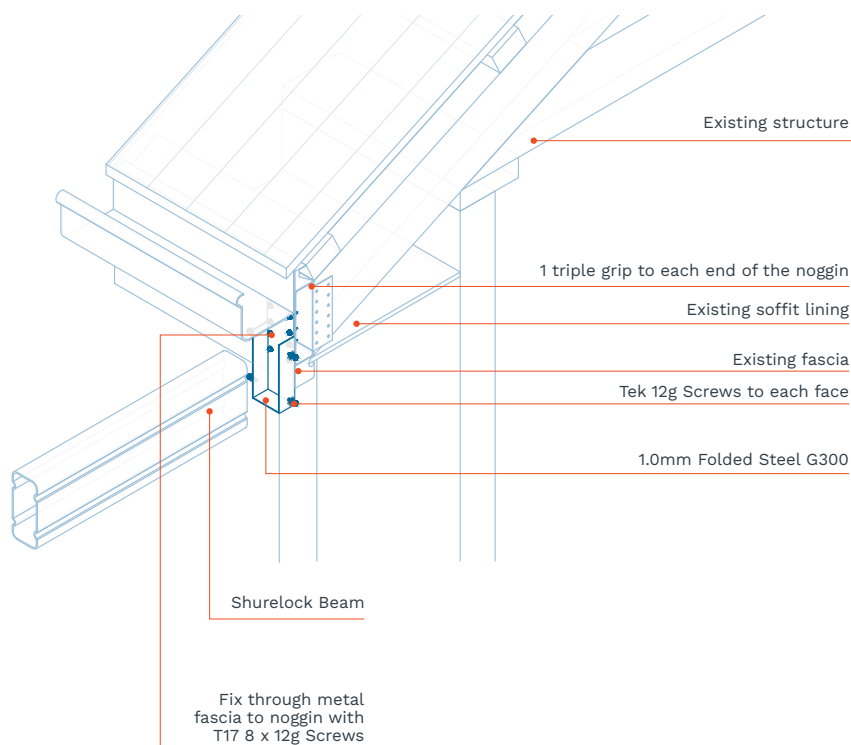
Max. Tributary Area—Rafter Bracket

Wind Class	Max. Area—m ²	
	Open/Partially Enclosed	Enclosed
N2	12.0	7.92
N3	7.5	4.95
N4	5.0	3.3
C1	7.5	4.95
C2	5.0	3.3
C3	3.75	2.47

*Recommended Fixings: 2 x M10x75 Hex Bolt Assembly Hex Bolt and 1 x M10x25 Hex Bolt Assembly

Fascia Hanging Bracket

(To suit 100mm, 150mm, 200mm Beam)



Max. Tributary Area—Fascia Hanging Bracket

Wind Class	Max. Area—m ²
N2	12.5
N3	8.7
N4	5.6
C1	8.7
C2	5.6
C3	3.7

Notes Figures shown are per bracket. Capacity of existing tie down/truss must be checked for structural adequacy prior to any construction.

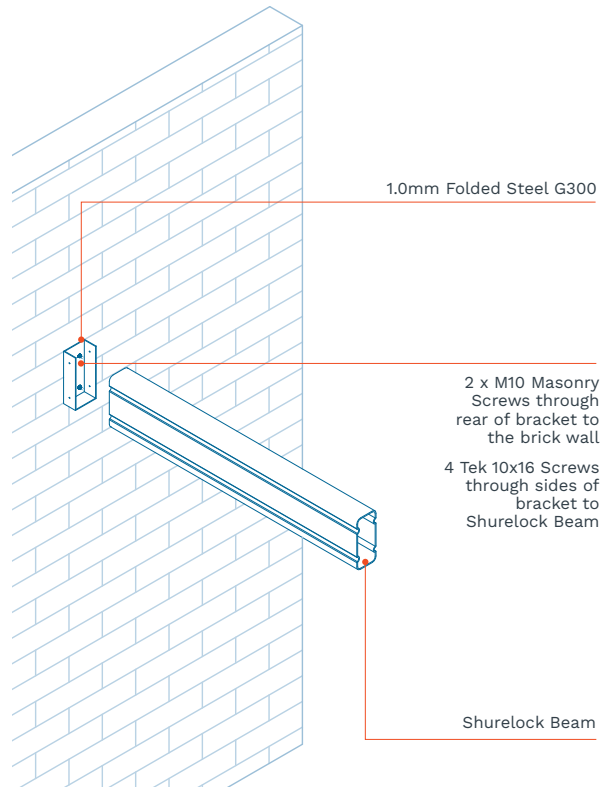
Beam End Cap Bracket to Brick/Masonry Wall

(To suit 100mm, 150mm, 200mm Beam)

Max. Tributary Area*—Beam End Cap Bracket

Wind Class	Max. Area—m ²	
	Open/Partially Enclosed	Enclosed
N1/N2	3.3	4.3
N3	2.1	2.8
N4	1.4	1.9
C1	2.1	2.1
C2	1.4	1.4
C3	1.0	1.0

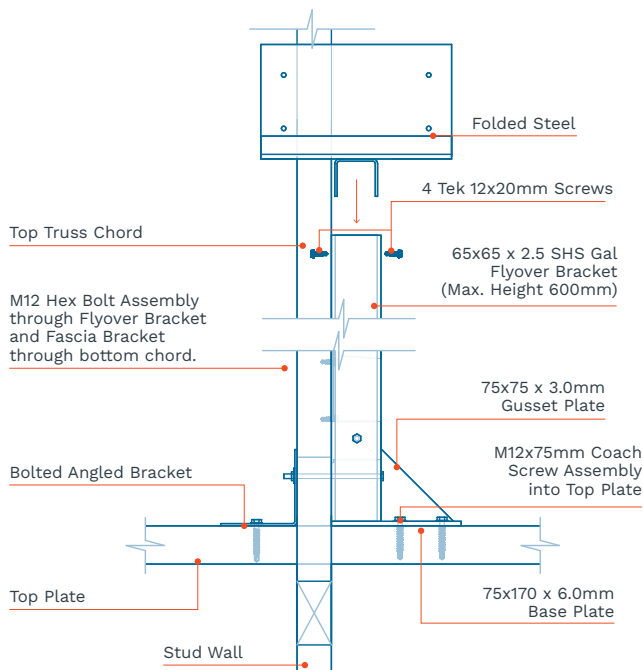
Notes For other masonry types please consult an engineer. Use one masonry screw bolt per brick from the corner. Required to come in a min of 1 brick from the corner. For top of wall, one masonry screw bolt per brick. Needs to be min three courses down from the top of the wall. Always fix masonry screw bolt in the centre of the brick. For further information refer to page 55.



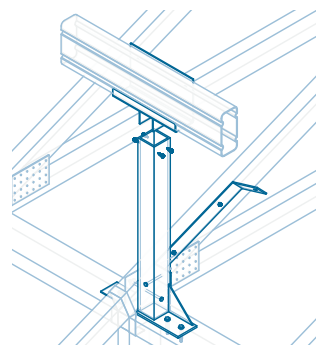
Flyover Roof Bracket (Gal PC)

(To suit 100mm, 150mm, 200mm Beam)

Max. load 7.55 kN



Notes M12x75 Coach Screw Assembly through base plate can be substituted for M12 Hex Bolt Assembly. To calculate the Flyover Bracket spacing refer to the Footing and Post Capacities section on page 66. For bolt to slab flyover roof, it is recommended that this assembly be adopted. For Flyover Roof Bracket Capacities, please refer to the Post and Footing Capacities calculator on page 66.



Cold-Formed Steel Frame

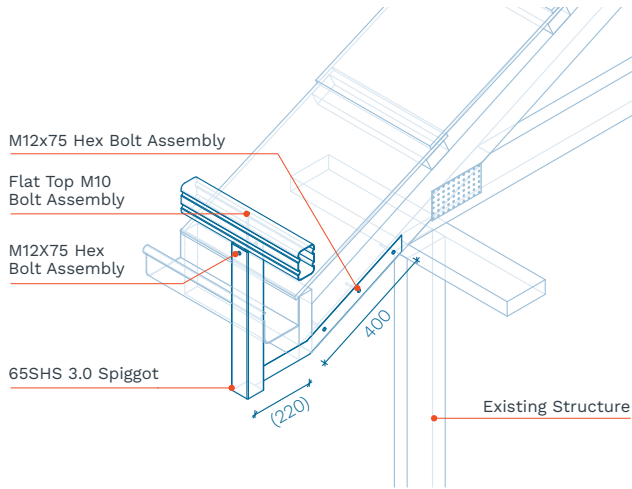
Frame Type	kN
0.75mm G550 top plate	7.1
0.95mm G550 top plate	10.1

Timber Frame

Frame Type	kN
JD4 (Pine) 35mm top plate	5.6
JD4 (Pine) 45mm top plate	7.2
JD3 (Hardwood) 35mm top plate	7.2
JD3 (Hardwood) 45mm top plate	9.8

Fascia Upstand Bracket (Gal PC)

(To suit 100mm, 150mm, 200mm Beam)



Vertical roof height (mm) = Overall roof height + beam height + spigot height.

Notes 4 x 10x16 Tek screws to side of bracket to post bracket can be used instead of 1 x Flat Head Bolt.

Maximum Bracket Spacing

Spigot height (mm)	Vertical roof height (mm)	Wind Class					
		N2	N3	N4	C1	C2	C3
150	600	12.3	7.90	5.33	7.90	5.33	3.61
	800	9.24	5.93	4.00	5.93	4.00	2.70
	1000	7.39	4.74	3.20	4.74	3.20	2.16
	1200	6.16	3.95	2.66	3.95	2.66	1.80
	1400	5.28	3.39	2.28	3.39	2.28	1.55
300	600	6.16	3.95	2.66	3.95	2.66	1.80
	800	4.62	2.96	2.00	2.96	2.00	1.35
	1000	3.69	2.37	1.60	2.37	1.60	1.08
	1200	3.08	1.98	1.33	1.98	1.33	0.90
	1400	2.64	1.69	1.14	1.69	1.14	0.77

Notes Spigot may need to be cut to suit the desired height.

Maximum Contributory Hold Down Area (m²)

10mm Plate Thickness

N2	N3	N4	C1	C2	C3
12.4	7.58	4.96	7.58	4.96	3.29

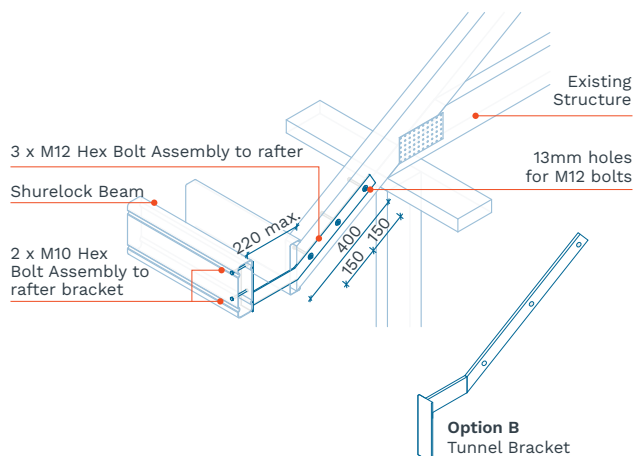
Max. Tributary Area—Fascia Upstand Bracket

Wind Class	Max. Area—m ²
N2	12.4
N3	7.58
N4	4.96
C1	7.58
C2	4.96
C3	3.29

Spigot height (mm)	Vertical roof height (mm)	Wind Class					
		N2	N3	N4	C1	C2	C3
450	600	4.10	2.63	1.78	2.63	1.78	1.20
	800	3.08	1.98	1.33	1.98	1.33	0.90
	1000	2.46	1.58	1.07	1.58	1.07	0.72
	1200	2.05	1.32	0.89	1.32	0.89	0.60
	1400	1.76	1.13	0.76	1.13	0.76	0.52
600	600	3.08	1.98	1.33	1.98	1.33	0.90
	800	2.31	1.48	1.00	1.48	1.00	0.68
	1000	1.85	1.19	0.80	1.19	0.80	0.54
	1200	1.54	0.99	0.67	0.99	0.67	0.45
	1400	1.32	0.85	0.57	0.85	0.57	0.39

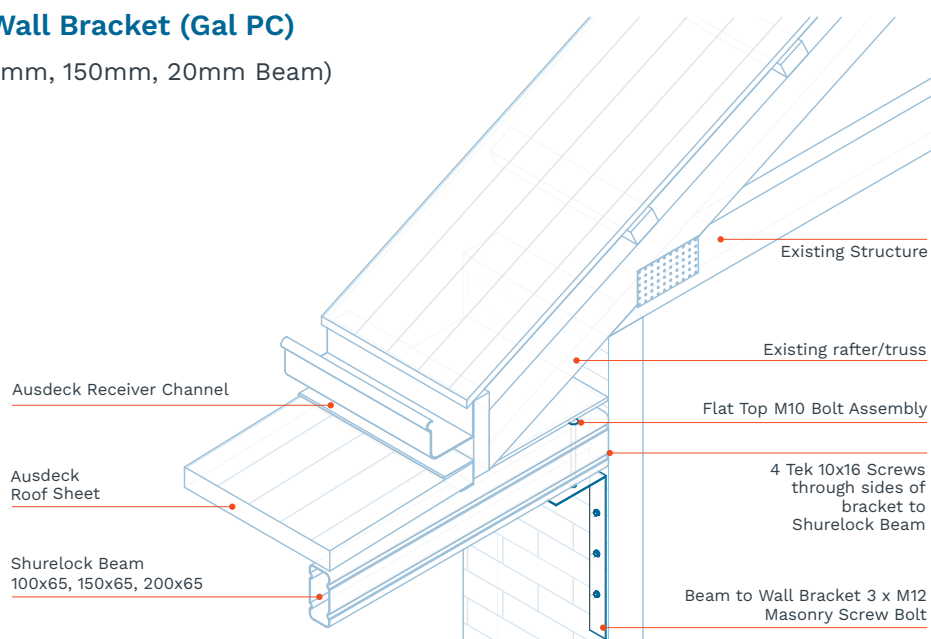
Box Gutter/Tunnel Bracket (Gal PC)

Box Gutter and Tunnel Bracket to be fitted at a maximum of 1800mm centres.



Beam to Wall Bracket (Gal PC)

(To suit 100mm, 150mm, 20mm Beam)



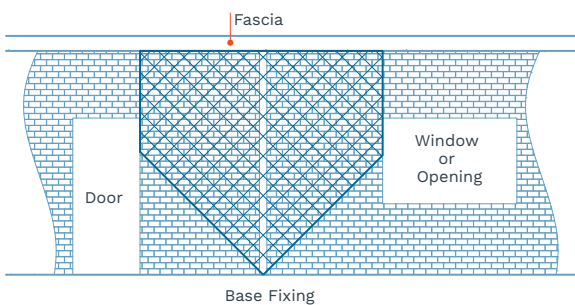
Max. Tributary Area—Beam to Wall Bracket

Beam to Wall Bracket (mm)	Max. Area—m ²									
	Open/Partially Enclosed					Enclosed				
	450 ¹	900 ¹	1800 ²	1800 ¹	450/900/1800 ³	450 ¹	900 ¹	1800 ²	1800 ¹	450/900/1800 ³
N2	4.2	9.0	11.0	17.1	12.0	2.7	5.9	7.2	11.8	7.9
N3	2.7	5.8	7.0	11.1	7.7	1.7	3.8	4.6	7.3	5.0
N4	1.7	3.9	4.7	7.4	5.2	1.1	2.5	3.1	4.8	3.4
C1	2.7	5.8	7.0	11.1	7.7	1.7	3.8	4.6	7.3	5.0
C2	1.7	3.9	4.7	7.4	5.2	1.1	2.5	3.1	4.8	3.4
C3	1.35	2.9	3.5	5.5	3.8	0.8	1.9	2.3	3.6	2.5

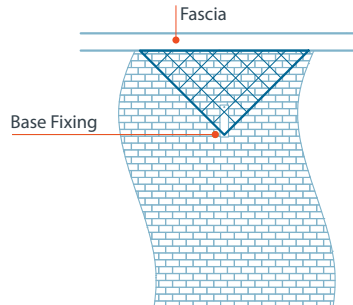
- 1 Single Storey with lined soffit
2 Single Storey with/out lined soffit
3 Double Storey

Anchor Capacity of Brickwork

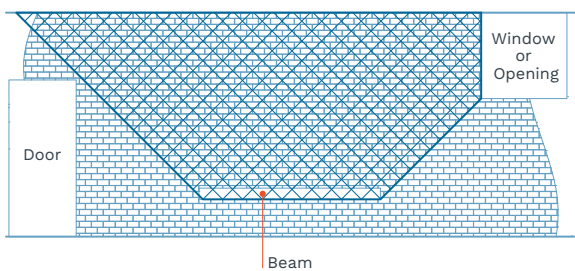
Post



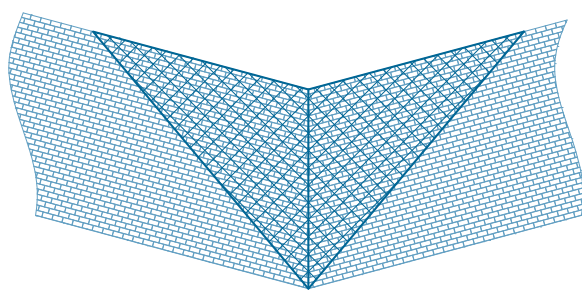
Beam End Cap/Beam Bracket



Beams



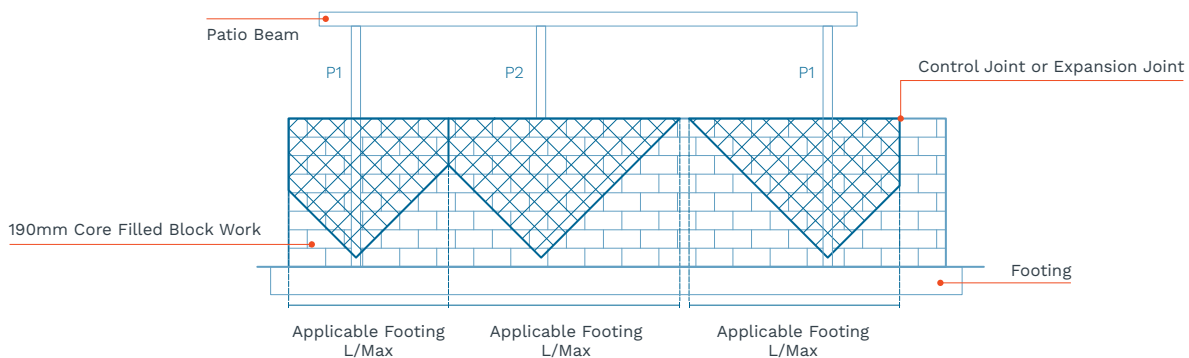
Corner



The area of the wall that can be considered effective to provide anchor resistance is that within a 45 degree zone from the base fixing to the top of the wall, excluding any openings. Average Brickwork—110 mm.

Dead Load = 1.9 kN Per M2 of Average Brickwork. Calculate the area of brickwork above the base fixings as per diagram above and multiply by 1.9 = Maximum kN Capacity.

Anchor Capacity of Brickwork, 190mm Core Filled—Post



The area of the wall that can be considered effective to provide anchor resistance is that within a 45 degree zone from the base fixing to the top of the wall excluding any openings. (The effective area of any post must not overlap the effective area of any other post).

Core Filled Block Work—190 mm.

Dead load = 4.0kN Per M2 of 190 mm Core Filled Block Work.

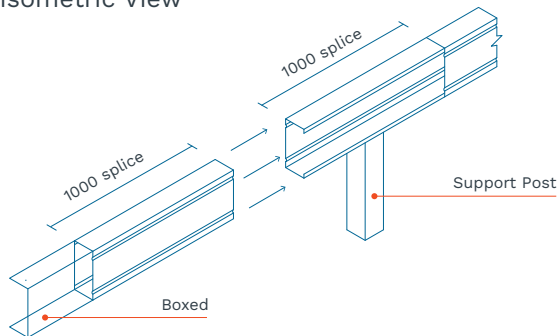
Calculate the area of the block work above the base fixing as per the diagram above and multiply by 4.0 = Maximum kN capacity.

If the footing size can be accurately determined, add 22 kN per m³ of concrete. A minimum footing size of 300 x 300 can be assumed if the footing size cannot be accurately determined. For post fixings to the top of the block wall (P2 in Drawing 16E above) use M12 chemset min. 250 mm embedment into core fill (Embedment excludes any capping tile and the like that may be used on the top of the wall).

Beam Join Connections

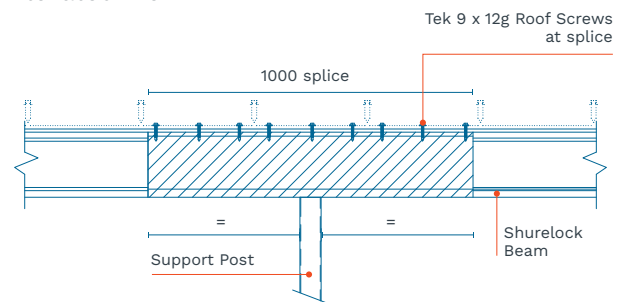
Beam Splice Connection

Isometric View



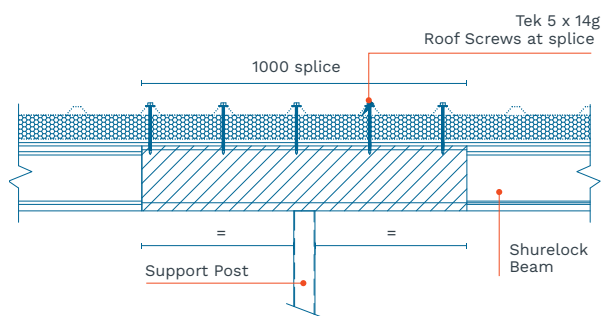
V-Line Single-Skin Roofing

Elevated View



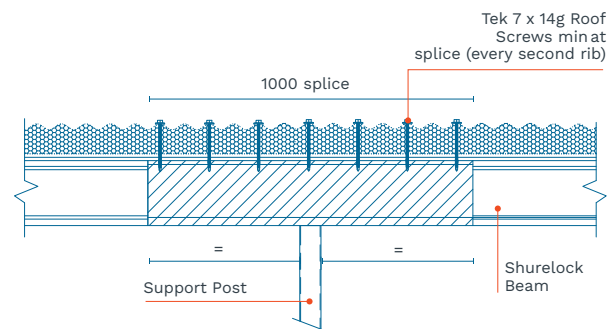
Ribbed Insulated Roofing

Elevated View



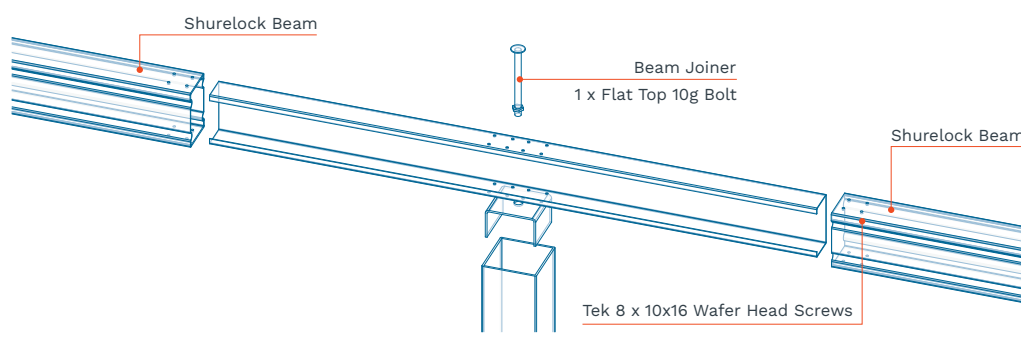
Corrugated Insulated Roofing

Elevated View



Beam Joiner

Isometric View

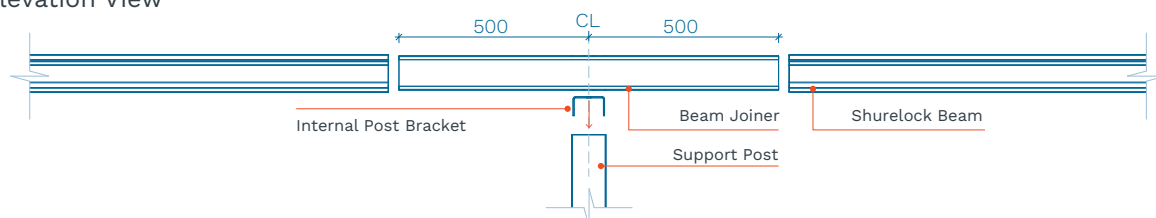


End View



Notes Beam Joiner must sit directly under the Post. 4 x 10x16 Tek Screws can be used instead of 1 x Flat Head Bolt. Alternatively Notched Posts with a Post Cut Out Bracket can be used. Please ensure the bracket is fixed through either side of the butt join to create a secure connection.

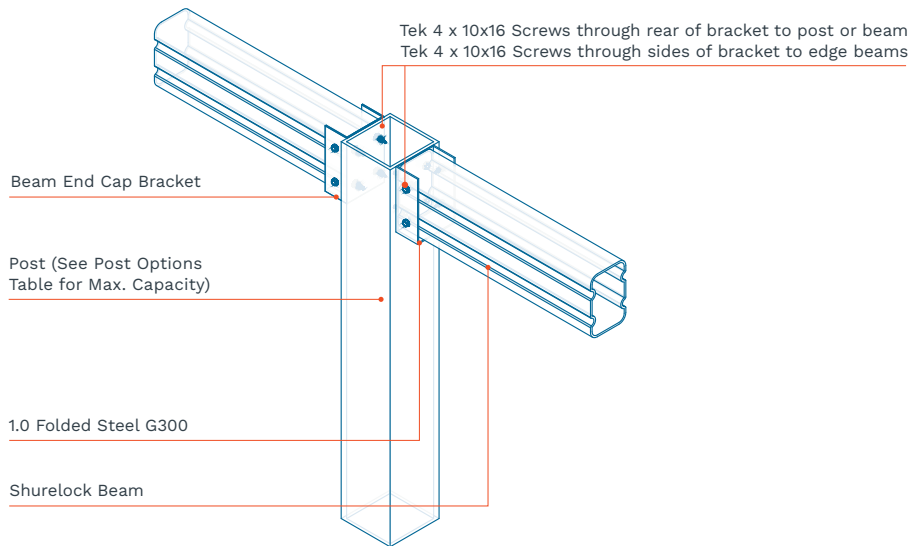
Elevation View



Post to Beam Connections

Beam End Cap Bracket to Post

(To suit 65mm, 89mm, 100mm, 150mm Post)



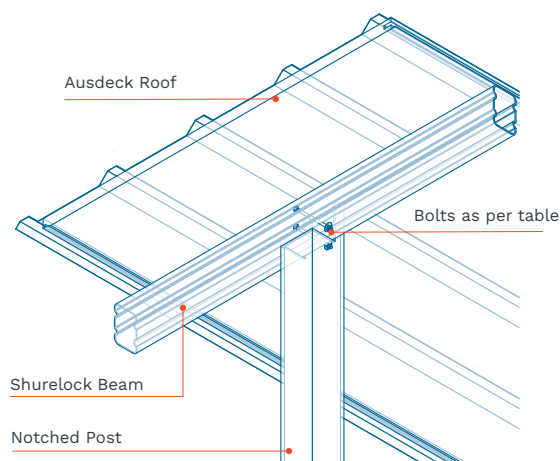
Notes Suitable for straight or L configurations.

Max. Tributary Area*—Beam End Cap Bracket

Wind Class	Max. Area—m ²	
	Open/Partially Enclosed	Enclosed
N1/N2	27.0	17.8
N3	17.9	11.2
N4	11.4	7.5
C1	17.0	11.2
C2	11.4	7.5
C3	8.6	5.6

*Recommended fixings: Tek 8 x 10x16 Screws

Notched Post for Steel, Aluminium and Timber

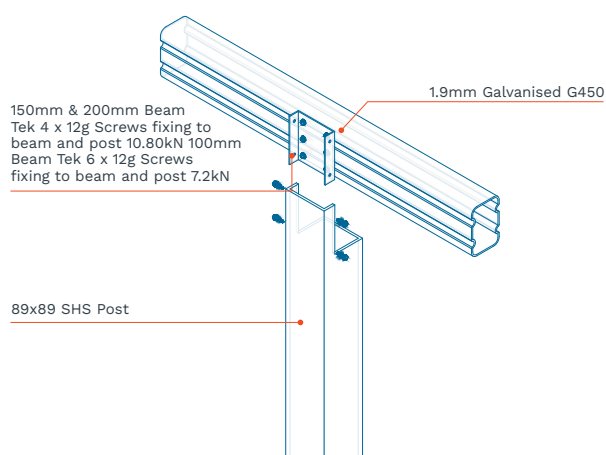


Maximum Area of Roof Tied Down by Bolted Connection

Post size	Required Bolts	Max. Area—m ²														
		Freestanding			Wall to One Side			Wall to Two Sides			Wall to Three Sides			Enclosed		
		N1/N2	N3	N4	N1/N2	N3	N4	N1/N2	N3	N4	N1/N2	N3	N4	N1/N2	N3	N4
90x90 ALI 2.0	2 x M10	14.8	9.0	5.9	10.2	6.3	4.1	6.2	3.9	2.6	4.2	2.6	1.7	5.7	3.5	2.3
	2 x M12	17.8	10.8	7.0	12.2	7.5	4.9	7.5	4.7	3.1	5.0	3.2	2.1	6.8	4.3	2.8
89x89 SHS 2.0	2 x M10	21.6	13.1	8.5	14.8	9.1	6.0	9.1	5.7	3.7	6.1	3.8	2.5	8.3	5.2	3.4
	2 x M12	25.9	15.7	10.3	17.7	10.9	7.2	10.9	6.8	4.5	7.3	4.6	3.0	9.9	6.2	4.1
100x100 SHS 3.0	2 x M10	21.6	13.1	8.5	14.8	9.1	6.0	9.1	5.7	3.7	6.1	3.8	2.5	8.3	5.2	3.4
	2 x M12	25.9	15.7	10.3	17.7	10.9	7.2	10.9	6.8	4.5	7.3	4.6	3.0	9.9	6.2	4.1
90TIMB	2/M12				17.2	10.4	6.7	9.4	5.8	3.8	9.4	5.8	3.8	9.4	5.8	3.8

Post Cut Out Bracket (Gal)

(To suit 100mm, 150mm, 200mm Beam)



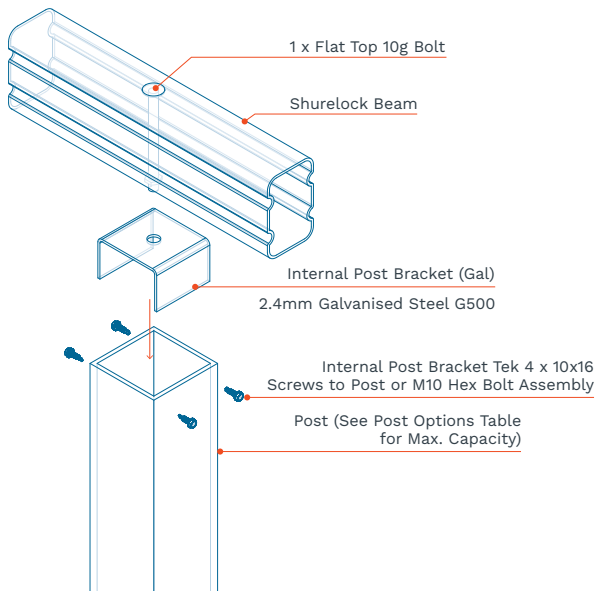
Max. Tributary Area*—Post Cut Out Bracket

Wind Class	Max. Area—m ²	
	Open/Partially Enclosed	Enclosed
N1/N2	27.0	17.8
N3	17.9	11.2
N4	11.4	7.5
C1	17.0	11.2
C2	11.4	7.5
C3	8.6	5.6

*Recommended Fixings: Tek 10 x 12x20 Screws.

Internal Post Bracket (Gal)

(To suit 65mm, Post)



Notes Not suitable for freestanding structures.
4 x 10x16 Tek Screws can be used instead of 1 x Flat Head Bolt.

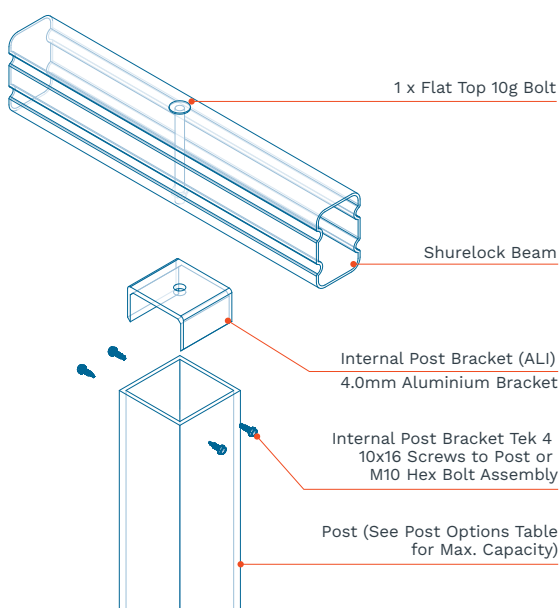
Max. Tributary Area*—Internal Post Bracket (Gal)

Wind Class	Max. Area—m ²	
	Open/Partially Enclosed (Cp,n 0.8)	Enclosed (Cp,n 1.2-1.6)
N1/N2	21.6	14.4
N3	13.8	9.2
N4	9.3	6.2
C1	13.8	6.9
C2	9.3	4.6
C3	6.3	3.2

*Enclosed Cp,n 1.2 (non cyclonic) 1.6 (cyclonic).

Internal Post Bracket (Ali)

(To suit 65mm Post)



Notes Not suitable for freestanding structures. 4 x 10x16 Tek Screws can be used instead of 1 x Flat Head Bolt.

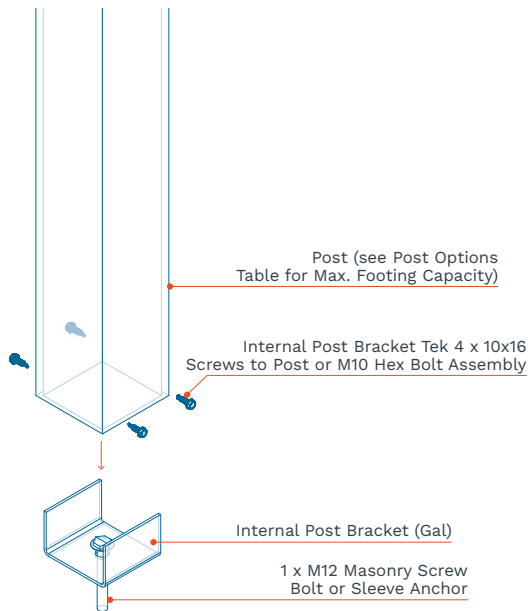
Max. Tributary Area*—Internal Post Bracket (Ali)

Wind Class	Max. Area—m ²	
	Open/Partially Enclosed	Enclosed
N1/N2	14.4	9.6
N3	9.2	6.2
N4	6.2	4.1
C1	9.2	4.6
C2	6.2	3.1
C3	4.2	2.1

Post to Slab Connections

Internal Post Bracket (Gal)

(To suit 65mm, 89mm, 100mm Post)



Notes Not suitable for freestanding structures.

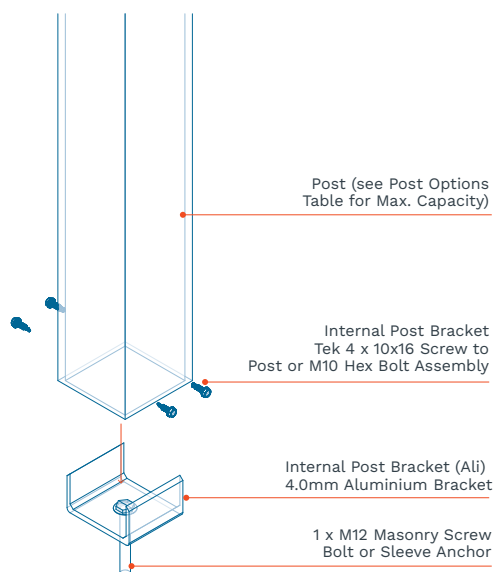
Max. Tributary Area*—Internal Post Bracket (Gal)

Wind Class	Max. Area—m ²	
	Open/Partially Enclosed (C _{p,n} 0.8)	Enclosed, Enclosed C _{p,n} 1.2 (non cyclonic) 1.6 (cyclonic)
N1/N2	12.0	8.0
N3	7.7	5.1
N4	5.2	3.4
C1	7.7	3.8
C2	5.2	2.6
C3	3.5	1.8

*Recommended Fixings: 1 x M12x75 Masonry Screw Bolt = 11.2 kN. Alternatively, 1 x M12x75 Sleeve Anchor = 7.2 kN.

Internal Post Bracket (Ali)

(To suit 65mm, 90mm, 100mm, 150mm Post)



Notes Not suitable for freestanding structures.

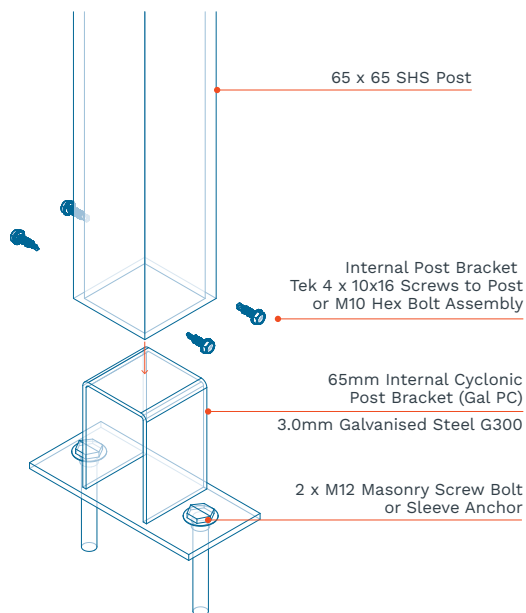
Max. Tributary Area*—Internal Post Bracket (Ali)

Wind Class	Max. Area—m ²	
	Open/Partially Enclosed	Enclosed
N1/N2	14.4	9.6
N3	9.2	6.2
N4	6.2	4.1
C1	9.2	4.6
C2	6.2	3.1
C3	4.2	2.1

*Recommended Fixings: 1 x M12x75 Masonry Screw Bolt = 11.2 kN. Alternatively, 1 x M12x75 Sleeve Anchor = 7.2 kN.

Internal Cyclonic Post Bracket (Gal PC)

(To suit 65mm Post)



Notes Not suitable for freestanding structures.

Max. Tributary Area*—Internal Cyclonic Post Bracket (Gal PC)

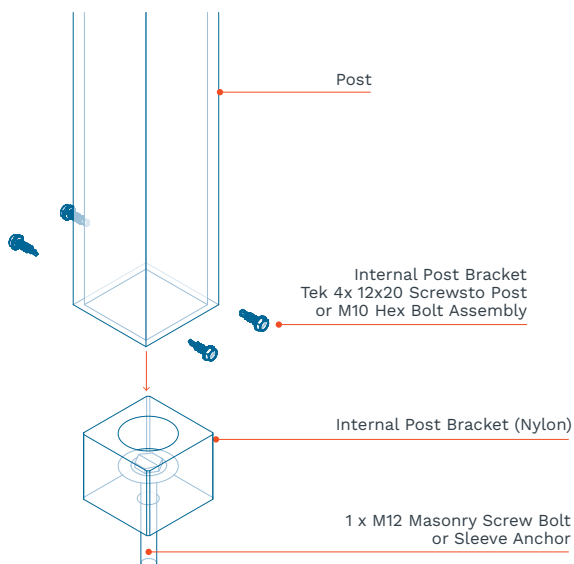
Wind Class	Max. Area—m ²	
	Open/Partially Enclosed	Enclosed
C1	24.4	10.15
C2	16.4	6.85
C3	11.15	4.65

*Recommended Fixings: 2 x M12x75 Masonry Screw Bolt = 11.2 kN each.
Alternatively, 2 x M12x75 Sleeve Anchor = 7.2 kN each.

Internal Post Bracket (Nylon)

(To suit 65mm, 90mm, 100mm Post)

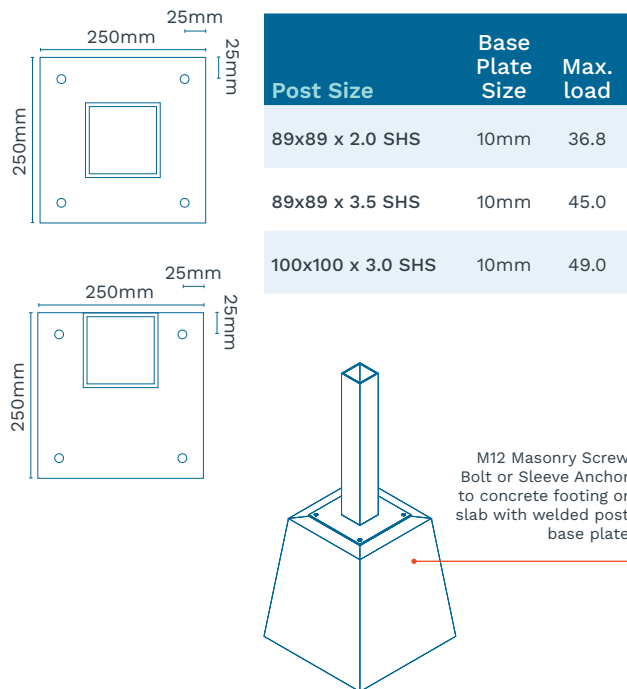
Max. load 3.75kN per screw



Notes Not suitable for freestanding structures.

Welded Post Base Plates (Gal)

(To suit 89mm, 100mm Post)

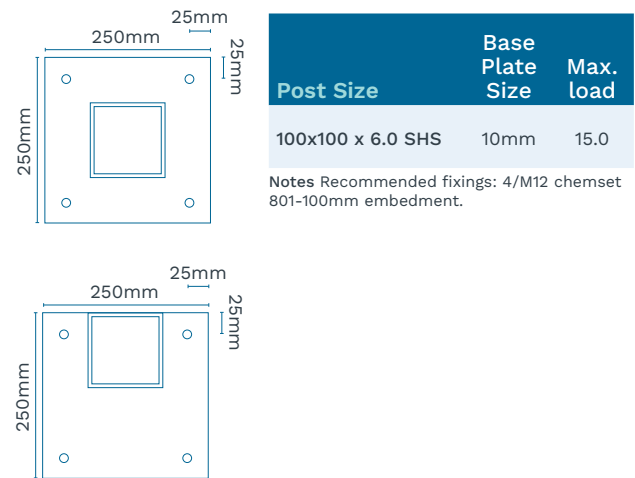


Post Size	Base Plate Size	Max. load
89x89 x 2.0 SHS	10mm	36.8
89x89 x 3.5 SHS	10mm	45.0
100x100 x 3.0 SHS	10mm	49.0

M12 Masonry Screw Bolt or Sleeve Anchor to concrete footing or slab with welded post base plate

Welded Post Base Plates (Ali)

(To suit 100mm Post)



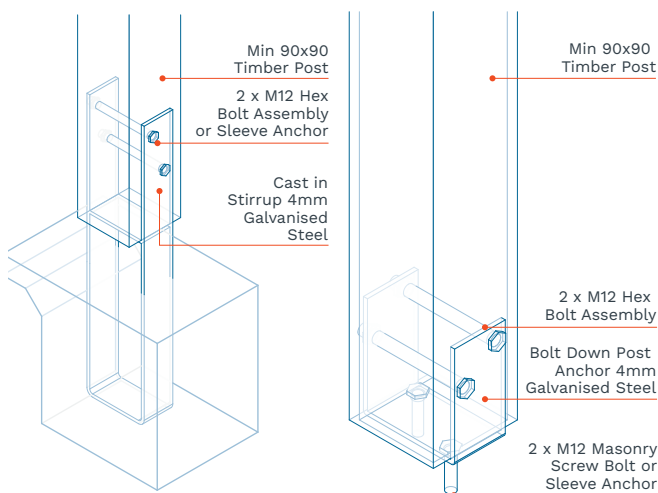
Post Size	Base Plate Size	Max. load
100x100 x 6.0 SHS	10mm	15.0

Notes Recommended fixings: 4/M12 chemset 801-100mm embedment.

Notes For attached patios, posts can be located at the centre edge of the base plate, provided the bolt locations remain unchanged. Welded post base plate as per 89x89 and 100x100 SHS post with 10mm thick steel plate. All bolts/sleeve anchors to be installed strictly in accordance with manufacturers specifications and data sheets. Post-footing connection details to be selected according to anchor load requirements refer to page 66.

Cast in Stirrup for Timber Posts

Bolt Down Post Anchor for Timber Posts



Min 90x90 Timber Post

2 x M12 Hex Bolt Assembly or Sleeve Anchor

Cast in Stirrup 4mm Galvanised Steel

Min 90x90 Timber Post

2 x M12 Hex Bolt Assembly

Bolt Down Post Anchor 4mm Galvanised Steel

2 x M12 Masonry Screw Bolt or Sleeve Anchor

Notes For engineering requirements and installation refer to the manufacturer specifications. Cast in Stirrup and Bolt Down Post Anchor not a sold item. 75mm minimum clearance required between floor finish to the base of any timber post For footing requirements refer to the Footing Capacities table on page 66. *For freestanding structure refer to page 44 and 46.

Max. Tributary Area*—Cast In Stirrup

Wind Class	Max. Area—m ²			
	Wall on One Side	Wall on Two Sides	Wall on Three Sides	Fully Enclosed
N1/N2	57.3	31.2	31.2	31.2
N3	34.6	19.3	19.3	19.3
N4	22.5	12.7	12.7	12.7

*Slab is to be min of 20MPa, 100mm thick with F62 reinforcement

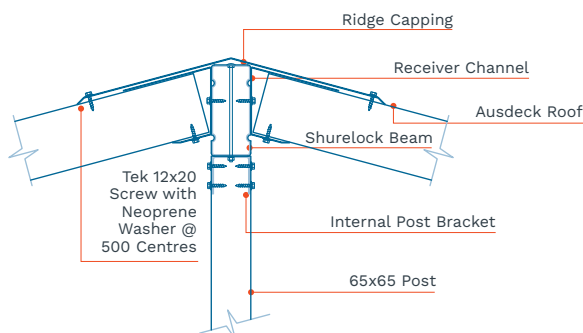
Max. Tributary Area*—Bolt Down Post Anchor

Wind Class	Max. Area—m ²		
	Wall on One Side	Wall on Two Sides	Wall on Three Sides
N1/N2	6.9	3.7	3.7
N3	4.2	2.3	2.3
N4	2.7	1.5	1.5

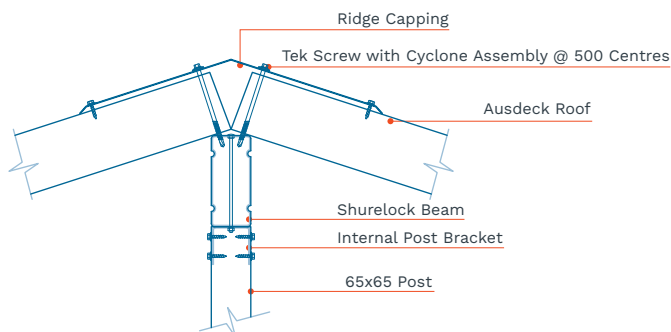
*Slab is to be min of 20MPa, 100mm thick with F62 reinforcement

Gable Roof Connections

Option 1 Receiver Channel to Beam

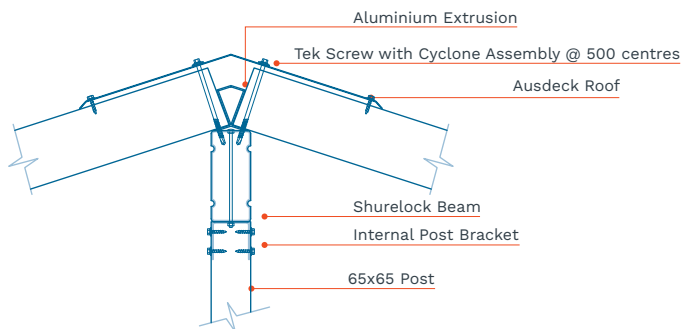


Option 2 Roof Fixed to Beam



Notes Only suitable Gable Frame 1.

Option 3 Receiver Channel to Extrusion

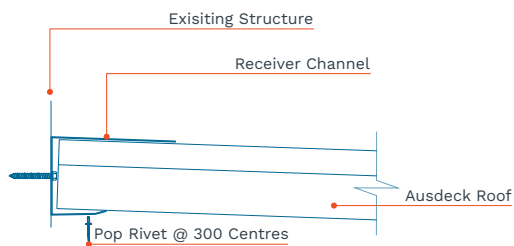


Notes Use Tek 12x20mm Screws to stitch flashing to every sheet

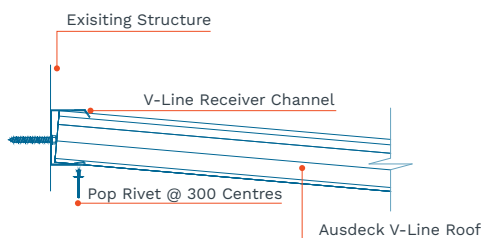
Flashing and Gutter Connections

Receiver Channel

Insulated

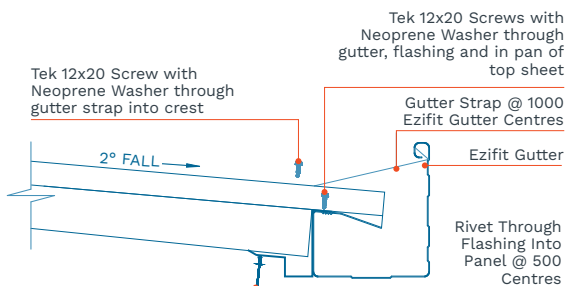


Single-Skin (V-Line)

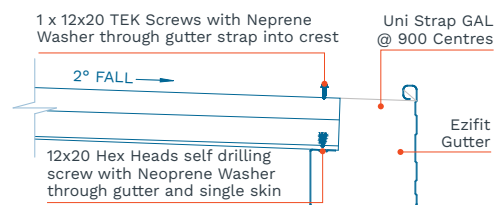


Gutter and Gutter Fascia

Insulated



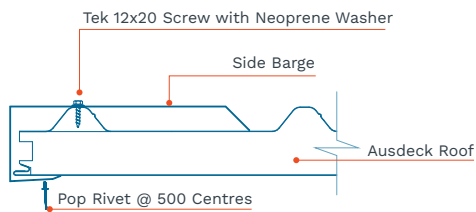
Single-Skin (V-Line)



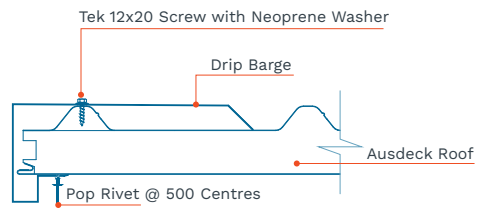
Notes Fix to gutter strap to the pan of the roof on Single-Skin roofing.

Barge Cap

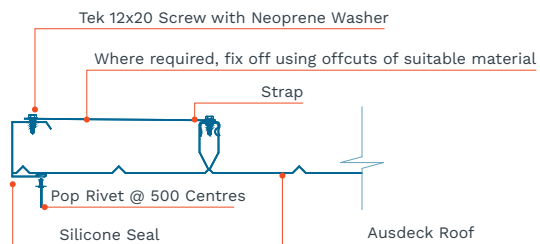
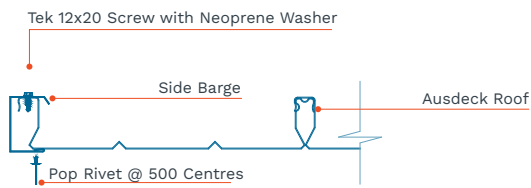
Side Barge Cap—Insulated



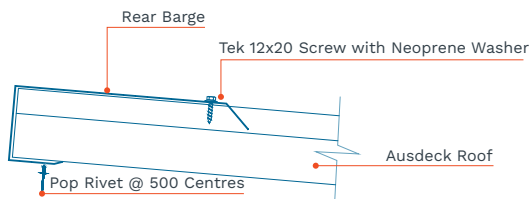
Drip Edge Barge Cap—Insulated



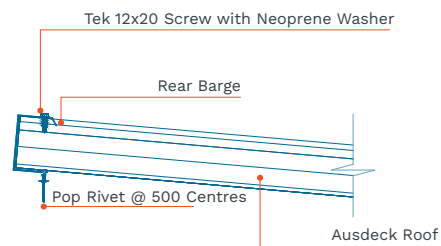
Side Barge—Single-Skin (V-Line)



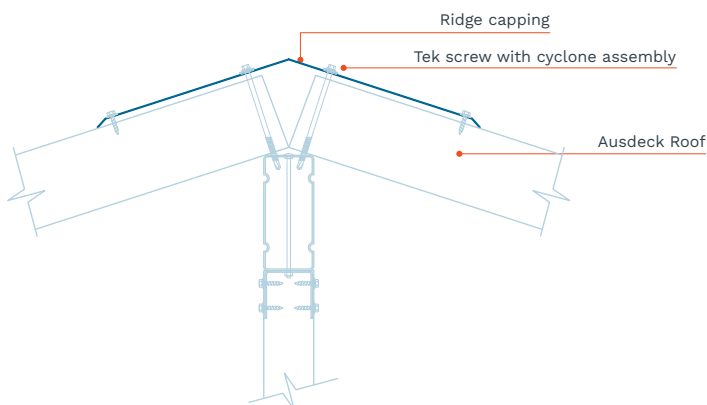
Rear Barge Cap—Insulated



Rear Barge Cap—Single-Skin (V-Line)

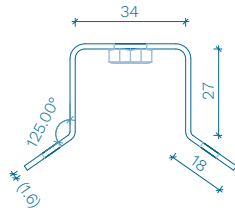


Ridge Cap

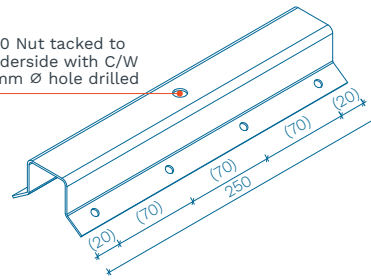


Solar Bracket Connections

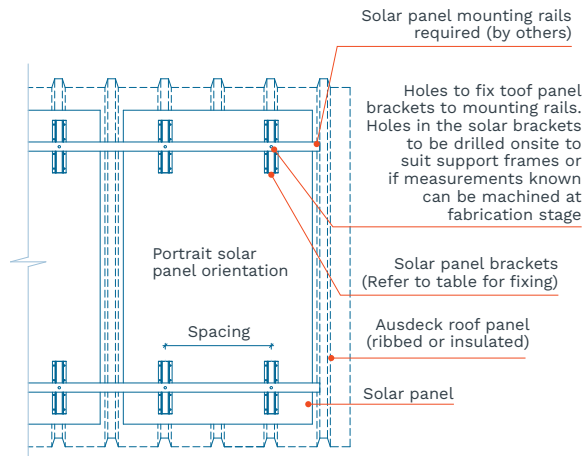
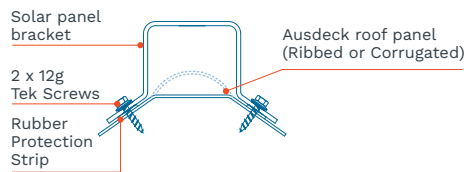
Solar Panel Bracket to Insulated Roof



M10 Nut tacked to underside with C/W 11mm Ø hole drilled

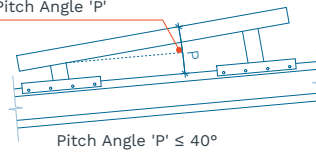


Solar Bracket Installation



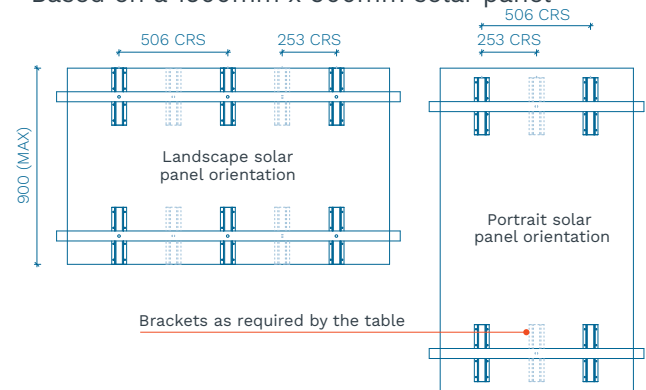
Pitch Angle

Solar Panel Pitch Angle 'P'



Typical Panel Orientation

Based on a 1500mm x 900mm solar panel



Notes If brackets are used in a coastal area we recommend powder-coating the brackets for corrosion resistance. All screws to be 12g Class 4 Screws with Neo. Locate panels away from roof edges and ridge.

Solar Panel Fixing Requirements

Wind Class	Limit State Design Pressure (kPa)	Portrait				Landscape			
		@ 253mm crs		@ 506mm crs		@ 253mm crs		@ 506mm crs	
		Brackets/ Panel	Screws/ Bracket	Brackets/ Panel	Screws/ Bracket	Brackets/ Panel	Screws/ Bracket	Brackets/ Panel	Screws/ Bracket
N2	2.16	6	4	4	4	10	4	6	4
N3	3.32	6	4	4	4	10	4	6	4
N4	4.97	6	4	4	6	10	4	6	4
C1	3.79	6	4	4	4	10	4	6	4
C2	5.64	6	6	4	8	10	4	6	4
C3	8.11	6	6	4	10	10	4	6	4

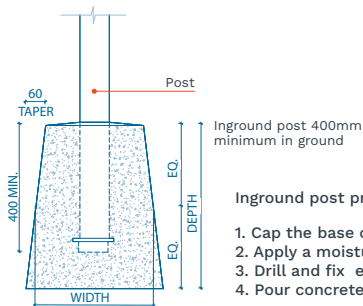
Notes All brackets to be screwed with 12g class 4 screws with Neo seal.

Post Sizes & Footing Capacities

Post Options (Post into footings)

Post Options for Freestanding Structures

Post Type	Post Size	Roof Area Up To	Max. Height (mm)
Steel Posts	89x89 x 2.0	20m ²	3000
	100x100 x 3.0	60m ²	3600
Aluminium Posts 6063-T5	90x90 x 2.5	20m ²	3000
	100x100 x 6.0	60m ²	3600



Inground post preparation guidelines.

1. Cap the base of the base of the post to prevent concrete ingress.
2. Apply a moisture barrier/dry film bitumen tape, or equivalent around the post base.
3. Drill and fix either an N12 x 200 rod, M12 bolt or 4 x 40mm Tek Screws at the base of the post.
4. Pour concrete with the surface sloping away from the post at least 15mm above ground.

Post Options for Attached Structures

Post Type	Post Size	Max. Height (mm)
Steel Posts	89x89 x 2.0	5600
	100x100 x 3.0	5800
	100x100 x 5.0	6000
Aluminium Posts 6063-T5	65x65 x 2.0	3950
	90x90 x 2.5	4000
	100x100 x 6.0	4500
	150x150 x 3.0	4500

Footing Capacities

Anchor Load Calculation

To calculate the Anchor Load Capacity in kN, please use the following formula and reference the Wind Pressure and Coefficients. Then use the Anchor Load Capacity to look up the corresponding footing size.

How to Calculate Anchor for Footing Capacities

$$\text{Anchor Load} = LP \times ((RS/2) + O/H) \times P_z \times C_{p,n}$$

Example Calculation:

7mx5m Flyover Patio with 500mm Overhand in N2 Application

$$\text{Anchor Load} = (7m \text{ LP}/2) \times ((5m \text{ RS}/2) + 0.5m \text{ O}/H) \times 1.5 P_z \times 0.7 C_{p,n} = 11.03 \text{ kN} - \text{Round to } 14.1 \text{ kN}$$

Footing Size = 500 Square x 600 Deep

How to Calculate Anchor Load for Flyover Roof Brackets

$$\text{Anchor Load} = LP \times ((RS/2) + O/H) \times P_z \times C_{p,n}$$

Example Calculation:

6mx5m Flyover Patio in N2 Application, with a Hardwood 45mm Top Plate.

Assuming 2 brackets used:

$$\text{Anchor Load} = (6.0m \text{ LP}/2) \times ((5m \text{ RS}/2) \times 1.5 P_z \times 0.7 C_{p,n}) = 7.875 \text{ kN}$$

Assuming 3 brackets used:

$$\text{Anchor Load} = (3.0m \text{ LP}/2) \times ((5m \text{ RS}/2) \times 1.5 P_z \times 0.7 C_{p,n}) = 3.94 \text{ kN}$$

By increasing the number of posts and or flyover brackets, you can reduce your kN.

Legend

LP Length of Beam Supported by Post or Flyover Roof Bracket (In metres)
RS Roof Span (In metres)
O/H Roof sheet Overhang (In metres)

P_z Basic Wind Pressure (Refer table)
C_{p,n} Applicable Coefficient (Refer table)
kN Anchor Load

Notes For a single beam span (one or two posts or brackets) LP is half the beam span. For continuous beams spans (multiple posts or brackets) LP is half of each span. This calculates the tributary area for each post or bracket.

Wind Pressure

Wind Category	N1	N2	N3	N4	C1	C2	C3
Applicable Pz	0.69	0.96	1.5	2.23	1.5	2.23	3.29

Coefficients Cp,n

Building Description	Flat		Gable	
	Patios	Carports	Patios	Carports
Wall to One Side	0.5* / 0.7	1.0	1.0	1.0
Wall to Two Sides	1.0	1.0	1.0	1.0
Wall to Three Sides	1.2	1.2	1.2	1.2
Enclosed—Non Cyclonic	1.1	1.1	1.1	1.1
Enclosed—Cyclonic	1.6	1.6	1.6	1.6
Open Four Sides	0.7	1.0	1.0	1.2

Square Footing—Clay

kN	Footing Size
58.1	1000 Square By 1000 Deep
50.3	900 Square By 1000 Deep
45.2	900 Square By 900 Deep
42.9	800 Square By 1000 Deep
38.6	800 Square By 900 Deep
34.3	800 Square By 800 Deep
32.4	700 Square By 900 Deep
28.8	700 Square By 800 Deep
25.2	700 Square By 700 Deep
23.6	600 Square By 800 Deep
20.7	600 Square By 700 Deep
18.8	500 Square By 800 Deep
16.5	500 Square By 700 Deep
14.3	400 Square By 800 Deep
14.1	500 Square By 600 Deep
10.8	400 Square By 600 Deep
7.2	400 Square By 400 Deep
6.4	300 Square By 500 Deep
5.1	300 Square By 400 Deep

Notes Freestanding structures to have posts cast in. For Patios where the projection is more than 1.2 times the length of the attached side of the patio, the posts and footing outside this dimension are to be treated as Freestanding. Attached structures assumed to transfer bracing to existing structure. Designs outside these parameters requires individual engineering certification

Square Footings—Sand and Class M

kN	Footing Size
22.1	1000 Square By 1000 Deep
17.9	900 Square By 1000 Deep
16.1	900 Square By 900 Deep
14.1	800 Square By 1000 Deep
12.7	800 Square By 900 Deep
11.3	800 Square By 800 Deep
10.8	700 Square By 1000 Deep
9.7	700 Square By 900 Deep
8.6	700 Square By 800 Deep
7.9	600 Square By 1000 Deep
7.6	700 Square By 700 Deep
7.1	600 Square By 900 Deep
6.4	600 Square By 800 Deep
5.6	600 Square By 700 Deep
4.8	600 Square By 600 Deep
4.4	500 Square By 800 Deep
3.9	500 Square By 700 Deep
3.3	500 Square By 600 Deep
2.1	400 Square By 600 Deep
1.8	400 Square By 500 Deep
1.4	400 Square By 400 Deep

Deck and Floor Spans

Bearer and Joist Spans

Joist Centres—Max. 450mm

Domestic House 1.5kPa / 1.8kN Live Load

Joist Span (mm)	Joist Size	Bearer Span (mm)	Bearer Size
3000	C150-12	3000	LLC150-24
3300	C150-15	3000	LLC150-24
3600	C150-19	2900	LLC150-24
4000	C150-24	2800	LLC150-24
4100	C200-15	3000 3200	LLC200-19 LLC200-24
4500	C200-19	2900 3100	LLC200-19 LLC200-24
4800	C200-24	2800 3000	LLC200-19 LLC200-24
5100	C250-19	2800 3400	LLC250-19 LLC200-24
5500	C250-24	2900 3200	LLC250-19 LLC200-24
6800	C300-24	3300 3500	LLC300-24 LLC300-30
7300	C300-30	3100 3300	LLC300-24 LLC300-30
8000	C350-30	3600	LLC350-30

Domestic Single Storey Deck 2.0kPa / 1.8kN Live Load

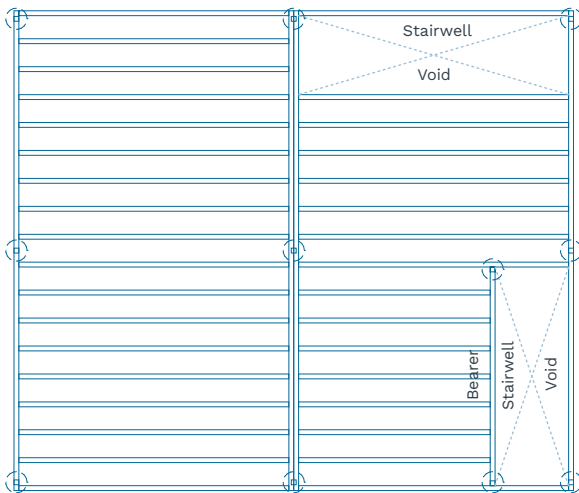
Joist Span (mm)	Joist Size	Bearer Span (mm)	Bearer Size
2925	C150-12	2700 2800	LLC150-19 LLC150-24
3250	C150-15	2500 2700	LLC150-19 LLC150-24
3600	C150-19	2500 2700	LLC150-19 LLC150-24
3875	C150-24	2400 2600	LLC150-19 LLC150-24
4025	C200-15	2900 3000	LLC200-19 LLC200-24
4300	C200-19	2900 3000	LLC200-19 LLC200-24
4600	C200-24	2800 3000	LLC200-19 LLC200-24
4800	C250-19	2800 3200	LLC250-19 LLC250-24
5150	C250-24	2700 3100	LLC250-19 LLC250-24
6400	C300-24	3300 3500	LLC300-24 LLC300-30
6850	C300-30	3200 3400	LLC300-24 LLC300-30
7800	C350-30	3600	LLC350-30

Post Member Max. Area (m²)

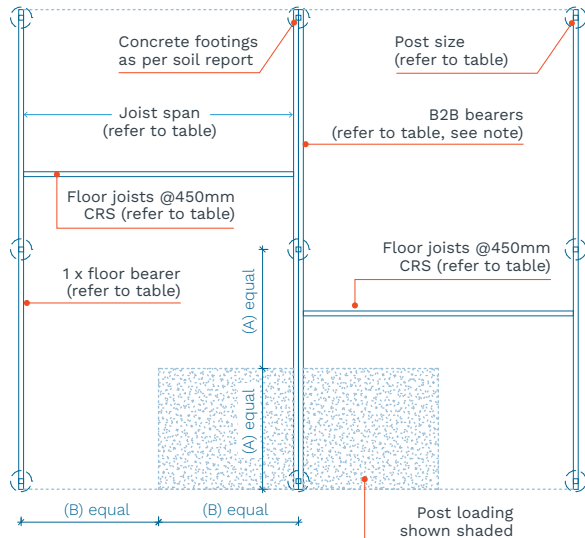
Post Height (mm)	Post Size	Live Load	
		1.5 kPa	2.0 kPa
2500	89x89 SHS 3.5	44	36
3000	89x89 SHS 3.5	34	28
3500	89x89 SHS 3.5	26	22
2500	89x89 SHS 3.5	52	42
3000	89x89 SHS 3.5	40	32
3500	89x89 SHS 3.5	30	24
2500	89x89 SHS 3.5	58	48
3000	89x89 SHS 3.5	44	36
3500	89x89 SHS 3.5	34	28

- All bearer spans shown are maximum and to be continuous where possible
- Use 2 equal sized bearers for B2B bearers
- Maximum joist spacings—450mm (joists to be spaced equally)
- Joist spans are maximum* where bearers/joists are different heights a 30 x 1.0mm fly brace (fb) is to be fixed with Tek 2 x 12g Screws each end at every other joist
- All posts to be embedded into concrete footings a minimum of 600mm for bracing capacity
- Posts are to be placed at the end of every bearer
- All posts to have 150x75 x 6.0 plates 6cfw to bottoms
- 100x100 SHS 3.0mm posts may be used alternatively to the posts in the table
- All flooring materials to be installed as per manufacturers specifications

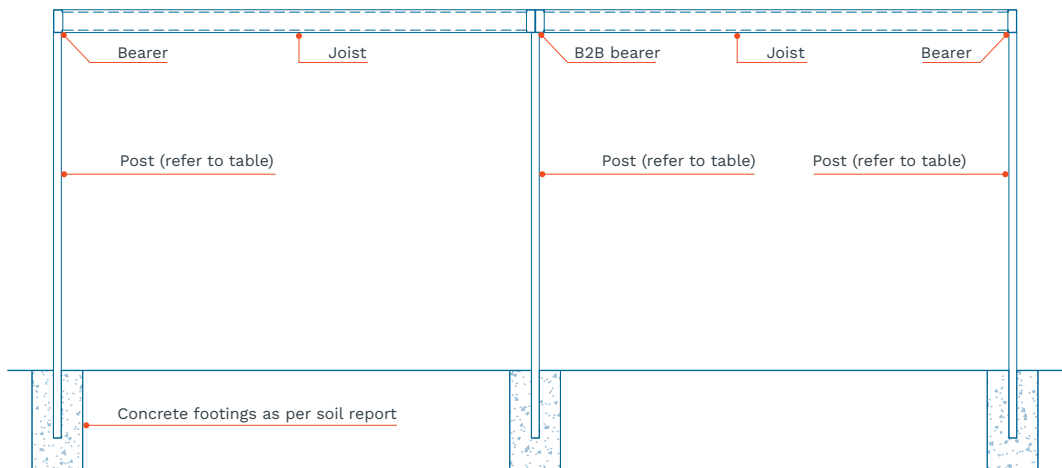
Joists with Voids Plan



Bearers/Posts Plan



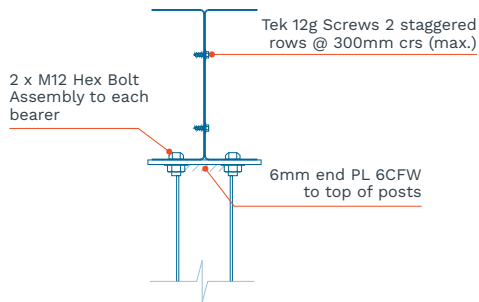
Deck Elevation



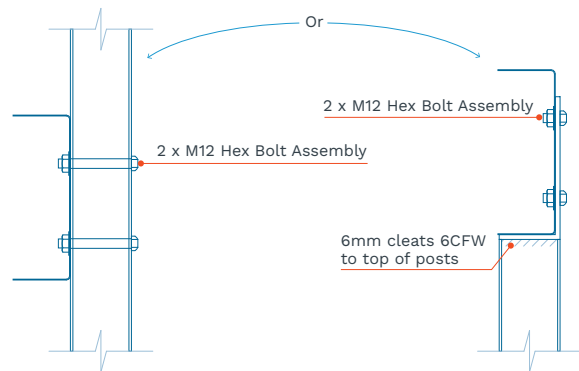
Deck and Floor Connection Details

Post Connections

Post to B2B Bearer

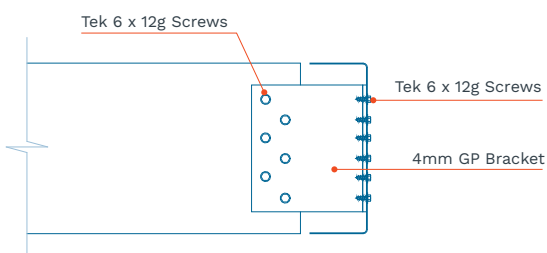


Post to Single Bearer

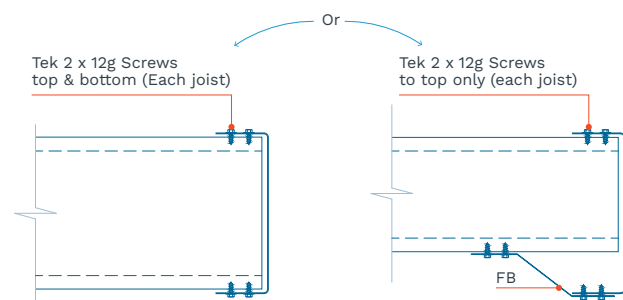


Bearer Connections

Bear to Bearer



Joist to Bearer



Certifications and Testing



SUMMERMORE Pty Ltd ABN 42 108 898 433
PO Box 1671,
Browns Plains BC,
Queensland, 4118
Tel: 07 3800 0973
W: www.summermore.com.au

Sunday, 3 May 2026

Ausdeck
 56-72 Bandara St,
 Richlands QLD 4077

Dear Mr Sharp

STRUCTURAL DESIGN CERTIFICATION (VALID UNTIL 31DEC2026)
GENERIC DESIGN CERTIFICATION FOR STRUCTURES THAT COMPLY WITH
AUSDECK CONSTRUCTION MANUAL V13.00.00

We, Summermore Pty Ltd, being Registered Structural and Civil Engineers, hereby certify that the design of roof framing, and brackets, posts, footings and sheeting for the Ausdeck patio system for patio structures in regions compliant with wind ratings of N2, N3, N4, C1, C2 and C3 in accordance with AS4055 and Specification S4C2—Design of Building in Cyclonic Areas NCC2022 VOL 1 and Part H1D7 Sheet Roofing of NCC 2022 VOL 2 have been designed in accordance with widely accepted engineering principles and the referenced codes of practice and the form of construction complies with the requirements of the Housing Provisions.

This certification covers the members, connections and bracing. The systems designed include Skillion Patios, Multi Beam Patios, Gable Roof Patios, Simple Beam Patios. This certificate is limited to the structural design only and no responsibility is taken for any loss, damage or failure resulting from the method of construction or wind exceeding the design wind rating nominated. For structures with snow and ice loadings refer to Appendix A of this certificate.

The self-weight of the panels has been allowed for as well as a further dead load allowance of 0.25 kPa for additional fittings or solar panels.

Referenced Codes of Practice and Manuals

Ausdeck Engineering and Construction Manual V13.00.00 May 2026
 National Construction Code of Australia 2022, Amdt 2,
 Specification S4C2—Design of Building in Cyclonic Areas NCC2022 VOL 1, Amdt 2
 Part H1D7 Sheet Roofing of NCC2022 Vol 2, Amdt 2
 AS 1163:1991 Structural Steel Hollow Sections
 AS/NZS 1170.0:2002 Structural Design Actions Part 0—General Principles
 AS/NZS 1170.1:2002 Structural Design Actions Part 1—Permanent, Imposed & Other Actions
 AS/NZS 1170.2:2021 Structural Design Actions Part 2—Wind Actions
 AS/NZS 1170.3:2003 Design Actions Part 3—Snow and Ice Actions
 AS/NZS 1554.1:2004 Structural Steel Welding—Welding of Steel Structures
 AS1562.1: 2018 Design and installation of sheet roof and wall cladding Part 1: Metal
 AS/NZS 1664.1:1997 Aluminium structures - Limit state design
 AS 1684:2021 Residential Timber Framed Construction
 AS 3566.1:2002 Self Drilling Screws
 AS 3600:2018 Concrete Structures
 AS 4055:2021 Wind Loads for Housing
 AS 4100:2020 Steel Structures Code
 AS/NZS 4600:2018 Cold Formed Steel Structures

Summermore Pty Ltd accepts no responsibility for information that has not been expressly identified as part of this certification.

If we can be of any further assistance in this matter, please do not hesitate to contact this office.

Yours Faithfully

Ronald Bell
 FIEAust (891940), CPEng, NER, APEC Engineer, IntPE(Aus), Registered Engineer Structural NSW (BDC04601).
 Director
 Summermore Pty Ltd

If the plan is not registered by title, provide previous lot and plan details.

Street address			
		Suburb/locality	
State	QLD	Postcode	
Lot and plan details (<i>attach list if necessary</i>)			
Local government area the land is situated in			

2. Description of aspect/s certified

Clearly describe the extent of work covered by this certificate. e.g. all structural aspects of the steel roof beams.

Design of roof framing, and brackets, posts, footings and sheeting for the Ausdeck patio system for patio structures in regions compliant with wind ratings of N2, N3, N4, C1, C2 and C3 in accordance with AS4055. This certification complies with the NCC2022 Part A5G1 Performance Solution by providing evidence of suitability in accordance with Part A5G3.1.5. Systems designed include Skillion Patios, Multi Beam Patios, Simple Beam Patios through demonstration of the requirements of H1P1. These structures have been designed in accordance with widely accepted engineering principles and the referenced codes of practice and the form of construction complies with the requirements of the Housing Provisions.

This certificate is limited to the structural design only and no responsibility is taken for any loss, damage or failure resulting from the method of construction or wind exceeding the design wind rating nominated.

The roofs have been designed as NON TRAFFICABLE. It is recommended that a sign displaying this is located in the vicinity of access points to the roofs.

The self-weight of the panels has been allowed for as well as a further dead load allowance of 0.25 kPa for additional fittings or solar panels.

These structures are to be considered light weight with reference to QDC MP1.4 P1 and are not expected to develop adverse loads to infrastructure pipes (sewer and stormwater).

3. Basis of certification

Detail the basis for giving the certificate and the extent to which tests, specifications, rules, standards, codes of practice and other publications were relied upon.

National Construction Code of Australia 2022, Specification S4C2—Design of Building in Cyclonic Areas NCC2022 VOL 1, Amdt 2
Part H1D7 Sheet Roofing of NCC 2022 Vol 2, Amdt 2
AS 1163:1991 Structural Steel Hollow Sections
AS/NZS 1170.0:2002 Structural Design Actions Part 0—General Principles
AS/NZS 1170.1:2002 Structural Design Actions Part 1—Permanent, Imposed & Other Actions
AS/NZS 1170.2:2021 Structural Design Actions Part 2—Wind Actions
AS/NZS 1170.3:2003 Design Actions Part 3—Snow and Ice Actions
AS/NZS 1554.1:2004 Structural Steel Welding—Welding of Steel Structures
AS1562.1: 2018 Design and installation of sheet roof and wall cladding Part 1: Metal
AS/NZS 1664.1:1997 Aluminium structures - Limit state design
AS 1684:2021 Residential Timber Framed Construction
AS 3566.1:2002 Self Drilling Screws
AS 3600:2018 Concrete Structures
AS 4055:2021 Wind Loads for Housing
AS 4100:2020 Steel Structures Code
AS/NZS 4600:2018 Cold Formed Steel Structures

4. Reference documentation

Clearly identify any relevant documentation, e.g. numbered structural engineering plans.

Ausdeck Engineering and Construction Manual V13.00.00 May 2026 QDC MP1.4 P1
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5. Building certifier reference number and building development approval number

Building certifier reference number		Building development application number (if available)	
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6. Appointed competent person details

Under Part 6 of the Building Regulation a person must be assessed as a competent for the type of work (design-specification) by the relevant building certifier.

Name (in full)	Ronald Albert BELL		
Company name (if applicable)	Summermore Pty Ltd		
Contact person	Ron Bell		
Business phone number	0738000973	Mobile	0438288116
Email address	ron@summermore.com.au		
Postal address	PO Box 1671 Browns Plains, QLD, 4188.		
		Suburb/locality	
State	Choose an item.	Postcode	
Licence class or registration type (if applicable)	RPEQ		
Licence or registration number (if applicable)	6715		

9. Signature of appointed competent person

This certificate must be signed by the individual assessed and appointed by the building certifier as competent to give design-specification help.

Signature	
This Certificate Expires on 31 December 2026	

LOCAL GOVERNMENT USE ONLY

Date received	Click or tap to enter a date.	Reference number/s	
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Building Act 1993
Section 238(1)(a)
Building Regulations 2018
Regulation 126

GENERIC CERTIFICATE OF COMPLIANCE FOR PROPOSED BUILDING WORK

This certificate is issued to:

This certificate is issued in relation to the proposed building work at:

THE STATE OF VICTORIA

Nature of proposed building work

Design of roof framing, and brackets, posts, footings and sheeting for the Ausdeck patio system for patio structures in regions compliant with wind ratings of N2, N3, N4, C1, C2 and C3 in accordance with AS4055. This certification complies with the NCC2025 Part A5G1 Performance Solution by providing evidence of suitability in accordance with Part A5G3.1.5. Systems designed include Skillion Patios, Multi Beam Patios, Simple Beam Patios through demonstration of the requirements of H1P1. These structures have been designed in accordance with widely accepted engineering principles and the referenced codes of practice and the form of construction complies with the requirements of the Housing Provisions.

This certificate is limited to the structural design only and no responsibility is taken for any loss, damage or failure resulting from the method of construction or wind exceeding the design wind rating nominated.

The roofs have been designed as NON TRAFFICABLE. It is recommended that a sign displaying this is located in the vicinity of access points to the roofs.

Version of BCA applicable to certificate – 2022

Building classification

Various Structures

Prescribed class of building work for which this certificate is issued:

Design or part of the design of building work relating to Structural matter

Documents setting out the design that is certified by this certificate

Document no.	Document date	Type of document	Number of pages	Prepared by
V13.00.00	MAY2026	Engineering and Construction Manual	76	AUSDECK

The design certified by this certificate complies with the following provisions of the Building Act 1993, Building Regulations 2018 or Nation Construction Code.

Act, Regulation or NCC	Section, Regulation, Part, Performance Requirement or Other Provision
NCC 2025	Specification S4C2—Design of Building in Cyclonic Areas NCC2025 VOL 1 Part H1D7 Sheet Roofing of NCC 2025 Vol 2
AS/NZS1170.0:2002	Structural Design Actions—General Principles
AS/NZS1170.1: 2002	Structural Design Actions—Permanent, Imposed & Other Actions
AS/NZS1170.2:2021	Structural Design Actions—Wind Actions
AS/NZS 1170.3:2003	Structural Design Actions Part 3—Snow and Ice Actions
AS/NZS1554.1:2004	Structural Steel Welding – Welding of Steel Structures
AS/NZS1664.1:1997	Aluminium Structures – Limit State Design
AS3566.1:2002	Self Drilling Screws
AS3600:2018	Concrete Structures
AS4055:2021	Wind Loads for Housing
AS4100:2020	Cold Formed Steel Structures
AS/NZS 1163:2016	Cold-Formed Steel Hollow Sections

*I prepared the design, or part of the design, set out in the documents listed above.

I certify that the design set out in the documents listed above complies with the provisions set out above.

I believe that I hold the required skills, experience and knowledge to issue this certificate and can demonstrate this if requested to do so.

Engineer

Name: Ronald Albert BELL

Address: PO Box 1671, Browns Plains, QLD, 4118.

Email: ron@summermore.com.au

Endorsed building engineer area of engineering: Structural / Civil

Endorsed building engineer registration no.: PE0002564

Date of issue of certificate: Sunday, 3 May 2026

Signature:

This Certification Expires on 31 December 2026



For further information
and advice call Ausdeck:
**1300 287 332 or 1300
AUSDECK**

Queensland Head Office
56-72 Bandara Street,
Richlands QLD 4077

New South Wales Head Office
Unit 3, 34-38 Anzac Avenue,
Smeaton Grange NSW 2567
ausdeck.com.au

**Our part is
the solution**