

nordeck®

Patio Design & Install Guide



Colorbond®
THE COLOURS OF AUSTRALIA SINCE 1966

NORFOAM®

v1 - Current 29/05/2023

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Certification



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Nordeck® Specifications

Nordeck® is a long-spanning commercial and residential insulated roof panel system that combines roofing, EPS-FR insulation and a pre-painted ceiling in one durable, functional and attractive roof panel. This all-in-one roofing solution is manufactured using Australian-made COLORBOND® steel for durability and is installed in a variety of applications including educational facilities, multi-residential housing and retail facilities and is tested for use in cyclonic regions.

Core	EPS-FR (Expanded Polystyrene with fire retardant)
Width (cover mm)	1000
Thickness (mm)	50, 75, 100, 125, 150, 175, 200
Length	Up to 24m (check for availability)
External Material	0.42mm G550 COLORBOND® steel
External Finishes	High-Rib Trapezoidal Profile
Exterior Colour Options	Classic Cream™, Surfmist®, Paperbark®, Shale Grey™, Dune®, Pale Eucalypt®, Manor Red®**, Basalt®^, Woodland Grey®^**
Internal Material	0.6mm G300 COLORBOND® steel
Internal Finishes	Plain, VJ
Interior Colour Options	Classic Cream™, Surfmist®
Pitch	2 degree minimum, refer Norfoam®
Paint System	AS/NZS 2728 & AS 1397

Panel Properties

Panel Thickness (mm)	50	75	100	125	150	175	200
Typical Mass (kg/m²)	10.6	10.9	11.3	11.6	12.0	12.3	12.7
SL Grade Declared λ (W/m.K) at 23°C	0.042	0.042	0.042	0.042	0.042	0.042	0.042
SL Grade Declared R-value (m²K/W) at 23°C	1.20	1.80	2.40	3.00	3.60	4.25	4.85
SL Grade Total R-value (m²K/W) at 15°C (Winter)	1.40	2.03	2.65	3.27	3.90	4.52	5.15
SL Grade Total R-value (m²K/W) at 30°C (Summer)	1.38	1.98	2.57	3.17	3.76	4.35	4.95

Note: The Declared R-value is at 23°C in accordance with AS/NZS 4859.1:2018 & AS/NZS 4859.2:2018.

* Conditions may apply.

** Limited availability.

^ Darker colours warranted for use in limited regions. Check with your local Nordeck® dealer for more information.

Overview

The Nordeck® Patio Design & Install Guide and stamped local Building certification material has been provided for generic Nordeck® patio structures only which is based on the structural capacity determined through physical testing in accordance with the relevant Australian Standards. Other products will perform differently due to differences in steel and core material selection, manufacturing methods and testing.

The design and construction shall be compliant with the current Australian National Construction Code (NCC) and other applicable regulations and standards. The user is responsible that the details in this specification are appropriate for the intended application and that additional detailing is performed for specific design requirements or any areas that fall outside the scope of this specification.

This manual has details suited to use in a domestic application only with loading and deflection criteria relevant.

Introduction

This document is to be used in accordance with current Australian building standards. Please note, it is the licensed builder's responsibility to ensure structural adequacy of any existing structures are determined before attaching a Nordeck® structure.

Please note for accurate capacity calculation, the formulas throughout this document must be completed and resulting values transposed to the Summary Table of Engineering Calculations.

Below is an example of the formula calculation boxes you will find on most sections.

Example Only

STEP 4.1: Beam Load Width								
		A (patio roof span to Beam)			B (patio roof overhang)			
Load Width on Beam = (0.5 x A) + B (mm)								
0.5	x	A (mm)	Equals	(0.5xA) (mm)	Plus	B (mm) Enter at Step 4	Equals	Load Width on Beam (mm) Enter at Step 4.1
0.5	x	2000	=	1000	+	250	=	1250

Summary of patio information selected				
Step	Step	Page	Figure from Formula	Unit of Measurement
4.1	Load Width on Beam	12	1250	mm

Engineering Calculations

Summary of patio information selected					
Step	Step	Page	Options	Enter Value	
1	Wind Classification Determination (N1, N2, N3, N4, C1, C2, C3)	6	<input type="checkbox"/> N1 <input type="checkbox"/> C1 <input type="checkbox"/> N2 <input type="checkbox"/> C2 <input type="checkbox"/> N3 <input type="checkbox"/> C3 <input type="checkbox"/> N4		-
2	Product & Panel Thickness	7	<input type="checkbox"/> Nordeck®		-
3	Case Type & Max Span	8	<input type="checkbox"/> Case A <input type="checkbox"/> Case B <input type="checkbox"/> Case C <input type="checkbox"/> Case D <input type="checkbox"/> Case E		mm
4 Beam Loading	4.1	Load Width on Beam	9		mm
	4.2	Uplift Load on Beam	10		kN/m
5 Beam Selection	5.1	Beam Type	11		-
	5.2	Beam Size	11		-
	5.3	Single or Multi-span	11		-
	5.4	Distance between Posts	11		mm
	5.5	Load Capacity	11		kN/m
6.1 Post Uplift	6.1.4	Max Uplift on Post	12		kN
6.2	6.2.1	Post to Beam Connection Type	13/14	<input type="checkbox"/> (A) R.H.S. Post to R.H.S. Beam Joint <input type="checkbox"/> (B) Timber Post to Beam Joint <input type="checkbox"/> (C) Notched Post to Roll Formed Beam Joint <input type="checkbox"/> (D) Proprietary Systems	-
	6.2.2	Bolt Size & Allowable Uplift on Post	13		-
6.3	Post to Ground Connection Type	15/17	<input type="checkbox"/> In Ground Footing <input type="checkbox"/> Footing with Slab Over <input type="checkbox"/> On Slab Footing		-
7	Patio to House Connection Type	18/21	<input type="checkbox"/> For Metal Fascias (7.1) <input type="checkbox"/> For Timber Fascias (7.2) <input type="checkbox"/> Offset Post (7.3) <input type="checkbox"/> Removed Fascia (7.4) <input type="checkbox"/> Brick/Masonry Wall (7.5) <input type="checkbox"/> Rafter Bracket for Fly-Over - Roof Extenda (7.6)		-
8	Gable Structures	24/25			kN/m

Site Address			
Street	Suburb	Post Code	State

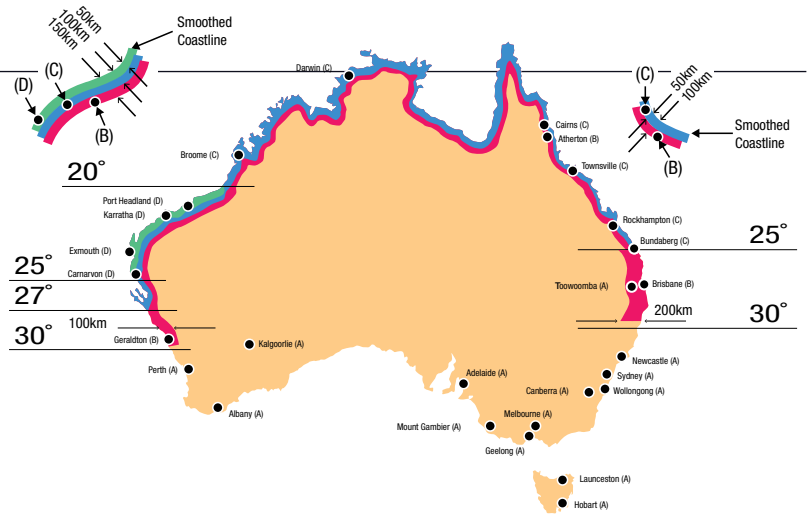
1.0 Wind Classification

This section is a simplification of AS 4055:2021 for the selection of a design Wind Classification for residential structures (NCC class 1 or 10) up to 8.5m tall.

Refer to AS 4055:2021 for more information.

Refer to AS/NZS 1170.2:2021 for other application.

■ Region A
 ■ Region B
 ■ Region C
 ■ Region D



1.1 Wind Region

Location Classification

Shielded on flat terrain in suburban area
REGION A - N1, REGION B - N2
and REGION C - C1

Unshielded on gentle terrain in urban area
REGION A - N3, REGION B - N4
and REGION C - C3

Unshielded in suburban area.
REGION A - N2, REGION B - N3 and
REGION C - C2

Shielded on gentle terrain in suburban area
REGION A - N2, REGION B - N3 and
REGION C - C2

Unshielded on steep terrain in urban
on the crest of a hill
REGION A - N4

Unshielded next to seafront
REGION A - N3, REGION B - N4
and REGION C - C3

Wind Classification to AS4055-2021

Wind Region	Terrain	Topographic Type					
		Flat		Gentle		Steep	
		Shielded	Not Shielded	Shielded	Not Shielded	Shielded	Not Shielded
A	Suburban	N1	N1	N1	N2	N2	N2
	Rural	N1	N2	N2	N3	N2	N3
	Coastal	N2	N3	N2	N3	N3	N3
B	Suburban	N2	N3	N2	N3	N3	N4
	Rural	N2	N3	N3	N4	N3	N4
	Coastal	N3	N4	N3	N4	N4	N5
C	Suburban	C1	C2	C2	C2	C2	-
	Rural	C2	C2	C2	-	-	-
	Coastal	C2	C3	C3	-	-	-
D	Suburban	C2	C3	C3	-	-	-
	Rural	C3	-	C3	-	-	-
	Coastal	C3	-	-	-	-	-

Note: Suburban - Average spacing of surrounding houses or buildings 30m or less (Terrain Category = TC3). Rural - Average spacing of surrounding houses or buildings greater than 30m (Terrain Category = TC2). Coastal - Within 500mm of the ocean or large body of water larger than 10km in any direction (Terrain Category = TC1). Flat - less than 1:20 surrounding slopes (T0). Gentle - Between 1:20 and 1:10 surrounding slopes (T1). Steep - Between 1:10 and 1:7.5 surrounding slopes (T2). Terrain may be based on the likely terrain five years after design. Substantial well-established trees may be considered as obstructions for evaluation of terrain category in all wind regions.

STEP 1: Wind condition at site (N2, etc)					
Find location. Determine Region.					
City	Suburb	Wind Region	Terrain Type	Shielding	Wind Classification Enter at Step 1

2.0 Nordeck® Panel Overview

Roofing Layer

- Superior low pitch of 2° minimum
- Available in thermally efficient and modern colours
- Australian made and proven COLORBOND® steel



Ceiling Layer

- Plain ceiling underside pre-finished in Surfemist® or Classic Cream™*
- Two ceiling finish options in Plain or VJ
- Low maintenance and durable COLORBOND® steel

Insulation Layer

- Outstanding thermal performance with CorePlus® EPS-FR Insulation
- Choose from 50 (R1.40), 75 (R2.03), 100 (R2.65), 125 (R3.27), 150 (R3.90), 175 (R4.52) & 200mm (R5.15) core thicknesses
- Service cabling ducts for ceiling lights and fans

Roof Colour Range

Nordeck's colour range has been rigorously tested and hand picked with the support of BlueScope® Steel to offer roofing colours with the best thermal performance, made tough for Australian conditions.



Ceiling Finishes

Nordeck's ceiling layer is made from proven BlueScope COLORBOND® steel, available pre-finished in Surfemist® (offwhite) or Classic Cream™. Select from two popular ceiling underside finishes in either Plain or VJ that complement the home and offer stylish design options for your outdoor area.



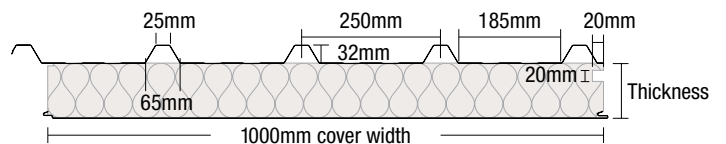
Plain - Contemporary Look

The 'Plain' ceiling finish is a popular smooth ceiling surface option that embodies contemporary design, suitable for the modern home.

VJ - Heritage Look

'VJ' delivers a ceiling look with distinct lines that emulate the look and feel of a heritage style home.

Dimensions



* Conditions may apply.

** Limited availability.

^ Darker colours warranted for use in limited regions. Check with your local Nordeck® dealer for more information.

3.0 Nordeck® Maximum Span



Select the Nordeck® panel thickness from the Span Table below for the Wind Classification at the site (refer to building inspector if required) and the number of sides enclosed under the roof (Case A to E).



Nordeck® Span Table - Domestic Patios Single Spans (mm)

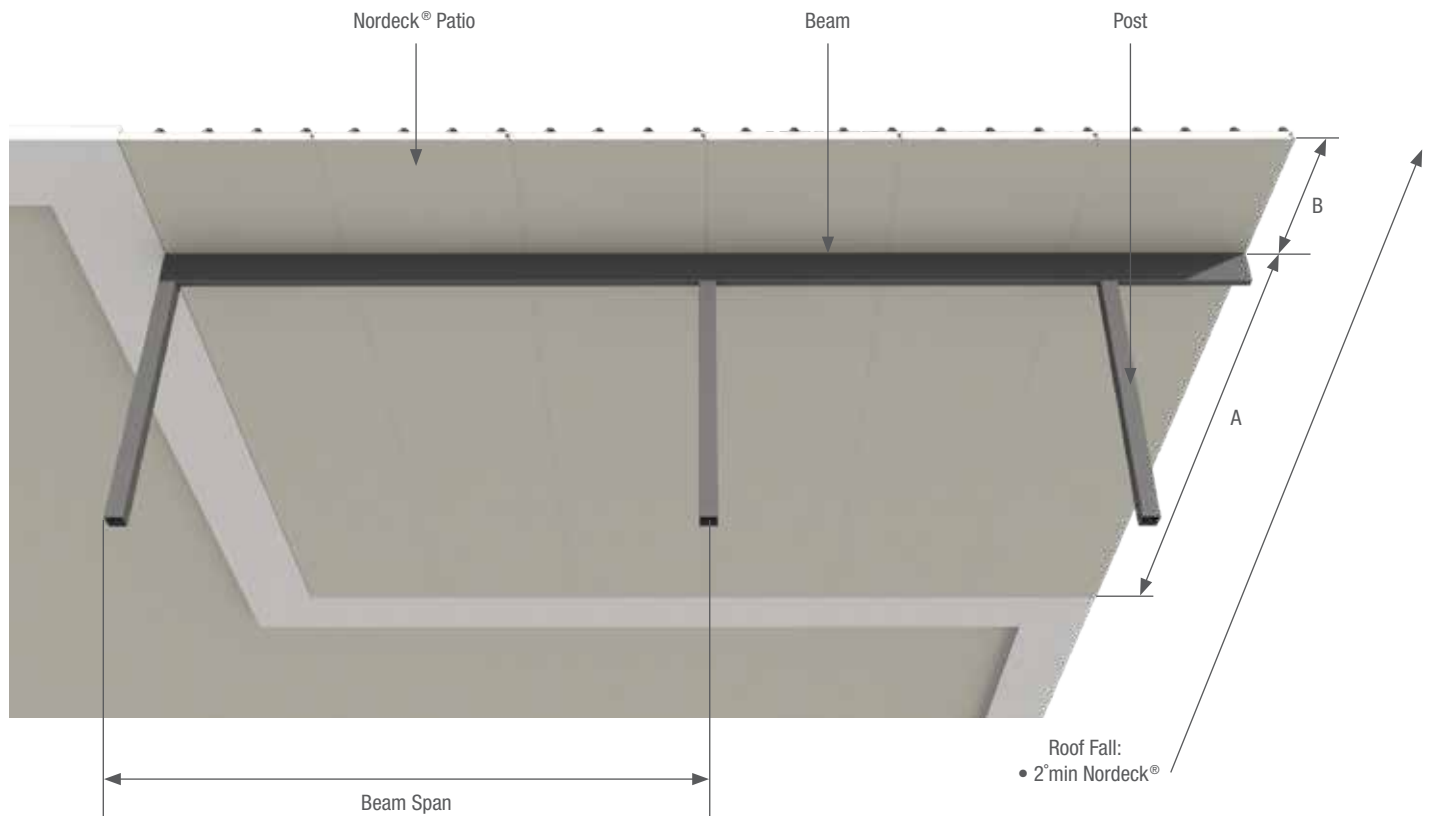
Wind category	Panel thickness (mm)	Case A 3 open sides		Case B 2 open sides		Case C 1 open side		Case D fully enclosed		Case E free standing	
		A	B	A	B	A	B	A	B	A	B
		Max. span	Max. overhang	Max. span	Max. overhang	Max. span	Max. overhang	Max. span	Max. overhang	Max. span	Max. overhang
N1	50	5600	1400	5550	1400	5000	1250	5250	1300	5600	1400
	75	7100	1800	6500	1650	5850	1450	6150	1550	7100	1800
	100	8000	2000	7350	1850	6650	1650	6950	1750	8000	2000
	125	8750	2200	8150	2050	7350	1850	7700	1950	8700	2200
	150	9500	2400	8850	2200	7950	2000	8400	2100	9500	2400
	200	10750	2700	10150	2550	9100	2300	9600	2400	10750	2700
N2	50	5600	1400	4600	1150	4150	1050	4350	1100	5600	1400
	75	6850	1700	5400	1350	4900	1250	5150	1300	7100	1800
	100	7700	1950	6100	1550	5550	1400	5800	1450	8000	2000
	125	8300	2100	6750	1700	6100	1550	6400	1600	8700	2200
	150	9100	2300	7350	1850	6650	1650	6950	1750	9500	2400
	200	10100	2550	8400	2100	7600	1900	7950	2000	10500	2650
N3	50	4850	1200	3600	900	3300	850	3450	850	5100	1300
	75	5700	1450	4250	1050	3850	950	4050	1000	6000	1500
	100	6400	1600	4800	1200	4350	1100	4550	1150	6750	1700
	125	7050	1750	5300	1350	4800	1200	5050	1250	7400	1850
	150	7650	1900	5750	1450	5200	1300	5450	1350	8000	2000
	200	8650	2150	6550	1650	5950	1500	6250	1550	9100	2300
N4	50	3900	1000	2950	750	2700	700	2800	700	4100	1050
	75	4550	1150	3450	850	3150	800	3300	850	4800	1200
	100	5150	1300	3900	1000	3550	900	3700	950	5450	1350
	125	5700	1450	4300	1100	3900	1000	4100	1050	6000	1500
	150	6200	1550	4650	1150	4250	1050	4450	1100	6500	1650
	200	7050	1750	5300	1350	4850	1200	5050	1250	7450	1850
C1	50	4900	900	3600	900	3300	800	2600	600	4900	900
	75	5900	1200	4600	1100	3900	900	3100	700	5900	1200
	100	6900	1300	5000	1200	4500	1000	3700	900	6900	1300
	125	7700	1400	5600	1300	5100	1100	4100	1000	7700	1400
	150	8800	1400	6600	1400	5900	1400	6200	1400	8800	1400
	200	10000	1600	7800	1600	7000	1600	7400	1600	10000	1600
C2	50	4000	800	2900	600	2700	600	2000	450	4000	800
	75	4800	1000	3500	700	3100	700	2000	500	4800	1000
	100	5600	1100	4100	800	3700	800	2700	600	5600	1100
	125	6300	1200	4600	900	4200	900	3000	700	6300	1200
	150	7100	1400	5300	1300	4800	1200	5100	1200	7100	1400
	200	8300	1600	6300	1500	5800	1400	6100	1400	8300	1600
C3	50	3300	800	2400	600	2000	450	N/A	N/A	3300	800
	75	4000	1000	2500	600	2100	500	N/A	N/A	4000	1000
	100	4600	1100	3300	800	2800	600	1900	450	4600	1100
	125	5200	1200	3700	900	3100	700	2000	500	5200	1200
	150	5700	1400	4300	1000	3900	900	4100	1000	5700	1400
	200	6700	1600	5100	1200	4700	1100	5000	1200	6700	1600

- Note:
- Applies to patios attached to highset and lowset houses only.
 - The overhang must not exceed 25% of the immediate backspan.
 - With a full-width panel measuring 1000mm, the maximum allowable side and corner overhang is 400mm.
 - In the case of free-standing awnings, it is permissible to utilize 'Case A - 3 Open Sides', as long as it is not blocked under.
 - For free-standing awnings, the strength, serviceability, and stability of the supporting members such as beams, posts, and footings must be independently assessed.
 - A deflection limit of Span/150 has been allowed for.
 - Dead loads of up to 15kg/m² are permissible.
 - A concentrated load of 1.4kN for incidental and maintenance has been allowed for each span. It is important to avoid stepping on the ribs. Live loads are not permitted on overhangs.
 - When using Nordeck® Naturelite® skylight with a minimum of 2 full Nordeck® panels in between, the maximum allowable spans must be reduced by 10%.
 - When using Nordeck® Naturelite® skylight with a minimum of 1 full Nordeck® panels in between, the maximum allowable spans must be reduced by 25%.
 - Nordeck® Naturelite® skylight should not be walked on or used for foot traffic.
 - Nordeck® Naturelite® skylight can only be used on patios in Non-Cyclonic regions, it must not to be used in Cyclonic areas.

STEP 3: Nordeck® Max Roof Span				
Determine Max Roof Span				
Product	Panel Thickness	Case Type	Wind Classification	Max Span (mm) Enter at Step 3

4.0 Beam Loading

4.1 Determine Load Width on Beam



STEP 4.1: Beam Load Width									
A (patio roof span to Beam) B (patio roof overhang)									
Load Width on Beam = (0.5 x A) + B (mm)									
0.5	x	A (mm)	Equals	(0.5xA) (mm)	Plus	B (mm) Enter at Step 4	Equals	Load Width on Beam (mm) Enter at Step 4.1	
0.5	x		=		+		=		

4.2 Uplift Load on Beam Table

Use the Load Width from (4.1) to select the Uplift Load on Beam (kN/m) from the table below for the particular Wind Classification and enclosure case (A, B, C, D & E). Enter at Step 4.2.

Wind Category	Load Width (mm)	Uplift Load on Beam (kN/m)				
		Case A 3 Open Sides	Case B 2 Open Sides	Case C 1 Open Side	Case D Fully Enclosed	Case E Free Standing
N1/N2	1500	0.84	1.44	1.73	1.58	0.84
	2100	1.17	2.02	2.42	2.22	1.17
	2700	1.50	2.59	3.11	2.85	1.50
	3300	1.84	3.17	3.80	3.48	1.84
	3900	2.17	3.74	4.49	4.12	2.17
	4500	2.51	4.32	5.18	4.75	2.51
	5100	2.84	4.90	5.88	5.39	2.84
	5700	3.17	5.47	6.57	6.02	3.17
	6300	3.51	6.05	7.26	6.65	3.51
	6900	3.84	6.62	7.95	7.29	3.84
	7500	4.18	7.20	8.64	7.92	4.18
	8100	4.51	7.78	9.33	8.55	4.51
	8700	4.84	8.35	10.02	9.19	4.84
	9000	5.01	8.64	10.37	9.50	5.01
	9600	5.35	9.22	11.06	10.14	5.35
	N3	1500	1.31	2.25	2.70	2.48
2100		1.83	3.15	3.78	3.47	1.83
2700		2.35	4.05	4.86	4.46	2.35
3300		2.87	4.95	5.94	5.45	2.87
3900		3.39	5.85	7.02	6.44	3.39
4500		3.92	6.75	8.10	7.43	3.92
5100		4.44	7.65	9.18	8.42	4.44
5700		4.96	8.55	10.26	9.41	4.96
6300		5.48	9.45	11.34	10.40	5.48
6900		6.00	10.35	12.42	11.39	6.00
7500		6.53	11.25	13.50	12.38	6.53
8100		7.05	12.15	14.58	13.37	7.05
8700		7.57	13.05	15.66	14.36	7.57
9000		7.83	13.50	16.20	14.85	7.83
9600		8.35	14.40	17.28	15.84	8.35
N4		1500	1.94	3.35	4.02	3.68
	2100	2.72	4.69	5.63	5.16	2.72
	2700	3.50	6.03	7.23	6.63	3.50
	3300	4.27	7.37	8.84	8.10	4.27
	3900	5.05	8.71	10.45	9.58	5.05
	4500	5.83	10.05	12.06	11.05	5.83
	5100	6.60	11.39	13.66	12.52	6.60
	5700	7.38	12.73	15.27	14.00	7.38
	6300	8.16	14.07	16.88	15.47	8.16
	6900	8.93	15.40	18.49	16.95	8.93
	7500	9.71	16.74	20.09	18.42	9.71
	8100	10.49	18.08	21.70	19.89	10.49
	8700	11.27	19.42	23.31	21.37	11.27
	9000	11.65	20.09	24.11	22.10	11.65
	9600	12.43	21.43	25.72	23.58	12.43
	C1	1500	1.31	2.25	2.70	2.70
2100		1.83	3.15	3.78	3.78	1.83
2700		2.35	4.05	4.86	4.86	2.35
3300		2.87	4.92	5.94	5.84	2.87
3900		3.39	5.85	7.02	7.02	3.39
4500		3.92	6.75	8.10	8.10	3.92
5100		4.44	7.65	9.18	9.18	4.44
5700		4.96	8.55	10.26	10.26	4.96
6300		5.48	9.45	11.34	11.34	5.48
6900		6.00	10.35	12.42	12.42	6.00
7500		6.53	11.25	13.50	13.50	6.53
8100		7.05	12.15	14.58	14.58	7.05
8700		7.57	13.05	15.66	15.66	7.57
9000		7.83	13.50	16.20	16.20	7.83
9600		8.35	14.40	17.28	17.28	8.35
C2		1500	1.94	3.35	4.02	4.02
	2100	2.72	4.69	5.63	5.63	2.72
	2700	3.50	6.03	7.23	7.23	3.50
	3300	4.27	7.37	8.84	8.84	4.27
	3900	5.05	8.71	10.45	10.45	5.05
	4500	5.83	10.05	12.06	12.06	5.83
	5100	6.60	11.39	13.66	13.66	6.60
	5700	7.38	12.73	15.27	15.27	7.38
	6300	8.16	14.07	16.88	16.88	8.16
	6900	8.93	15.40	18.49	18.49	8.93
	7500	9.71	16.74	20.09	20.09	9.71
	8100	10.49	18.08	21.70	21.70	10.49
	8700	11.27	19.42	23.31	23.31	11.27
	9000	11.65	20.09	24.11	24.11	11.65
	9600	12.43	21.43	25.72	25.72	12.43
	C3	1500	2.86	4.93	5.91	5.91
2100		4.00	6.90	8.28	8.28	4.00
2700		5.15	8.87	10.65	10.65	5.15
3300		6.29	10.84	13.01	13.01	6.29
3900		7.43	12.81	15.38	15.38	7.43
4500		8.58	14.79	17.74	17.74	8.58
5100		9.72	16.76	20.11	20.11	9.72
5700		10.86	18.73	22.47	22.47	10.86
6300		12.01	20.70	24.84	24.84	12.01
6900		13.15	22.67	27.20	27.20	13.15
7500		14.29	24.64	29.57	29.57	14.29
8100		15.44	26.61	31.94	31.94	15.44
8700		16.58	28.58	34.30	34.30	16.58
9000		17.15	29.57	35.48	35.48	17.15
9600		18.29	31.54	37.85	37.85	18.29

- Notes:
- Linear interpolation is permitted between Load Width values in the table.
 - In cyclonic regions, it is assumed that doors/windows will blow in and therefore fully enclosed is designed as 1 open side as this is a worse case than fully enclosed.

STEP 4.2: Uplift Load on Beam Table				
Select the correct Uplift Load based on the relevant criteria				
Wind Classification	Load Width (mm)	Case	Equals	Enter at Step 4.2
			=	

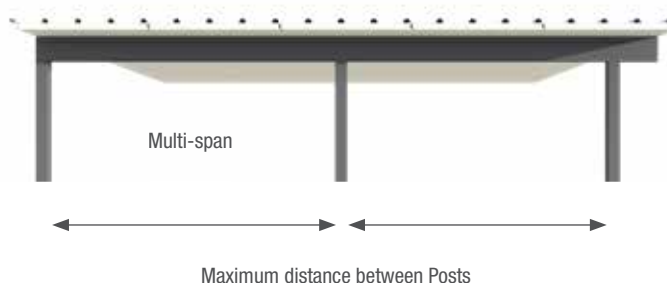
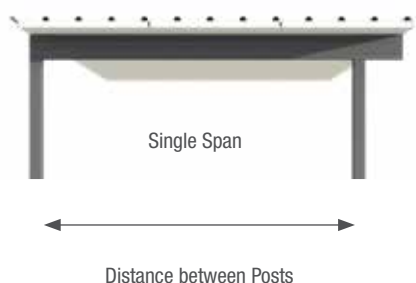
5.0 Beam Selection

Lookup Beam Load Capacities Table (kN/m)

Select the beam from the Beam Load Capacities Table below for the Uplift Load on Beam (kN/m).

Load Capacities of Beams (kN/m) - Ultimate Limit State																	
Beam Details		Step 5: Maximum Beam Span mm (distance between Posts)															
Step 5: Beam Type	Beam Size	1800		2400		3000		3600		4200		4800		5400		6000	
		Single Span	Multi-span	Single Span	Multi-span	Single Span	Multi-span	Single Span	Multi-span	Single Span	Multi-span	Single Span	Multi-span	Single Span	Multi-span	Single Span	Multi-span
Shademaster	RF 125x50x1.0	10.0	10.0	7.5	7.5	4.8	4.8	3.2	3.3	2.0	2.3	1.3	1.8	0.8	1.5	0.6	1.1
	RF 175x65x1.15	10.0	10.0	10.0	10.0	9.0	9.0	6.3	6.3	4.5	4.5	3.5	3.5	2.8	2.8	2.0	2.3
	RF 200x60x1.0	14.7	14.7	14.7	14.7	14.7	14.7	9.7	9.7	6.9	6.9	5.1	5.1	3.9	3.9	3.0	3.0
BON ALBEAM	100x50x3x2	7.4	7.4	4.1	4.1	2.6	2.6	1.8	1.8	1.3	1.3	1.0	1.0	-	-	-	-
	165x50x3x2.5	16.9	16.9	9.4	9.4	6.0	6.0	4.1	4.1	3.0	3.0	2.3	2.3	1.8	1.8	1.5	1.5
	225x50x3x3	30.1	30.1	17.1	17.1	10.9	10.9	7.5	7.5	5.5	5.5	4.2	4.2	3.3	3.3	2.7	2.7
RHS	76x38x2.5	7.9	7.9	4.3	4.3	2.6	2.7	1.5	1.8	0.9	1.3	0.6	1.0	0.4	0.8	-	-
	75x50x3	13.2	13.2	7.4	7.4	4.3	4.6	2.5	3.1	1.5	2.3	1.0	1.7	0.7	1.3	5.0	1.0
	100x50x3	20.7	20.7	11.6	11.6	7.4	7.4	5.1	5.1	3.2	3.8	2.1	2.9	1.5	2.3	1.1	1.8
	125x75x3	36.7	36.7	20.6	20.6	13.2	13.2	9.2	9.2	6.7	6.7	4.9	5.1	3.5	4.0	2.5	3.3
	150x50x3	39.9	39.9	22.4	22.4	14.3	14.3	9.9	9.9	7.3	7.3	5.6	5.6	4.3	4.4	3.1	3.5
	150x100x4	114.3	113.3	64.3	64.3	41.1	41.1	28.5	28.5	18.0	21.0	12.0	16.0	8.4	12.7	6.1	10.2
Timber	150x75 F14	28.7	25.0	16.1	14.0	10.3	9.0	6.1	6.2	3.8	4.5	2.6	3.5	1.8	2.7	1.3	2.2
	200x75 F14	51.1	44.4	28.7	25	18.4	16.0	12.7	11.1	9.2	8.1	6.1	6.2	4.3	4.9	3.1	4
Purlins	C15015	14.5	15.9	8.1	8.2	4.0	5.4	2.2	3.7	1.3	2.7	0.8	2.0	0.5	1.4	-	1.0
	C15019	15.7	26.4	8.8	15.8	5.6	7.6	3.0	5.3	1.7	3.7	1.1	2.6	0.7	1.9	0.5	1.4
	C20015	20.2	15.1	11.3	10.3	7.2	6.1	4.1	4.6	2.4	3.6	1.5	2.8	1.0	2.2	0.7	1.8
	C20019	29.3	28.0	16.5	18.6	10.5	10.6	5.7	7.8	3.5	5.7	2.2	4.3	1.1	3.4	1.0	2.5
Lysaght Firmlok	F10011	7.8	6.3	4.7	4.7	2.9	3.0	1.6	2.1	1.0	1.5	-	1.1	-	-	-	-
	F15015	11.4	9.1	8.5	6.8	6.8	5.4	5.0	4.5	3.7	3.7	2.5	2.8	1.8	2.2	1.3	1.8
	F20020	18.2	14.5	13.6	10.9	10.9	8.7	9.1	7.2	7.3	6.2	5.6	5.4	4.4	4.4	3.5	3.6
Metroll A.Beam	150x65	4.6	11.6	2.3	5.7	1.4	3.4	0.8	1.8	0.5	1.2	0.4	0.9	0.2	0.5	0.2	0.4
Groove Tube	150x50x1.6	13.5	13.5	8.4	10.4	5.4	6.7	3.5	4.7	2.2	3.4	1.5	2.6	1.0	2.1	0.8	1.7

Notes: Overhang = Span/4 max



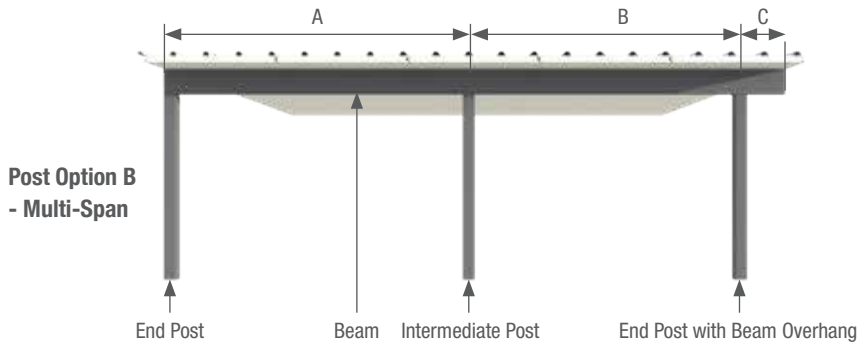
STEP 5: Beam Type Selected from Table				
Beam Type Enter at Step 5.1	Beam Size Enter at Step 5.2	Single or Multi-span Enter at Step 5.3	Distance between Posts (mm) Enter at Step 5.4	Load Capacity (kN/m) Enter at Step 5.5

6.0 Posts and Footings

6.1 Post Uplift

Select Load Width on each Post, refer to diagram.

Note: Overhang $C \leq B/4$



STEP 6.1: Max Spacing between Posts				
Load Width on End Post = $0.5 \times A$ (m)				
0.5	x	A (m)	Equals	Load Width on End Post (m) Enter at 6.1.1
0.5	x		=	

Load Width on Intermediate Post (for Multi-Span only) = $0.5 \times (A+B)$ (m)								
A (m)	Plus	B (m)	Equals	(A+B)	x	0.5	Equals	Load Width on Intermediate Post (m) Enter at 6.1.2
	+		=		x	0.5	=	

Load Width on End Post with Beam Overhang = $(0.5 \times B) + C$ (m)								
0.5	x	B (m)	Equals	$(0.5 \times B)$	Plus	C (m)	Equals	Load Width on End Post with Beam Overhang (m) Enter at 6.1.3
0.5	x		=		+		=	

Maximum Uplift on Post (kN) = Maximum Post Load Width (m) x Uplift Load on Beam (kN/m) from Step 4.2													
Maximum	of	6.1.1 Load Width on End Post (m)	or	6.1.2 Load Width on Intermediate Post (m)	or	6.1.3 Load Width on End Post with Beam Overhang (m))	Equals	Maximum Post Load Width	x	Value from Step 4.2	Equals	Maximum Uplift on Post (kN) Enter at Step 6.1.4
MAX	(,		,)	=		x			

6.2 Post to Beam Connection

For each Post, use the Uplift on Post (kN) to select the Post to Beam Connection.

BOLT SIZE TABLE					
Post Material	Grade	Maximum Uplift on Post (kN)			
		Min. Post Thickness (mm)	2-M12/4.6	2-M16/4.6	2-M20/4.6
Timber	JD4/J3	90	15.6	20.9	-
Steel (Hollow Section)	G350	2	28.0	38.0	48.0
Cold-Formed Steel (Typical)	G450	0.6	7.8	9.3	11.7
Cold-Formed Steel (Firmlok)	G550	1	15.6	20.7	21.6
		2	31.0	42.0	52.0

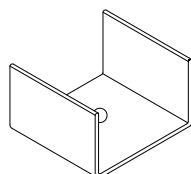
Note: Assumed minimum edge distance for all steel and aluminium as 2x bolt diameter (centre of hole to edge of beam). Timber has larger edge distance requirements of 8D.

Aluminium Post & Post Connector

For the connection of posts to concrete floors/footings, timber floors/decks and beams.

BOLT SIZE TABLE					
Post Material	Grade	Maximum Uplift on Post (kN)			
		Min. Post Thickness (mm)	2-M12/4.6	2-M16/4.6	2-M20/4.6
BON ALPOST150	6063-T6	3	36.0	50.0	62.0
BON ALPOST90A	6063-T6	2	24.0	33.0	42.0
BON ALPOST90B	6063-T5	2	15.0	20.0	25.0

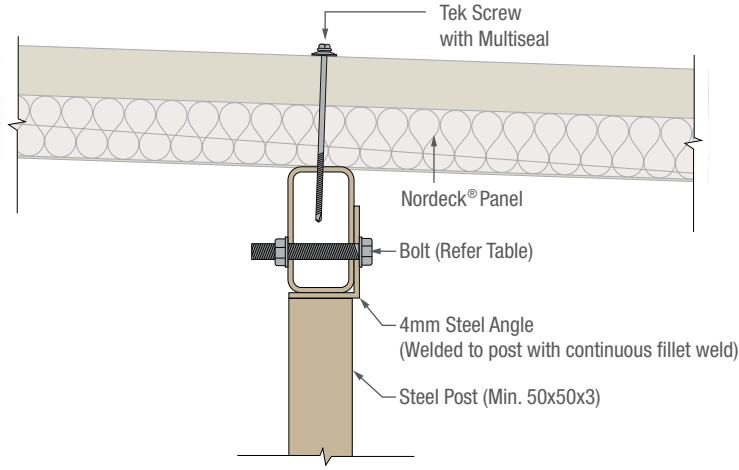
Steel Post Connector
3mm Galvanised Steel
90 & 150mm Max. 4.5kN



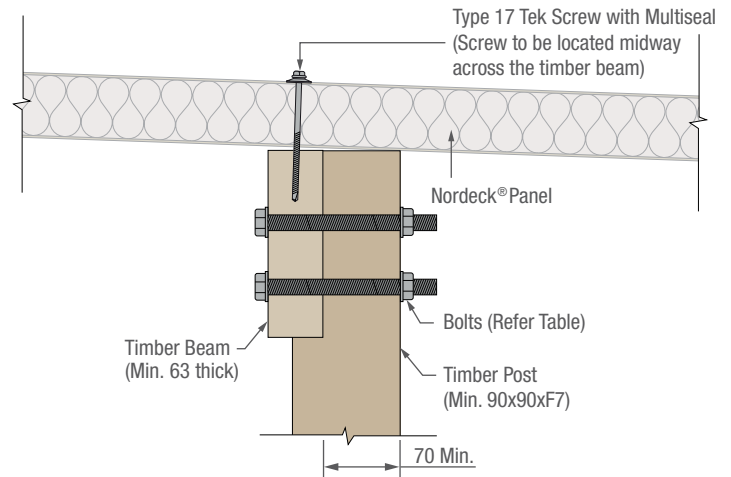
STEP 6.2: Post to Beam Connection Bolt Size				
Connection Type Enter at 6.2.1	Material	Grade	Thickness	Bolt Size Enter at 6.2.2

Refer to Section 7.7 for fixing requirements for panels to roof beams.

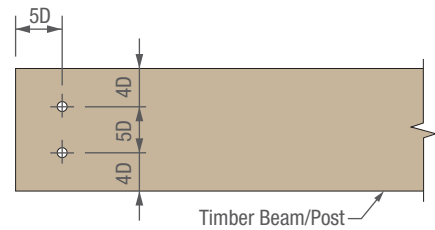
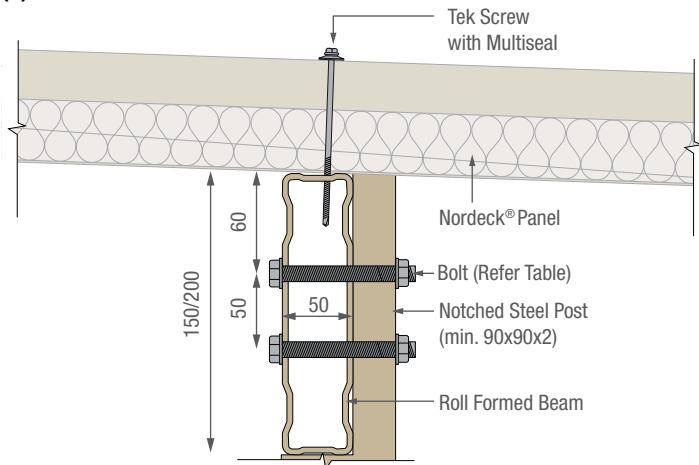
(A) RHS Post to RHS Beam Joint



(B) Timber Post to Beam Joint

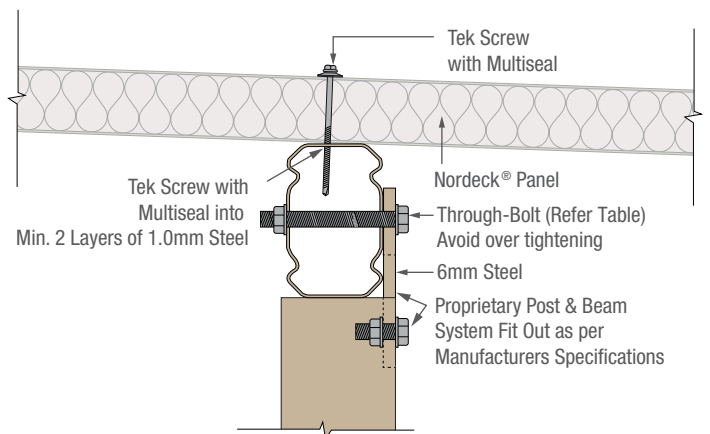


(C) Notched Post to Roll Formed Beam Joint



Note
D= Denotes Bolt Diameter

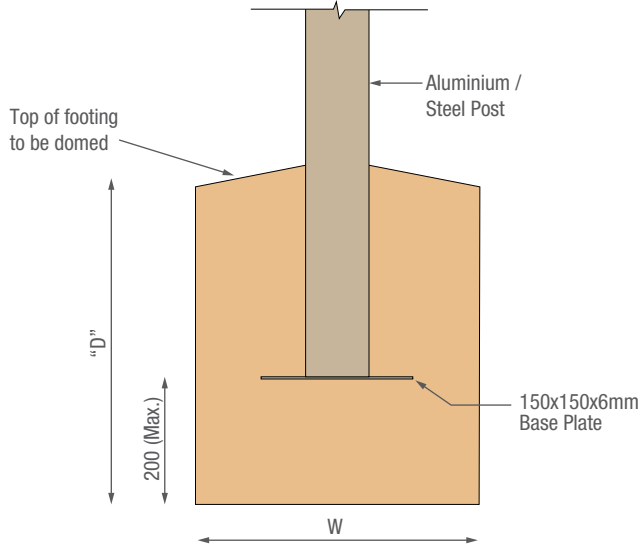
(D) Proprietary Systems



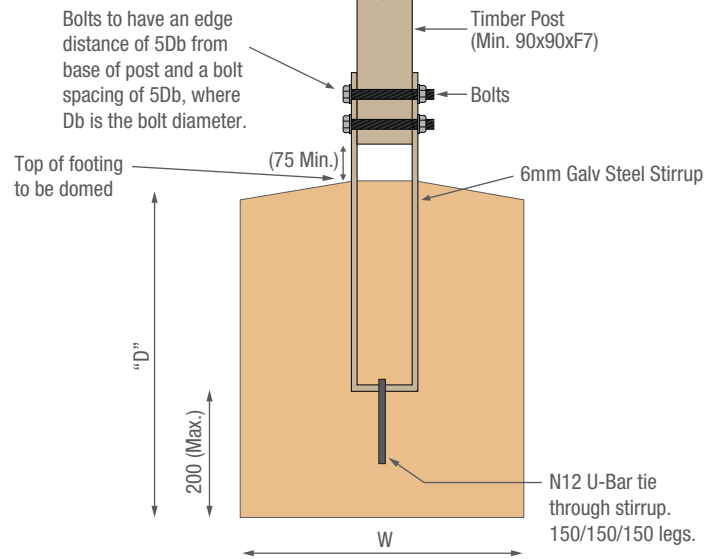
6.3 Post to Ground Connection

Use the Uplift on Post from 6.1 (kN) to select the Post to Ground connection and the footing. The hold down capacity of the footing must exceed the uplift on the Post.

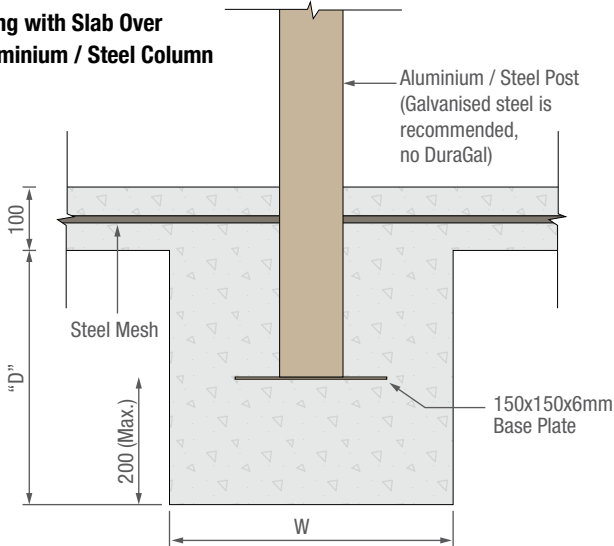
In Ground Footing – Aluminium / Steel Column



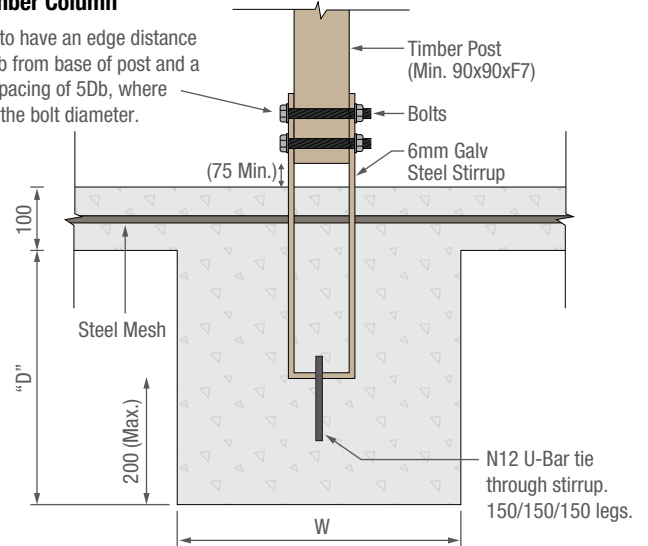
In Ground Footing – Timber Column



Footing with Slab Over – Aluminium / Steel Column



Footing with Slab Over – Timber Column



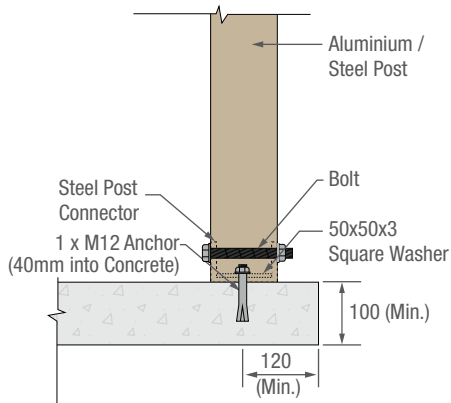
STEP 6.3: Post to Slab Connection

Connection Type Enter at 6.3

6.3 Post to Ground Connection (cont'd)

On Slab Footing

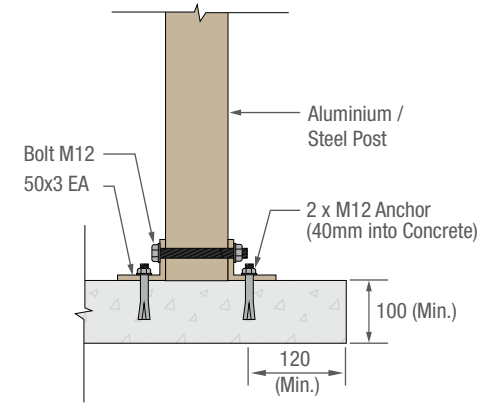
- Aluminium / Steel Column on Slab



Hold Down Capacity = 4.5 kN

On Slab Footing

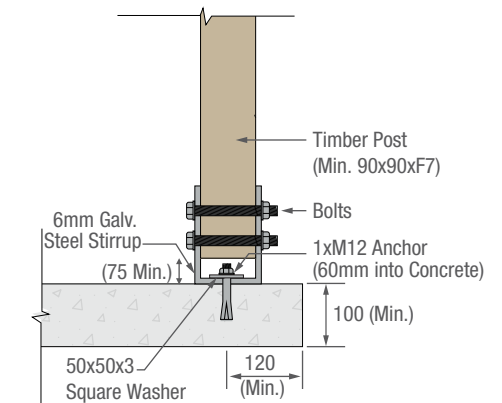
- Aluminium / Steel Column on Slab



Hold Down Capacity = 5.5 kN

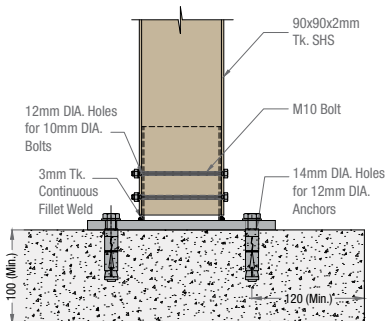
On Slab Footing

- Timber Column on Slab



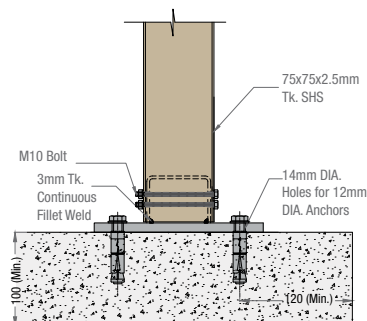
Hold Down Capacity = 4.5 kN

On Slab Footing - Base Plate Option 1



Hold Down Capacity = 5.5 kN
2x M10 bolts can be replaced with 4x14g Tekes placed on the same locations.

On Slab Footing - Base Plate Option 2



Hold Down Capacity = 5.5 kN
2x M10 bolts can be replaced with 4x14g Tekes placed on the same locations.

Notes:

Hold down capacity applies to piers with an undercut into cohesive clay soils. Use post footings for sandy sites.
For footings with depth (D) greater than 500, reinforce the footing with 4-N16 vertical bars tied with R6 spiral, 300 helical pitch.
Concrete slab must be a minimum of 100mm thick, 20MPa concrete reinforced with SL72 mesh and must extend over the full area covered by the Nordeck®.
Mechanical anchors into concrete to be Ramset dynabolt plus or Hilti HST-3.

6.3 Post to Ground Connection (cont'd)

IN GROUND FOOTING (CLAY SOIL) W = 450mm DIA.		
Hold Down Capacity (kN)	Footing Depth (mm)	Bolts
1.6	500	2-M12/4.6s
4.3	750	2-M12/4.6s
7.1	1000	2-M12/4.6s
9.8	1250	2-M12/4.6s
12.5	1500	2-M12/4.6s
15.3	1750	2-M16/4.6s
18.0	2000	2-M16/4.6s

FOOTING WITH SLAB OVER (CLAY SOIL) W = 450mm DIA.		
Hold Down Capacity (kN)	Footing Depth (mm)	Bolts
10.4	500	2-M12/4.6s
13.1	750	2-M12/4.6s
15.9	1000	2-M16/4.6s
18.6	1250	2-M16/4.6s
21.3	1500	2-M20/4.6s
24.1	1750	2-M20/4.6s
26.2	2000	2-M20/4.6s

POST FOOTINGS (SANDY SITES)							
Hold Down Capacity (kN)	Width "W" & Depth "D" (mm)						
	500	550	600	650	700	750	800
5	700 x 700 (W) x 500 (D)	650 x 650 (W) x 550 (D)	650 x 650 (W) x 600 (D)	600 x 600 (W) x 650 (D)	600 x 600 (W) x 700 (D)	600 x 600 (W) x 750 (D)	550 x 550 (W) x 800 (D)
10	1000 x 1000 (W) x 500 (D)	950 x 950 (W) x 550 (D)	900 x 900 (W) x 600 (D)	850 x 850 (W) x 650 (D)	850 x 850 (W) x 700 (D)	800 x 800 (W) x 750 (D)	800 x 800 (W) x 800 (D)
15	1200 x 1200 (W) x 500 (D)	1150 x 1150 (W) x 550 (D)	1100 x 1100 (W) x 600 (D)	1050 x 1050 (W) x 650 (D)	1000 x 1000 (W) x 700 (D)	1000 x 1000 (W) x 750 (D)	950 x 950 (W) x 800 (D)
20	1400 x 1400 (W) x 500 (D)	1300 x 1300 (W) x 550 (D)	1250 x 1250 (W) x 600 (D)	1200 x 1200 (W) x 650 (D)	1200 x 1200 (W) x 700 (D)	1150 x 1150 (W) x 750 (D)	1100 x 1100 (W) x 800 (D)
25	1550 x 1550 (W) x 500 (D)	1500 x 1500 (W) x 550 (D)	1400 x 1400 (W) x 600 (D)	1350 x 1350 (W) x 650 (D)	1300 x 1300 (W) x 700 (D)	1250 x 1250 (W) x 750 (D)	1250 x 1250 (W) x 800 (D)
30	1700 x 1700 (W) x 500 (D)	1600 x 1600 (W) x 550 (D)	1550 x 1550 (W) x 600 (D)	1500 x 1500 (W) x 650 (D)	1450 x 1450 (W) x 700 (D)	1400 x 1400 (W) x 750 (D)	1350 x 1350 (W) x 800 (D)

Note: Reinforcement for pad footings: N12-200 CRS (U-bars), top & bottom, each way, 35mm cover.

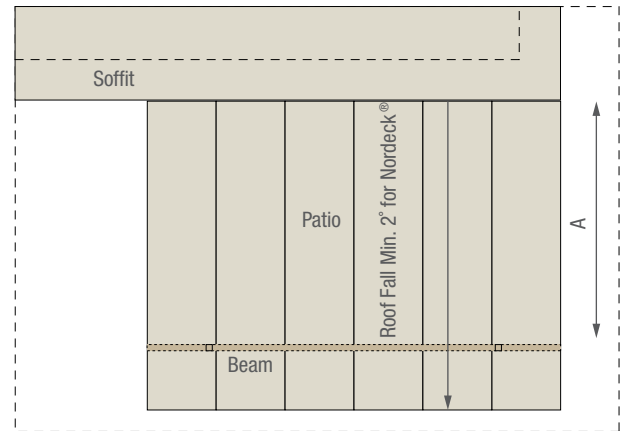
STEP 6.3: Post to Slab Connection
Connection Type Enter at 6.3

7.0 Patio to House Connection

Select the type of patio to house connection based on the Uplift Force (kN/m).

Notes:

1. Refer to Section 4.2 Uplift Load on Beam Table. For Load Width 0.5A, select the uplift (kN/m) from the table. This value is the Uplift Load on the house.
2. Select a suitable house connection for the required kN/m uplift.
3. The uplift capacity of the house fascia connections apply to the Nordeck® & Receiver Channel connection only. The Load Capacity and suitability of the members and connections below the rafter are to be assessed and strengthened if required.
4. It is the responsibility of the builders and engineers to determine the capacity of the existing structures.



7.1 For Metal Fascias

Rafter Connection Spacing (mm)	UPLIFT CAPACITY OF RECEIVER CHANNEL TO RAFTER CONNECTION (kN/m)	
	Unstrengthened Rafter	Strengthened Rafter
600	3	6
900	2	4
1200	1.5	3

7.2 For Timber Fascias

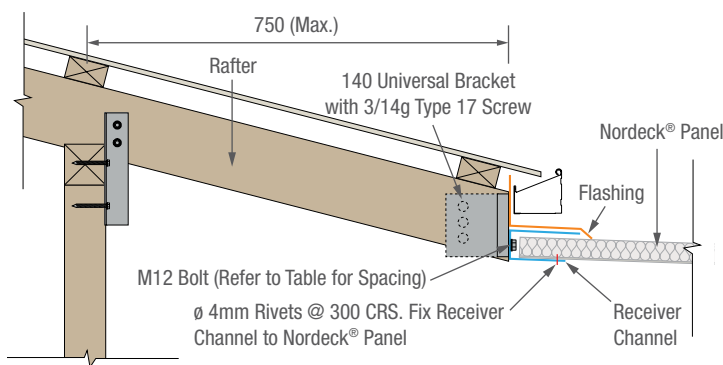
Notes:

1. Refer to AS 1684 - Timber Framing Code for attaching pergola or carport to house.
2. Connect Receiver Channel as per carport/pergola as shown in that publication.
3. Alternatively, connect as for Metal Fascias above.

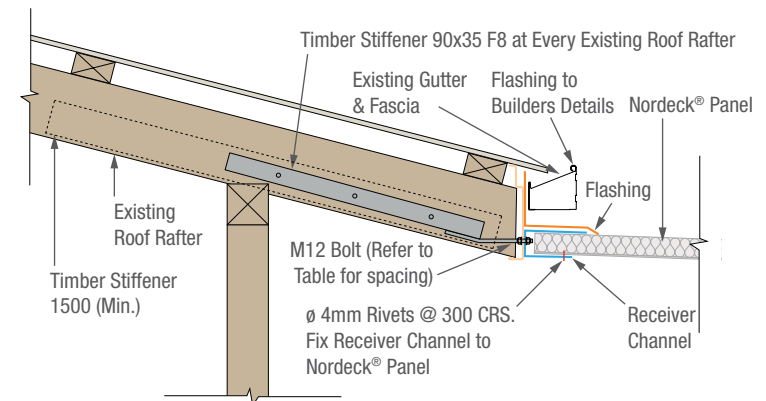
Rafter Strengthening

Fix timber stiffener 90x35 F8 x 1500 long to rafter with 75 long x No.14 Type 17 batten screws at 300 CRS (not shown here).

Unstrengthened Rafter with Universal Bracket

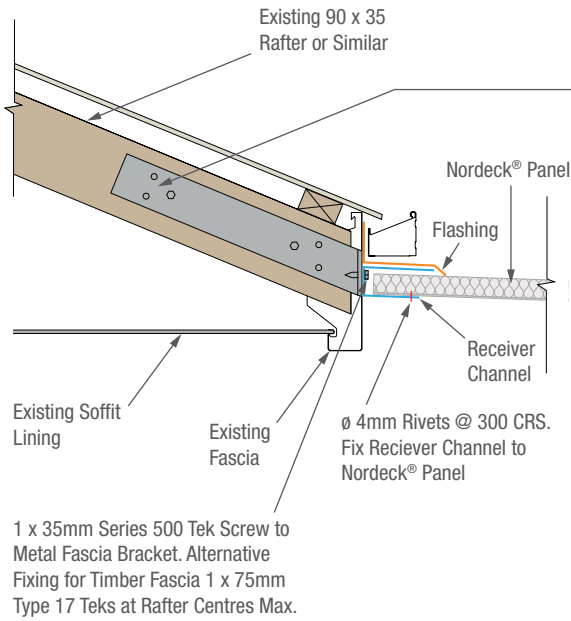


Strengthened Rafter with Stiffener

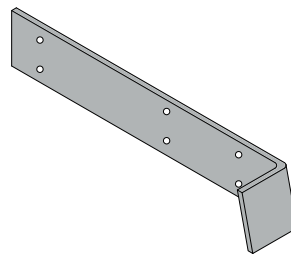


STEP 7: Patio to House Connection
Connection Type Enter at 7

Strengthened Rafter with Rafter Brackets

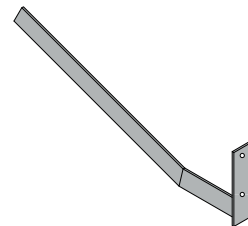


NOTE: Minimum edge distance requirements on screws and bolts must be followed for all brackets.



Internal Rafter Bracket (Left and Right)
50 x 5mm Mild Steel
MAX. LOAD 4.0kN

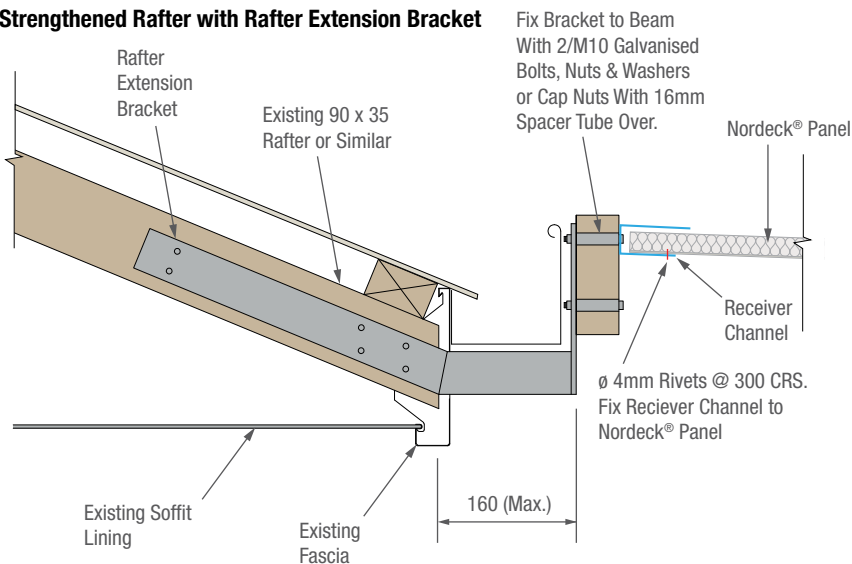
NOTE: Brackets to be spaced at max. 1200 CRS.



Rafter Extension Bracket
65 x 8mm Mild Steel
MAX. LOAD 5.0kN

NOTE: Brackets to be spaced at max. 1200 CRS.

Strengthened Rafter with Rafter Extension Bracket

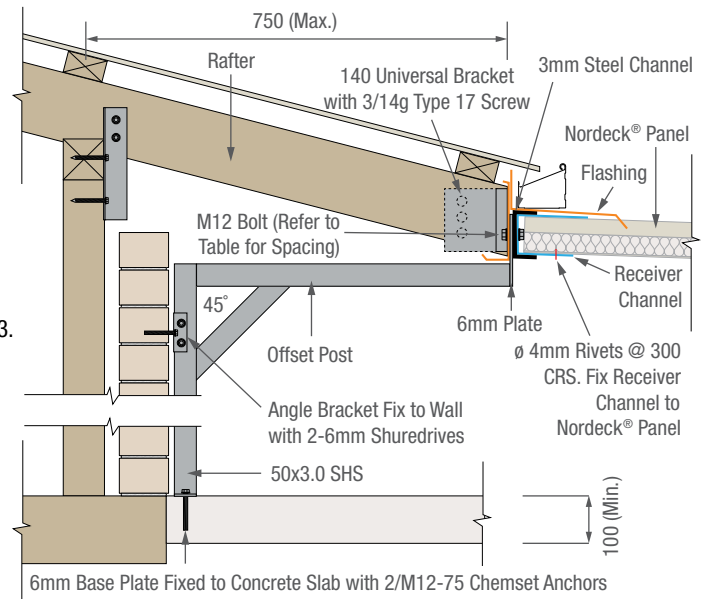


7.3 Offset Post for Application with Higher Uplift

Offset Vertical Column Spacing (mm)	Uplift Capacity of Receiver Channel Connection (kN/m)
3000	1.3
2400	1.6
1800	2.2

Notes:

1. Alternative is to install vertical 50x3.0 SHS Post directly under the 3.0mm Steel Channel with similar fixings.
2. Where the conditions in Section 7.1 are met, the Uplift Capacity (kN/m) from Section 7.1 may be added to the applicable Uplift Capacity (kN/m) of Section 7.3.

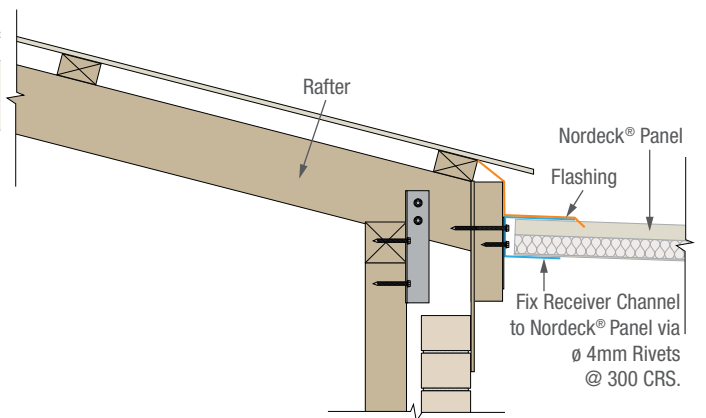


7.4 Removed Fascia & Soffit

Rafter Spacing (mm)	Uplift Capacity of Receiver Channel to Rafter Connection (kN/m)
600	6
900	4
1200	3

Notes:

1. Cut back rafter tails as shown.
2. Fix new fascia to each rafter tail with 2-8 gauge screws.
3. Fix Nordeck® Receiver Channel to fascia with No.14 Type 17 screws at 300 CRS.

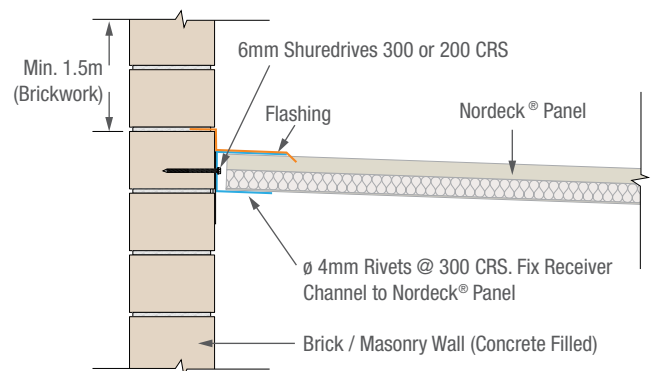


7.5 Brick / Masonry Wall

Shuredrives Spacing (mm)	Uplift Capacity of Receiver Channel to Wall Connection (kN/m)
300	2.5
200	3.5

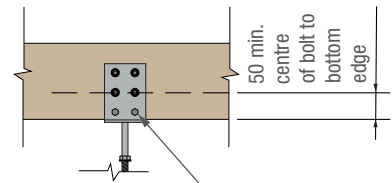
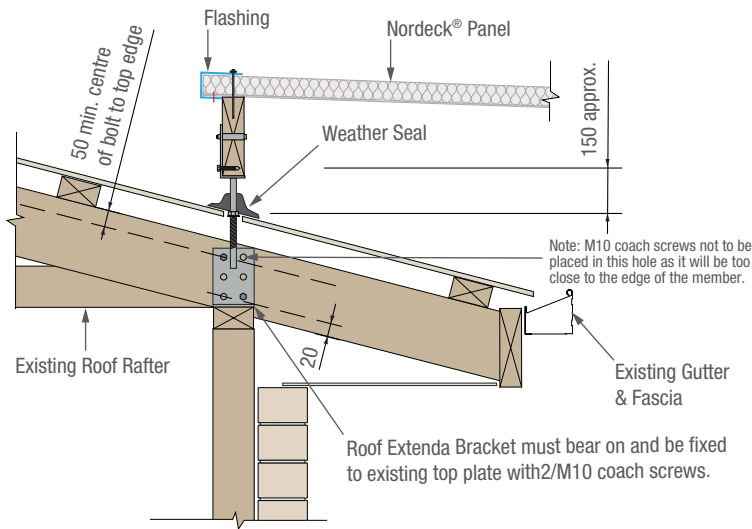
Notes:

Do not attach brickwork with less than 1.5m of brickwork over unless brickwork is positively tied down with anchor rods. Otherwise separate tie-down structure is required.

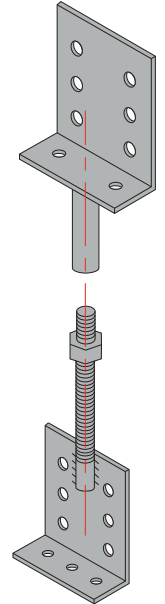


7.6 Rafter Bracket for Fly-Over - Roof Extenda

Roof Extenda Bracket MkII & S-Series



Use top holes for bolts in this case and place 2/M10 coach screws in bottom to prevent twisting of beam.



MkII Roof Extenda Bracket

Note:

Prior to erecting a pergola or carport using the Roof Extenda Brackets check if a building approval from the Local Council or Shire is required as regulations vary from area to area.

Remove roofing tiles or lift roof sheets to achieve an opening to fit the Roof Extenda.

Bolt angle bracket with the threaded rod to the selected rafter with 2-M12 bolts. Provision has been made to bolt the angle section to the existing wall plate to eliminate any uplift.

Replace roof tiles or roof sheet cutting the hole to allow the threaded rod to penetrate the roof.

The Weather Seal is fitted to the top bracket, top bracket is then wound down to the desired height and the lock nut tightened.

Mark the position of the Weather Seal on the roofing.

Slide the Weather Seal up to apply clear neutral cure silicone to the area marked.

Press the Weather Seal into position and finish with a bead of silicone to the edges of the Weather Seal to complete the fitting.

7.7 Nordeck® Fastener Details

Minimum screw length for Nordeck® fixings to beam - all screws class 4		
Panel Thickness (mm)	Timber Beam Type 17 14-10 with Multiseal. Timber joint to be joint group J3 or better.	Steel Beam Metal Tek 14-14 with Multiseal.
50	125mm	125mm
75	150mm	150mm
100	175mm	175mm
125	200mm	205mm
150	240mm	230mm
200	300mm	300mm

Fixing recommendations

Nordeck® roofing side laps should be laid away from the prevailing wind and sit neatly on the preceding roof sheet.

1. Non-Cyclonic Timber Fixings: 14g-10 Type 17 Buildex or Ideal screws with Multiseal washers to every rib. Minimum embedment 35mm.

2. Cyclonic Timber Fixings at each rib and pan, minimum embedment 40mm:

- a) For 50-100mm thick panels fixing with 14g-10 Type 17 Buildex screws with Multiseal washers into every rib and pan.
- b) For 125-200mm thick panels fixing with 14g-10 Type 17 Ideal Fasteners screws into every rib and pan, with Square-Lok (BX) washers on ribs and Multiseal washers in pans.

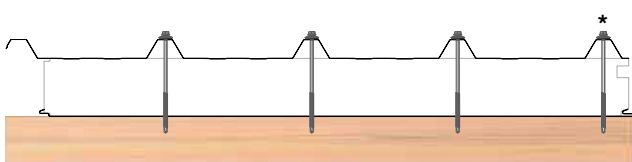
3. Non-Cyclonic Steel Fixings:

14g-14 Buildex or Ideal screws into minimum 1.5mm BMT G450 steel. Fixings to every rib using Multiseal washers.

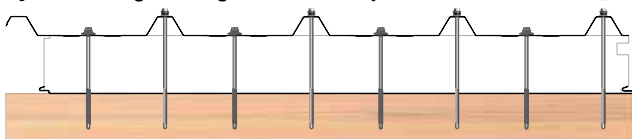
4. Cyclonic Steel Fixings:

- a) For 50mm-100mm thick panels fixing with 14g-14 Buildex screws into minimum 1.5mm BMT G450 steel. Fixings to be every rib and pan using Multiseal washers.
- b) For 125mm-200mm thick panels fixing with 14g-14 Ideal Fastener screws into minimum 1.9mm BMT G450 steel. Fixings to be every rib and pan, using Square-Lok (BX) washers on ribs and Multiseal washers in pans.

Non-cyclonic fixing - through each rib



Cyclonic fixing - through each rib and pan



* Fixing to go through adjacent panel's side lap.

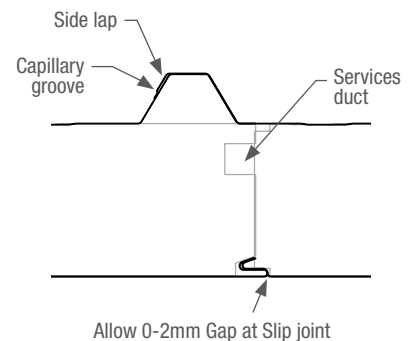
Screw with Multiseal



Screw with Square-Lok



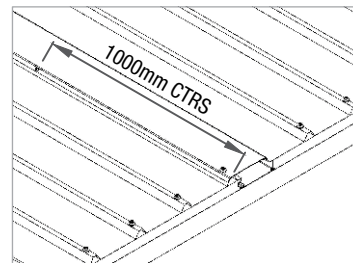
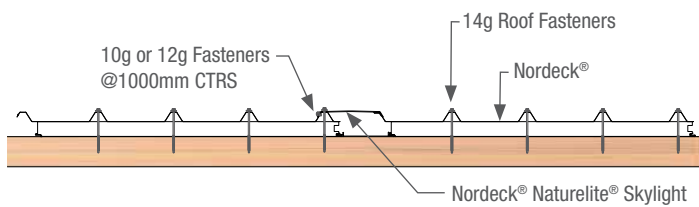
Lapping



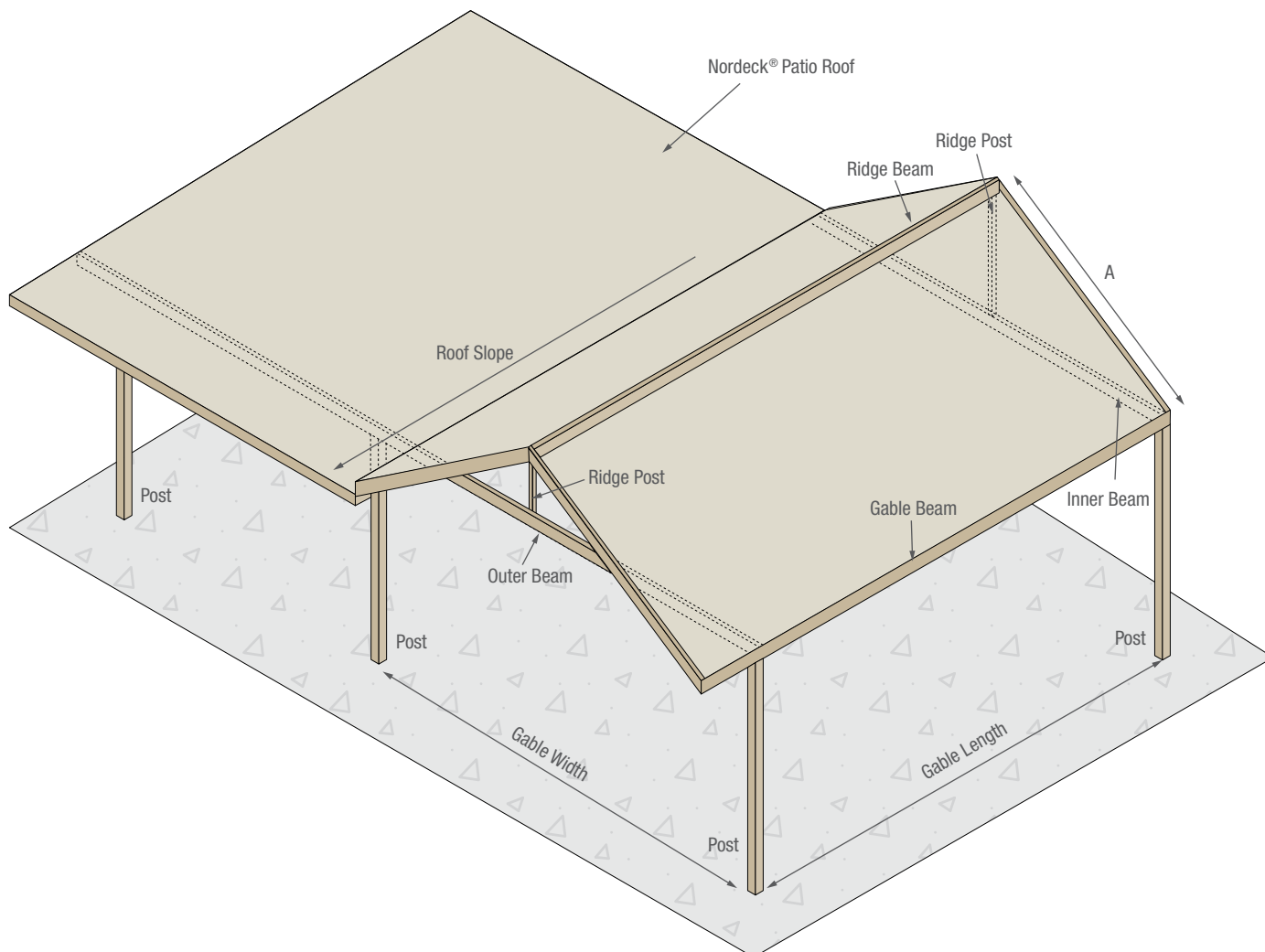
7.7 Nordeck® Fastener Details Cont...

Fixing Arrangement for Various Wind Loading Conditions	
Wind Uplift load on beam	Fixing Arrangement required
up to 7.2 kN/m (for non-cyclonic installations only) (up to 5.9 kN/m for Firmlok F10011)	a) One screw per panel rib
up to 14.4 kN/m (for both non-cyclonic and cyclonic installations as relevant)	Screws as per (a) above, plus one screw per pan (between ribs)
up to 21.6 kN/m (for both non-cyclonic and cyclonic installations as relevant)	Screws as per (a) above, plus two screws per pan (between ribs)

Nordeck® Naturelite® skylight



8.0 Gable Structures



8.1 Thickness and Fixings

Selected as for the rest of the patio (refer to Step 3).

8.2 Select Outer Beam

This will normally be the same beam as the outer beam in the low pitch part of the patio.

8.3 Select Gable Beams

Load Width on Gable = 0.5 A metres. Use the same procedure as set out on Step 4 & 5 to select a suitable beam size.

STEP 8: Gable Span Formula								
Load Width on Gable = 0.5 x A (m)								
Load on Ridge Beam (kN/m) = 2 x Load on Gable Beam (kN/m)								
0.5	x	A (m)	Equals	(0.5xA)	x	2	Equals	Load on Ridge Beam (kN/m) Enter at Step 8
0.5	x		=		x	2	=	

8.4 Check the Capacity of the Ridge Beam

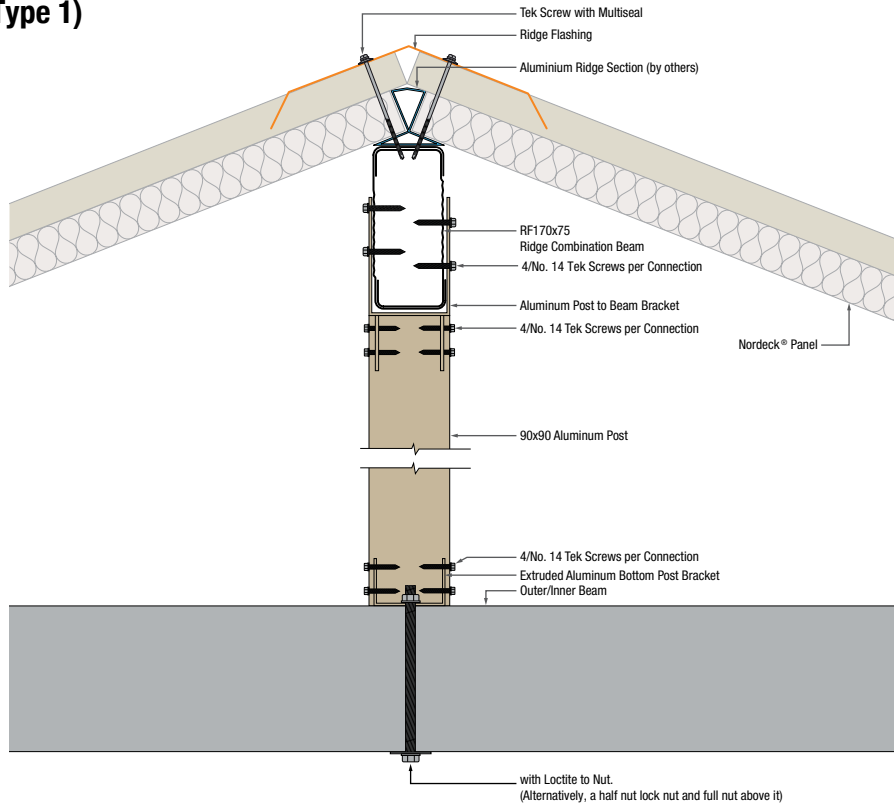
8.4.1 Load on Ridge Beam

Load on Ridge Beam (kN/m) = 2 x load on Gable Beam (kN/m).

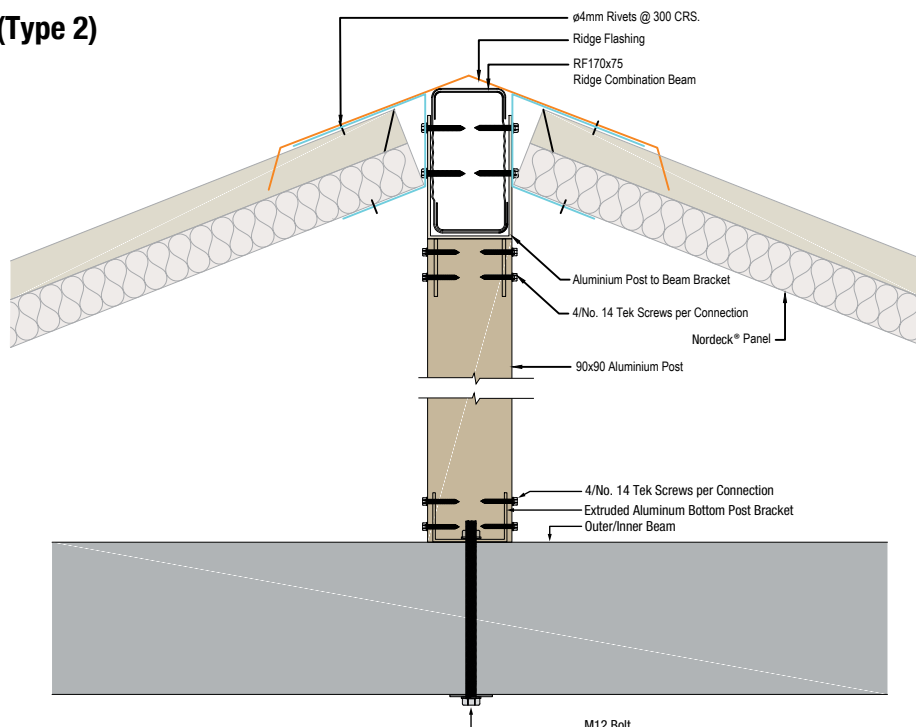
8.4.2 Check Capacity

Check that the capacity (kN/m) of the Ridge Beam has sufficient capacity for the particular conditions by referring to the selection table in Section 5.0.

Ridge Beam Detail (Type 1)

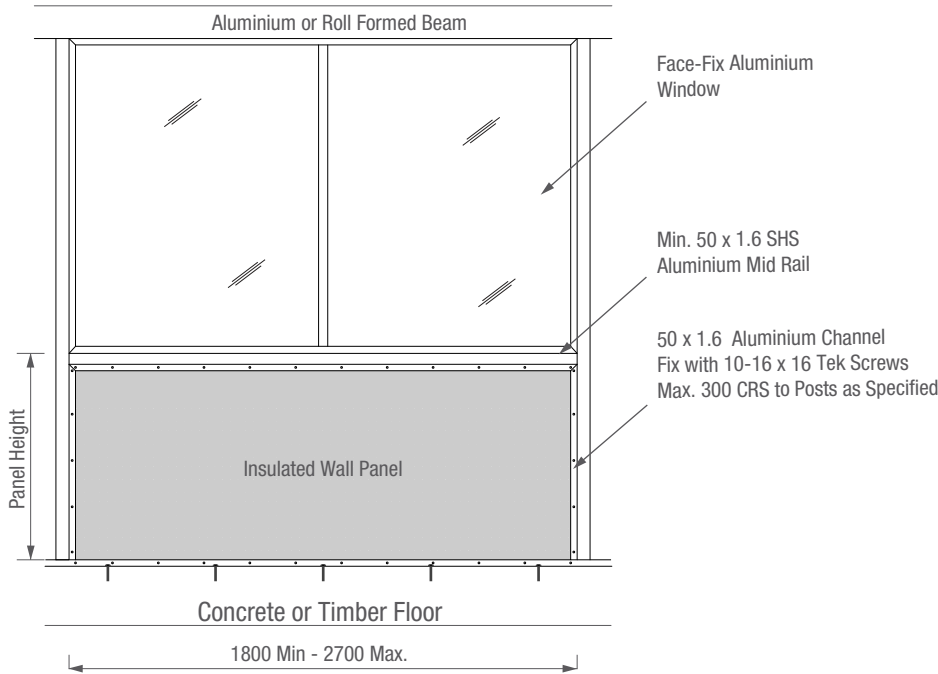


Ridge Beam Detail (Type 2)



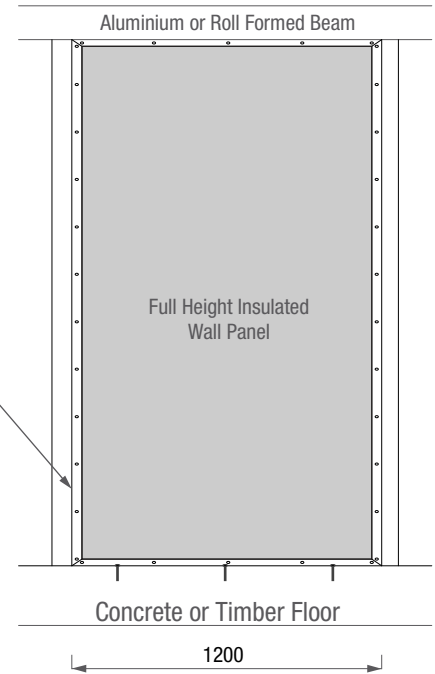
9.0 Enclosure Wall Panel

OPTION 1



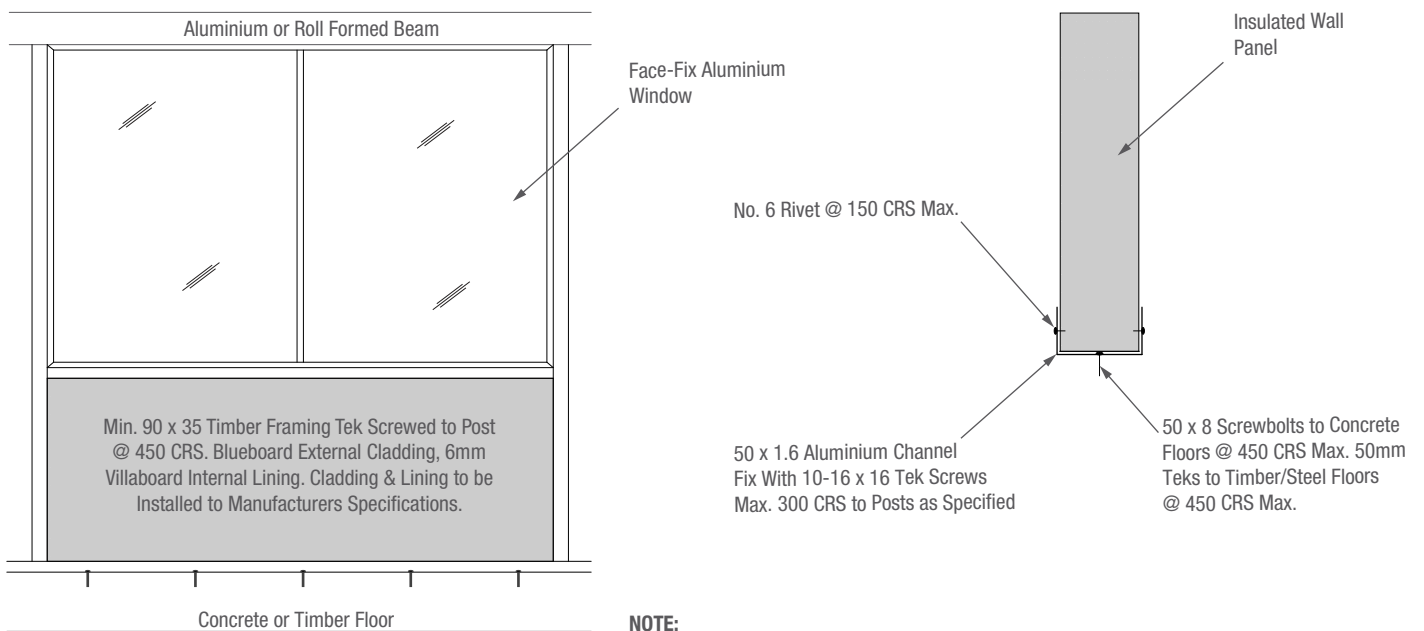
Wall Height	2400		2700		3000	
Panel Height	900	1200	900	1200	900	1200
Capacity per Post - kN	1.8	2.3	1.5	1.8	1.2	1.5
Min. Post Size - Steel	50 x 2.5 SHS		50 x 2.5 SHS		50 x 2.5 SHS	

OPTION 2



Wall Height	2400	2700	3000
Capacity - kN	2.7	2.4	2.2
Min. Post Size	50 x 1.6 Alum	60 x 2.0 Alum	60 x 2.0 Alum

OPTION 3



Wall Height	2400		2700		3000	
Panel Height	900	1200	900	1200	900	1200
Capacity per Post - kN	1.5	1.9	1.2	1.5	1.0	1.2
Min. Post Size - Alum.	90 x 2.0		90 x 2.0		90 x 2.0	

NOTE:

Max Wall Height for 50 x 50 x 1.6 Aluminium Posts = 2400

Max Wall Height for 60 x 60 x 2.0 Aluminium Posts = 3000

Flashing & Fixtures

Flashing Details

For residential housing and commercial applications, other detail drawings are available. Please contact Norfoam® in your state to request a copy.

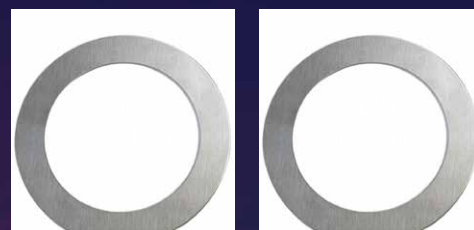
Suits 50mm			Suits 75-200mm			Suits 50-200mm
Fascia Gutter End Flashing	Side Barge Flashing	Top Barge Flashing	Fascia Gutter End Flashing	Side Barge Flashing	Top Barge Flashing	1.0mm Receiver Channel & 0.55mm Apron

UltraSlim Extra Bright 9W LED Downlight Kit

Nordeck®'s low heat UltraSlim 9W LED Downlight has been custom designed for Norfoam® insulated roof products and outdoor use in patios and pergola applications. Our 9W LED Downlight provides an energy efficient lighting solution with up to 50,000 hours of operational use and covered by a 3 year manufacturer's return to base warranty.

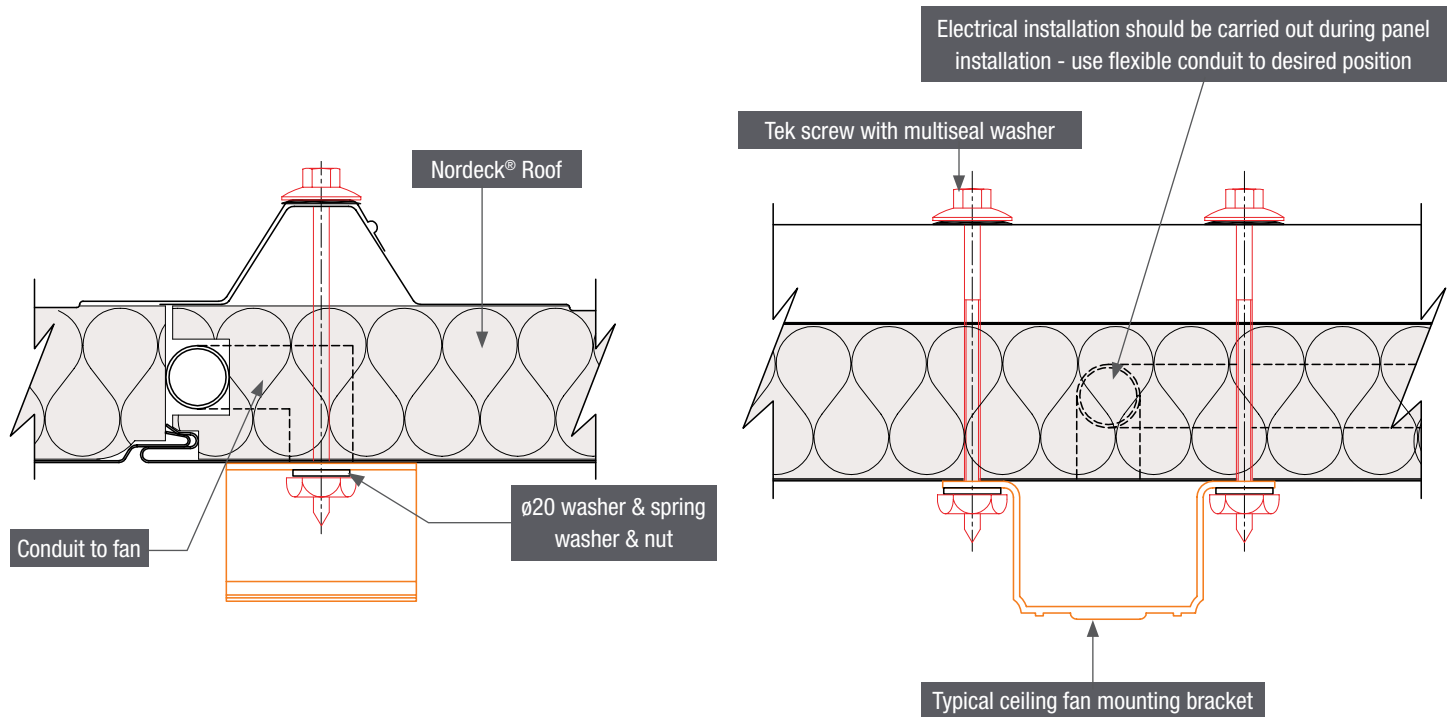
KIT INCLUDES

- 1 x UltraSlim Bright 9W Downlight
- 2 x Flush Trims (1 x White & 1 x Silver)
- 1 x 12m light extender lead
- AS Compliant for Nordeck®



Ceiling Fans Bracket Kit

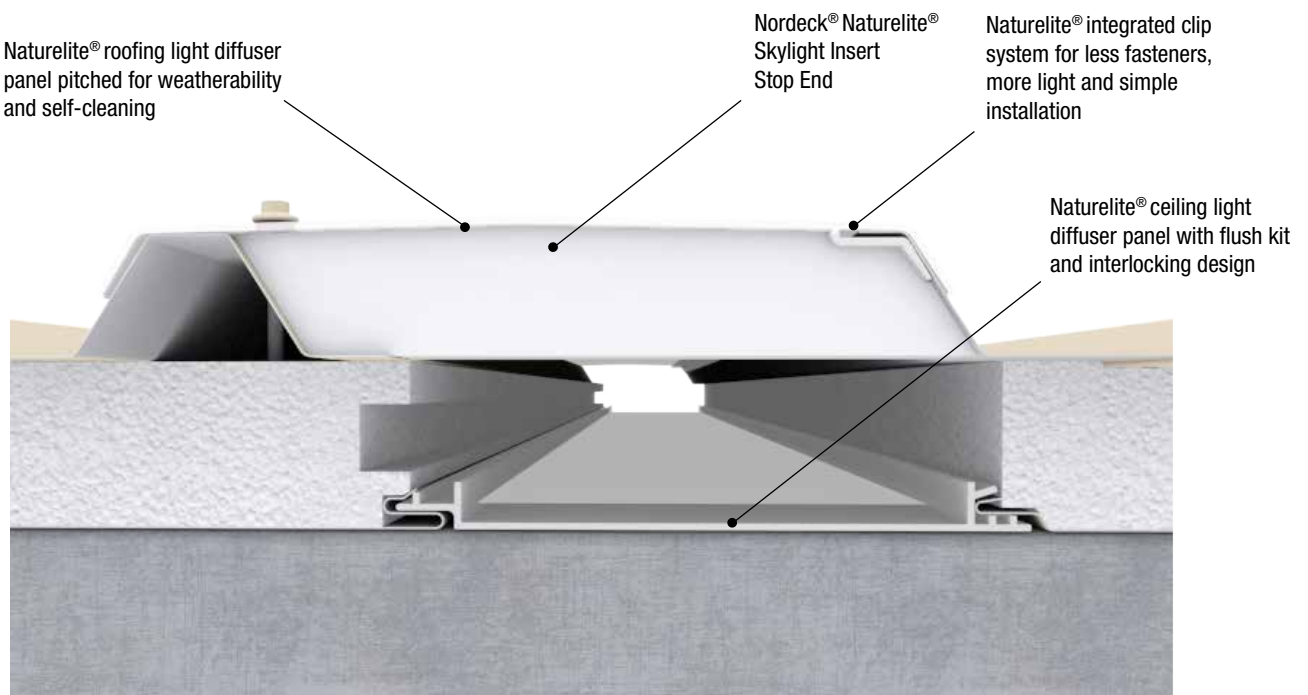
Where lights or ceiling fans are required, electrical cabling should be pre-wired through the fascia, sheathed inside flexible conduit inside the service ducts on the female side of the panel. Locate fans and lights away from slip joint by drilling horizontally through the foam and then using the appropriate diameter metal-holesaw, drill through the underside of the steel sheet to required depth. Fans should be located centrally below a rib as through fixing is required for bracket.



Nordeck® Naturelite® Skylight

Nordeck®'s Naturelite® skylight system is designed for exclusive use with Nordeck® insulated patio roofing to increase natural light into outdoor living areas. The Naturelite® skylight roof and ceiling panels are developed to the Nordeck®'s roof and ceiling profile specification. Made from high impact and UV stabilized material, the skylight is proven for use with outdoor patio applications in Australia. Naturelite® skylights deliver a smart and modern lighting solution that is easy to install with brighter results.

Components

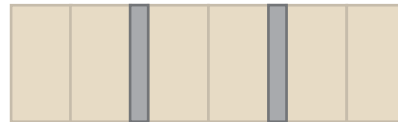


Design Notes

- Nordeck® steel roof panels are serviceable up to 140kg/m² of live load however, Naturelite® skylight panels are non-trafficable and stepping on or near skylight panels must be avoided.
- Naturelite® skylight panels should be used in open outdoor shade applications in non-cyclonic regions only. Skylights are not for house or commercial roofing purposes.
- Installation of Naturelite® skylights should be between at least one Nordeck® panel on either side.
- Nordeck® maximum spans may need to be reduced to compensate for the addition of a Naturelite® skylight. Refer span table notes.

Panel Configuration Example

Two Nordeck® panels on either side



One Nordeck® panel on either side



Transport Safety Guidelines

Packing & Delivery

Packing for Shipment

Nordeck® sheets are packed to a maximum pack height of 1.2m with the number of panels per pack dependant on panel thickness, length and overall pack weight. Nordeck® panels are manufactured with a protective film applied to the ceiling skin. Nordeck® panels can be marked externally on the insulated core with the panel number and/or length, on request.

Delivery to Site

Panel packs should be secured using cargo straps spaced approximately every 2m with 600mm plastic cargo angles under the straps (refer to Figure 1a). Long 600mm angles must be placed on top and bottom of panel pack to protect from straps. Do not overtighten straps, no depression in panel should be seen, back off on strap tension, panel skin should be flat (refer to Figure 1b). Unloading remains the client's responsibility. For lifting panels greater than 8m in length, use of a spreader bar is recommended (refer to Figures 1c & d). Refer to Figures 1e & 1f for recommended steps to unload panels of less than and greater than 8m in length. Panels should always be kept dry and if placed on site, stored off the ground, slightly inclined, allowing adequate drainage and ventilation of the panel pack.

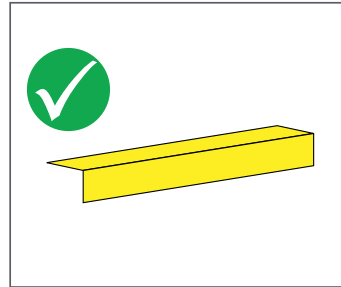


Figure 1a

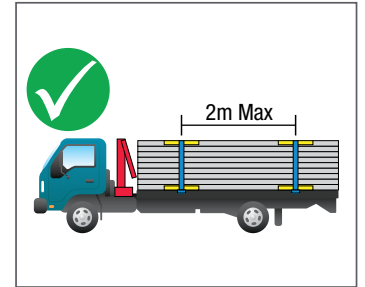


Figure 1b

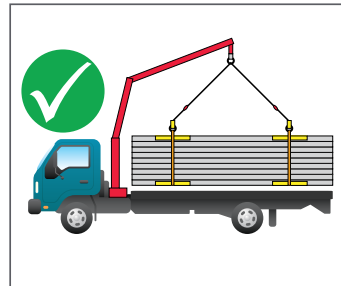


Figure 1c

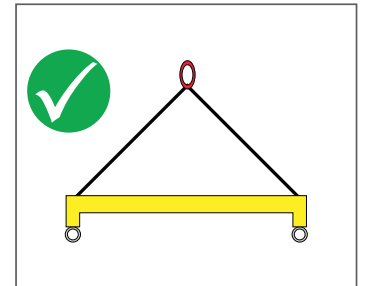


Figure 1d

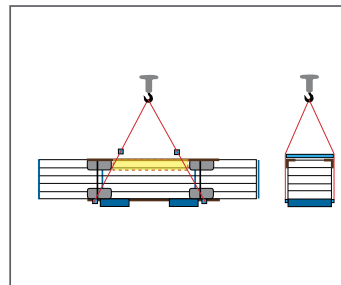


Figure 1e

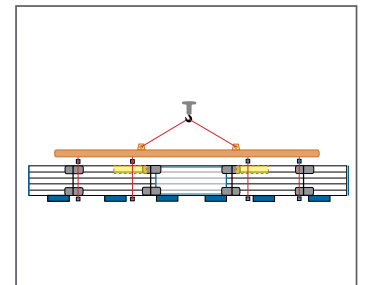


Figure 1f

Transport Safety Guidelines

Customer Pick Ups

This Transport Safety Guide provides information on state regulations and site requirements for transport of products from Norfoam® sites. This guide applies for customer collected goods that are transported by road and restrained to the minimum standard designed to meet the Australian Load Restraint Performance Standards.

All pick ups are to be booked with our Dispatch team by phone on 02 9609 0802.

1. Site Requirements

- Norfoam® sites will require you to wear PPE whilst on site. Each location will have specific requirements that must be followed. PPE may be loaned for the duration of picking up goods and must be returned before leaving site.
- Norfoam® personnel have the right to refuse to load inappropriate vehicles or load combinations.
- Customers must stay with their vehicle at all times and take direction from loading staff.
- Customers unable to restrain products to their vehicles from the ground must use appropriate available height safety equipment to safely conduct the task.
- Customers must observe all site speed limits, traffic signs and staff directions.
- Alternative arrangements for delivery may be arranged and may incur a fee if the vehicle or equipment is inappropriate for the load.
- In the event of an emergency or evacuation customers should stay within the customer pick up area where safe to do so and await instructions from Norfoam® staff.

2. Chain Of Responsibility (CoR)

Under the CHAIN OF RESPONSIBILITY laws, all parties who have control or influence over the transport task are deemed responsible for complying with and for breaches of the laws. For more information refer to the National Transport Commission website at www.ntc.gov.au or contact your local state Road and Transport Authority.

3. Load Requirements

Roof Rack Capacities

Vehicles must not be overloaded.

Unless the driver has written verification of the rack and vehicle limits, the safe loading limits are:

- 40 kg for sedans, vans and wagons
- 100 kg for utes with trade racks

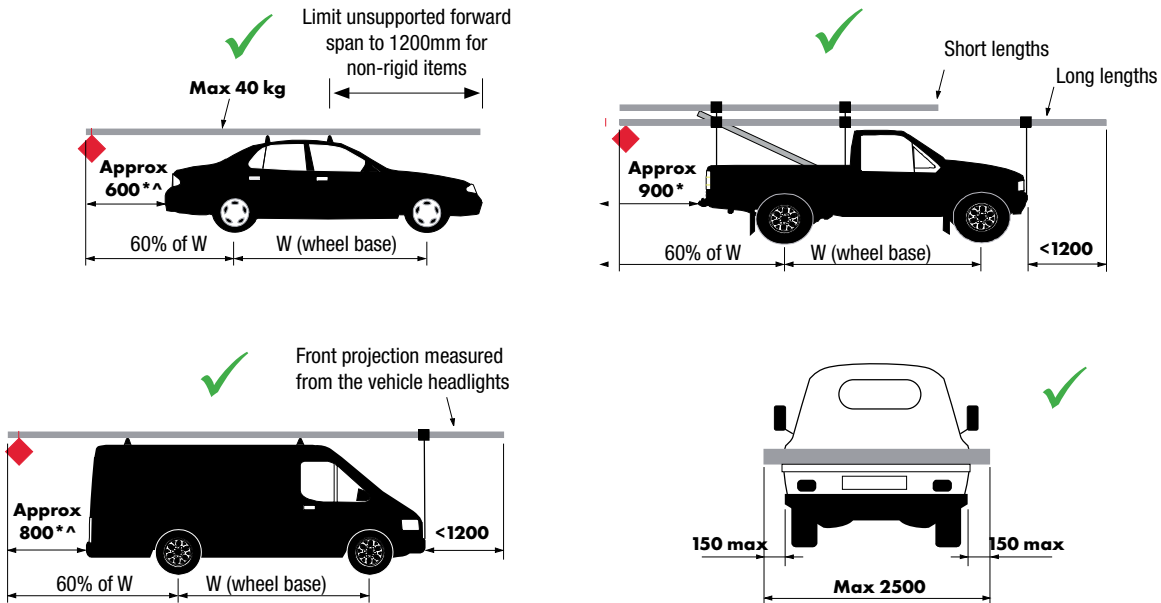
Written verification of acceptable higher weights includes:

- load rated stickers on roof racks,
- paperwork received with the roof racks,
- information in the vehicle handbook,
- information from the supplier website,
- engineering certificates.

Overhang Requirements

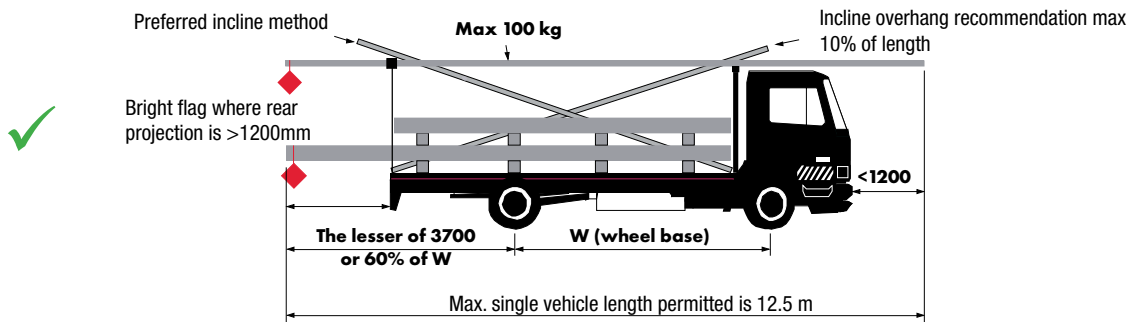
- The driver's vision must not be obstructed. Projections/overhangs that are deemed dangerous are not acceptable even if within the limits of the diagrams in this brochure.
- For day time travel, a minimum 300mm square bright flag must be used on any overhang that is not easily seen.

Rigid Product Loading - All States

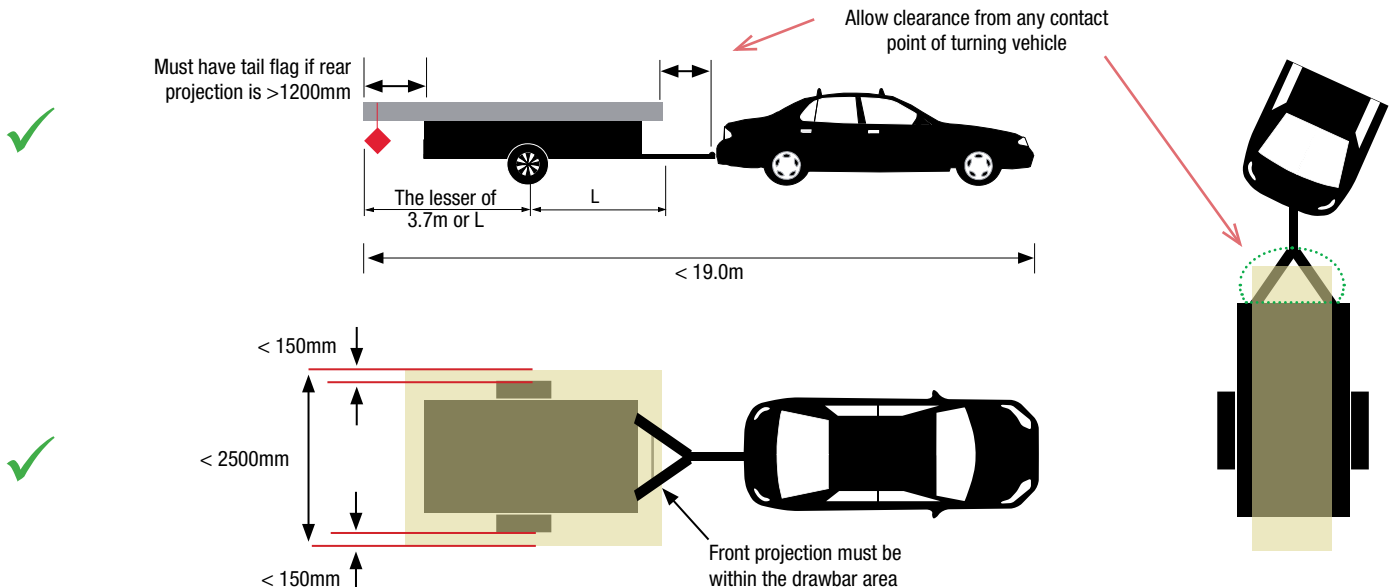


* Guide Only - Not governing dimensions. Check vehicle wheel base to determine permitted legal rear overhang.

^ Applicable in WA only, maximum length of product protruding from vehicle is 1200mm from the end of the vehicle and at no time must the rear projection beyond the vehicle's rear axle exceed 60% of the wheel base.



QLD Trailer Product Loading



Installation

Required Tools & Equipment

Personal Protective Equipment

- Long sleeves & pants
- Cut resistance level 5 gloves
- Eye protection
- Hearing Protection
- Enclosed footwear

General Tools

- Saw Horse Stools (Padded)
- Rivet gun
- Multi-purpose step ladders
- Socket set (metric) for post bolts
- RH & LH Hand Tin snips
- Spirit Level
- Chalk Line
- Roof Screw Gun with Hex Head Adapters 5/32" R 14g Tek Adaptor
- Nordeck® Turn-Up/Down Tool (See Norfoam®)
- Plastic Paint Scraper
- Measuring Tape
- Towels or blankets to cover patio beams
- Shears to remove overlap (first sheet only)

Components

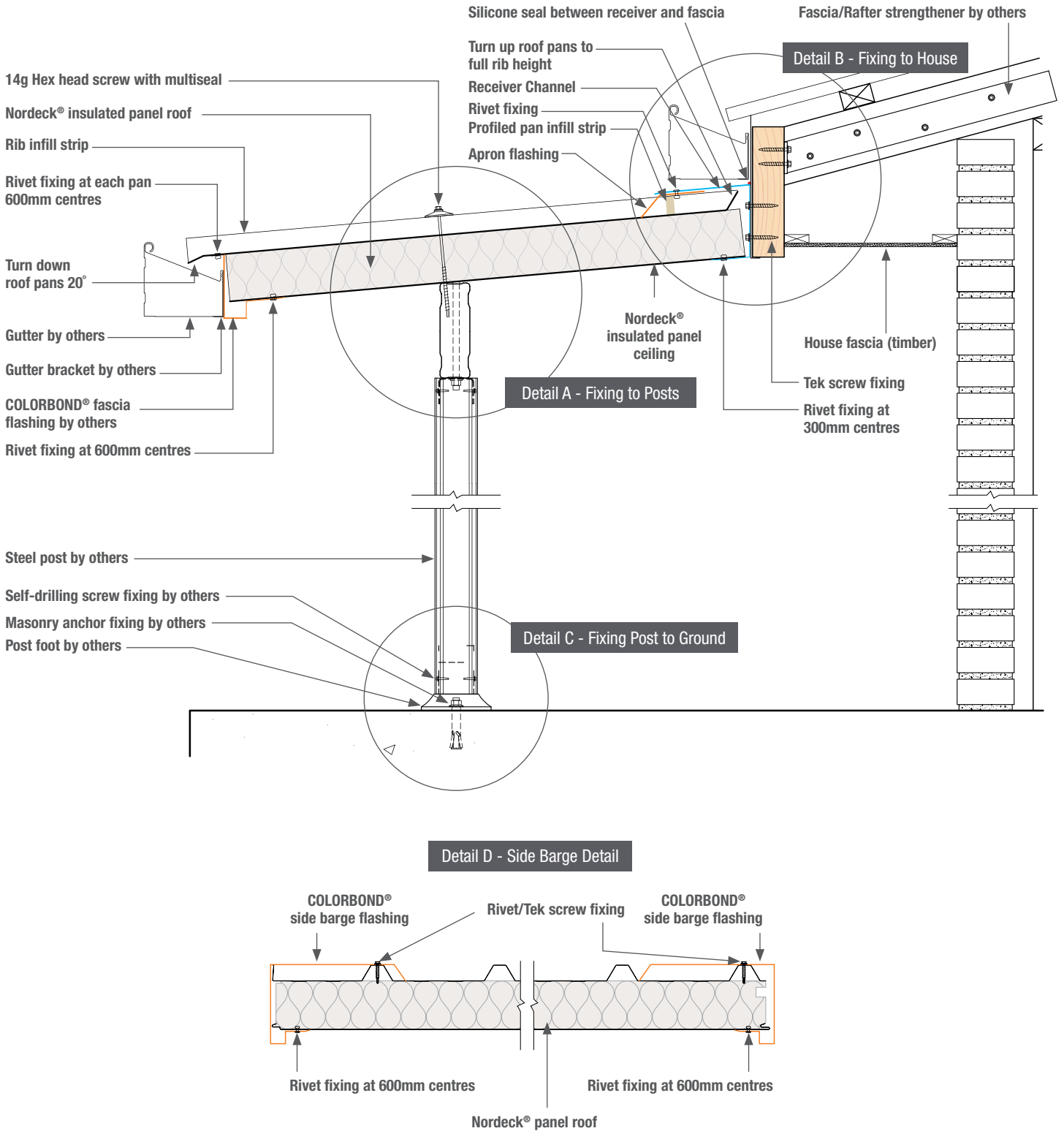
- Patio Structure
- Nordeck® Roofing Panel
- Receiver Channel (for attached patios)
- Barge and Fascia Gutter Flashings
- 3.2mm diameter blind rivet (sealed)
- 14g class 4 metal/timber roof screws with Multiseal / Square-Lok
- Profile vermin protection and EPS-FR rib infill strip

Clean Up

- Broom for cleaning swarf from roof
- Blower/Vacuum

Patio Construction Overview

The below overview is conceptual only.



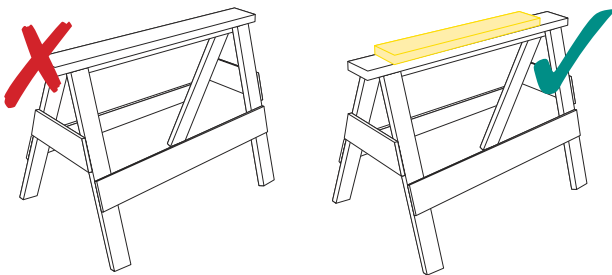
Structure Preparation

Fix Receiver Channel to the house fascia using appropriate fasteners. Apply to the Receiver Channel a thick continuous bead of silicone to the top of the back face of the Receiver Channel for protection against water ingress retained behind the Receiver or to the patio floor below.

Install patio structure, including posts and beams to manufacturer's specifications, ensuring the frame is square, checking diagonals.

Nordeck® Installation Instructions

This example shows a typical installation to an existing house timber fascia.

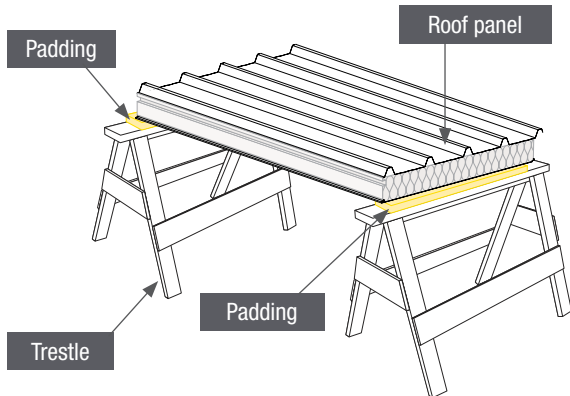


Handy Tip

Prepare your carpenter's trestles (or similar work platform) by taping soft material or foam to the top of the trestles.

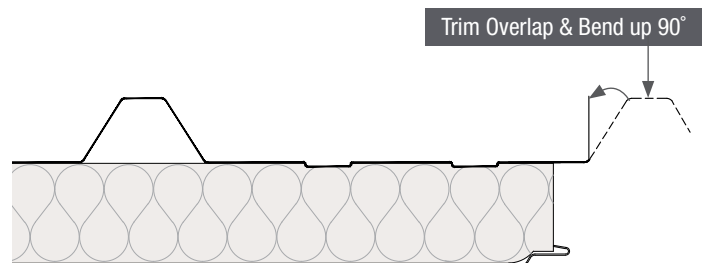
Step 1: Panel Preparation

Place Nordeck® panel roof side up on the trestles (avoid dragging the panel to eliminate damage).



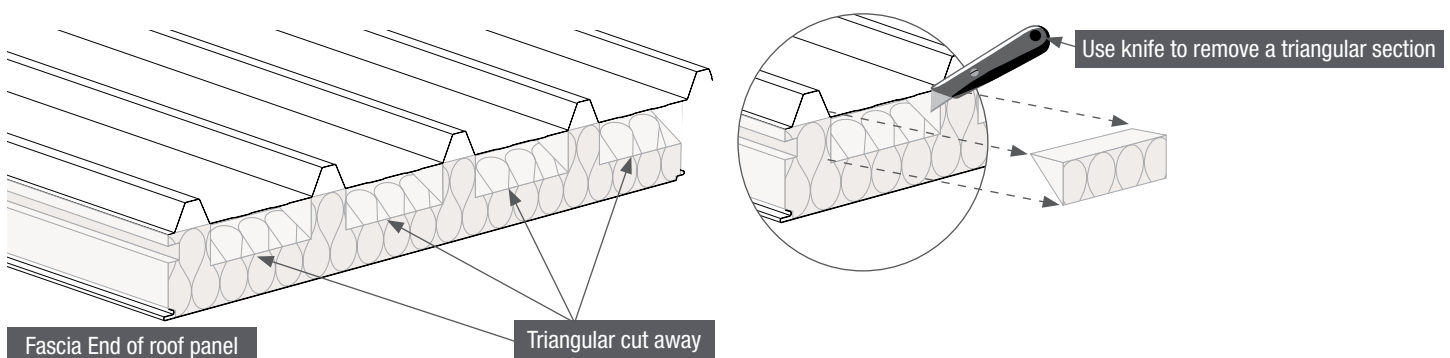
Step 2: Trim Overlap & Bend 90°

FIRST PANEL ONLY. The first overlay rib on the first panel acts as waterproofing under the side barge/apron and should be trimmed using shears and bent up 90° as shown below.



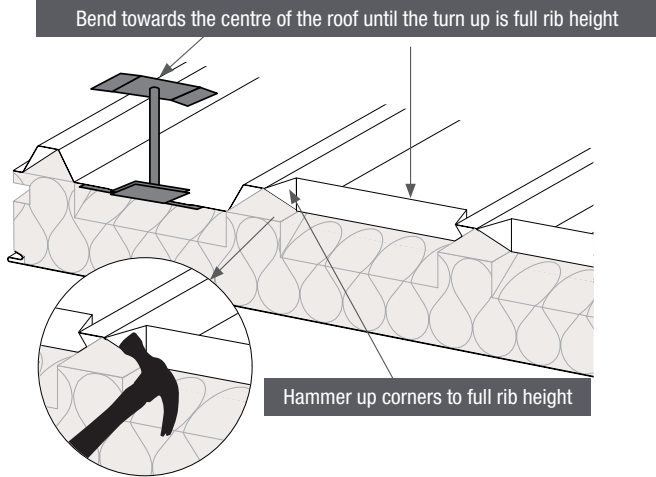
Step 3: Remove Foam at House Fascia End

Cutaway foam below pans at the fascia (house) end to allow the pan turn up.



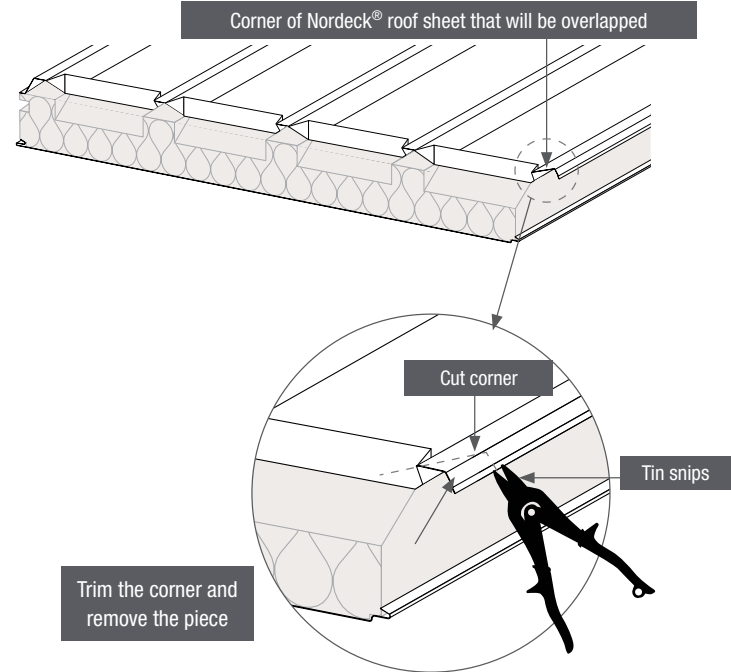
Step 4: Turn Up Pans Fascia End

Nordeck® roofs should always have the roof pans at the top or house end turned up to full rib height. It is important to ensure the pan is turned up to the full rib height for the complete width of the pan so no 'low' points exists. The Turn-up/Turn-down tool is available from your Norfoam® distributor.



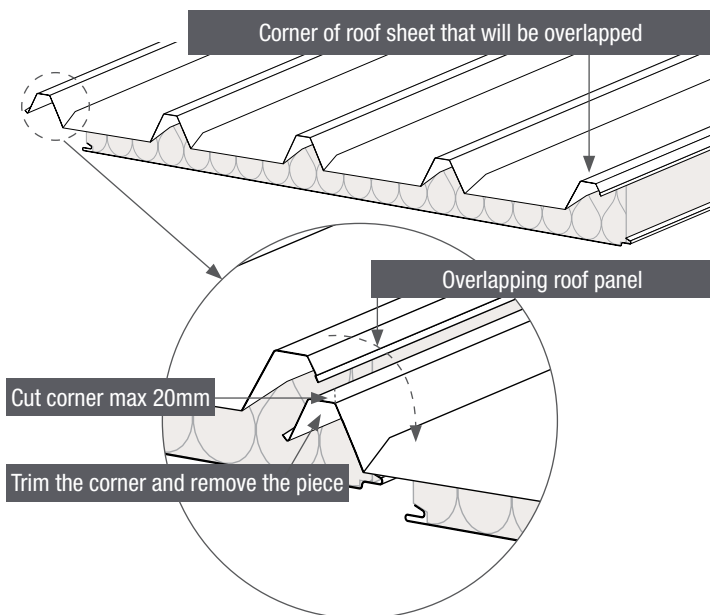
Step 5: Trim House Fascia End Overlap

Trim the overlay rib to prevent fouling with the turned up pan of the adjacent panel.



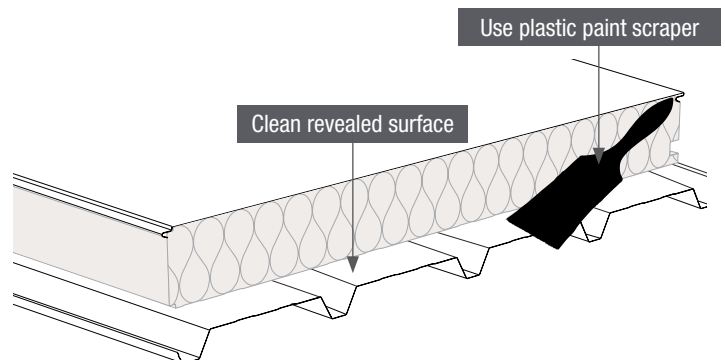
Step 6: Trim Gutter End Underlap

Trim the underlay rib of every Nordeck® panel at the gutter end to prevent water drawback via capillary action.



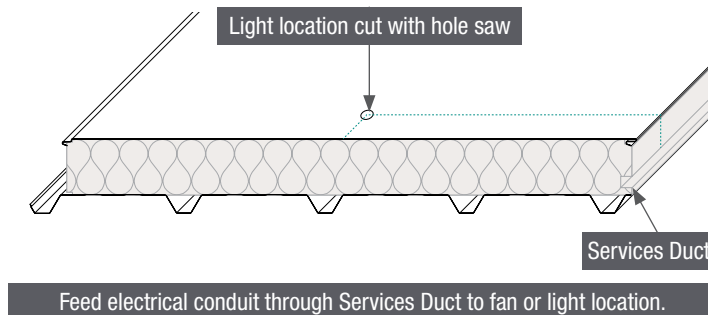
Step 7: Remove Gutter Cutback Foam

Turn the panel over roof side down on the trestles. Remove core material from the gutter cutback end of the panel with a plastic paint scraper to ensure that the fascia flashing can be installed correctly.



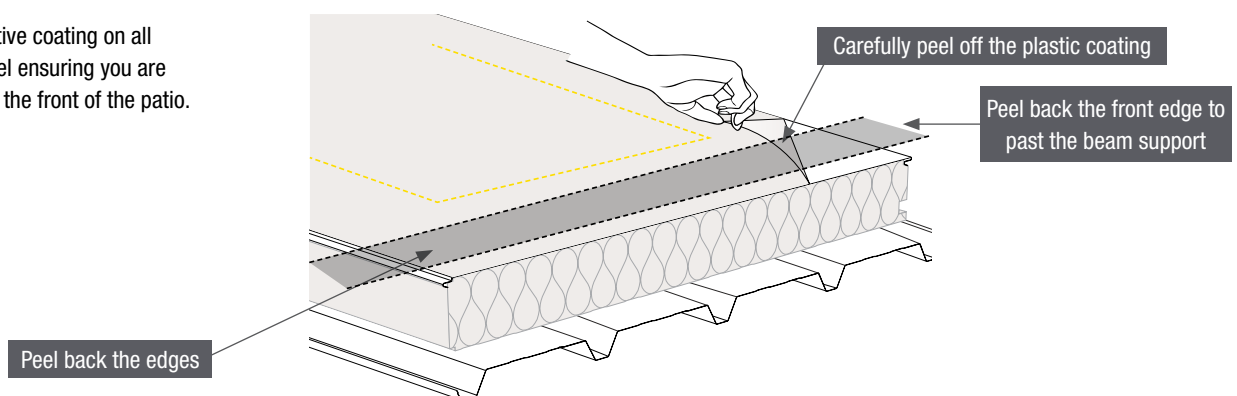
Step 8: Electrical Preparation

Mark the location of each downlight/fan, cut appropriate size hole in the Nordeck®. Feed electrical conduit through Services Duct to fan or light location. The ceiling core-strip protective film should be left on while any marking, drilling and cutting is carried out. LED Downlights & fan bracket kits are available from your Nordeck® installer or contact Norfoam® for more information.



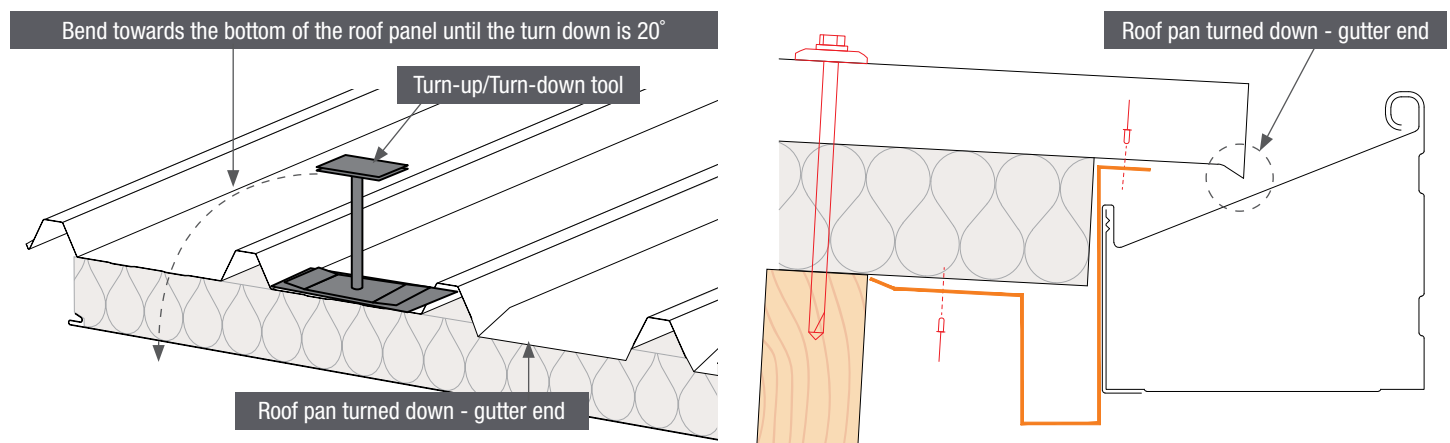
Step 9: Peel Back Plastic

Peel back protective coating on all edges of the panel ensuring you are past the beam at the front of the patio.



Step 10: Turn Down Pans Gutter End 20°

Turn the panel back over and use the special Turn-down tool to turn each pan of the panel approx 20° into the gutter. Turn downs should be done while safely on the ground before installing into place. Turn up/down tools are available from Norfoam®.



Step 11: Installing Panel

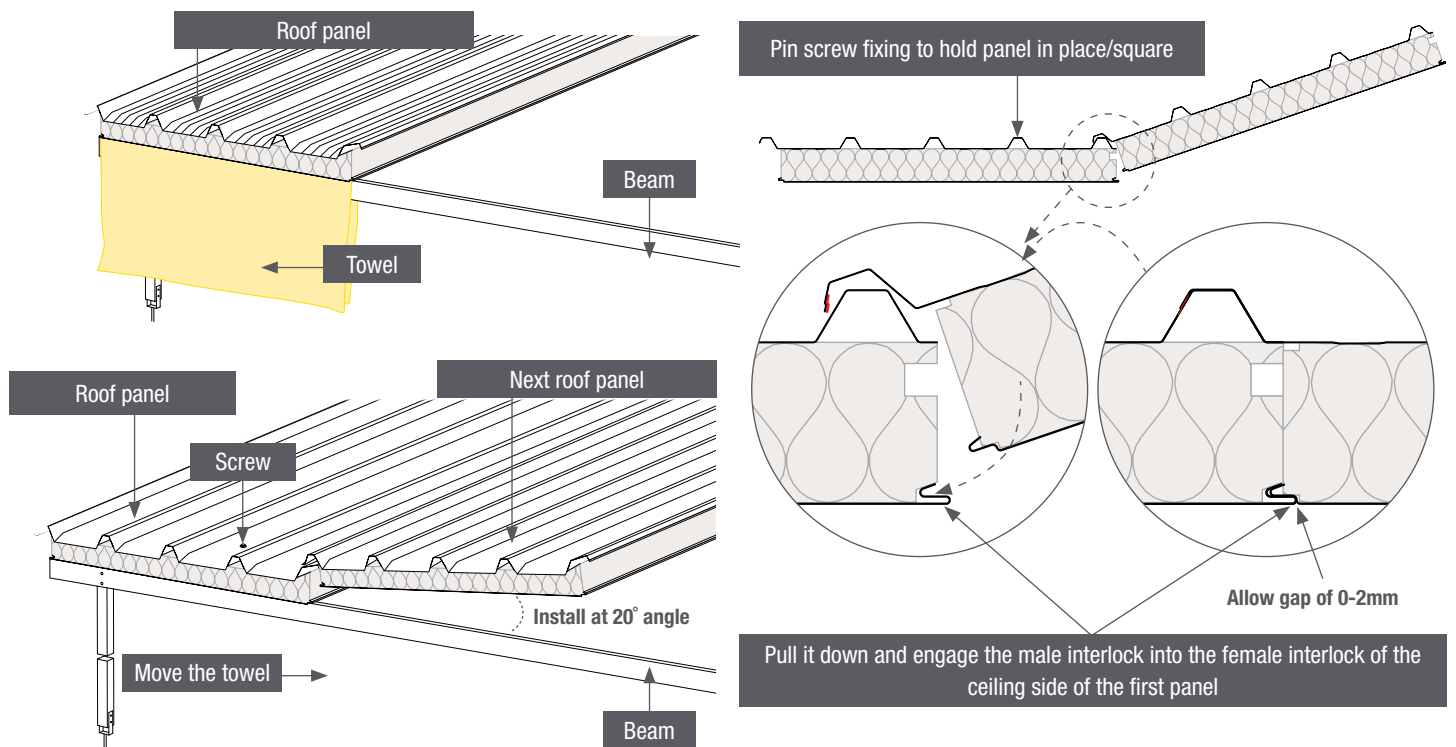
Place a towel or blanket over the beams that the first panel will be in contact with. Place the cutback end (gutter or low end) on to the covered beam and then push the panel back into the rear receiver channel.

Square off this first panel. Pin with a screw fixing in the top middle rib and with a rivet underneath receiver channel to hold it square and in place.

To install the second panel, place the overlay flap of the roof skin over the previously fitted panel and with the panel at approx 20° pull it down and engage the male interlock into the female interlock.

Slide this second panel towards the back receiver channel. To be sure you are successful, the ceiling join should be a neat 'V' join, with 0-2mm of the male interlock showing.

Screw fix to the beam and rivet bottom of the receiver channel ensuring your line is square.

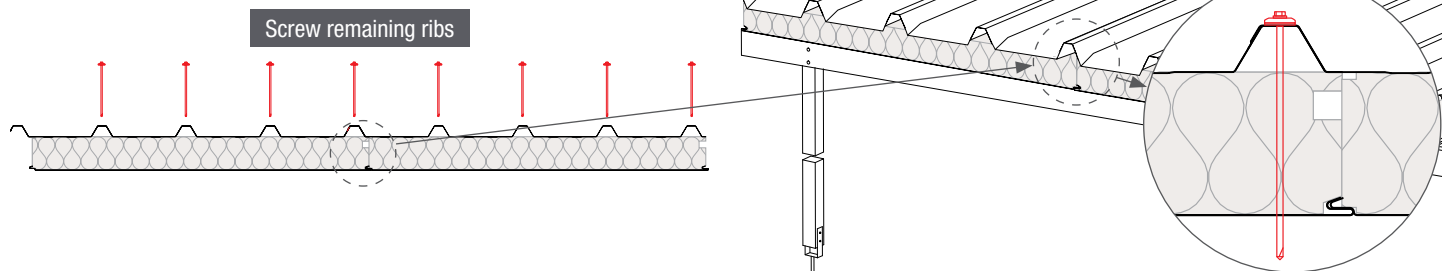


Handy Tip

Refer to Nordeck® Naturelite® Skylight Installation Instructions if installing the skylight.

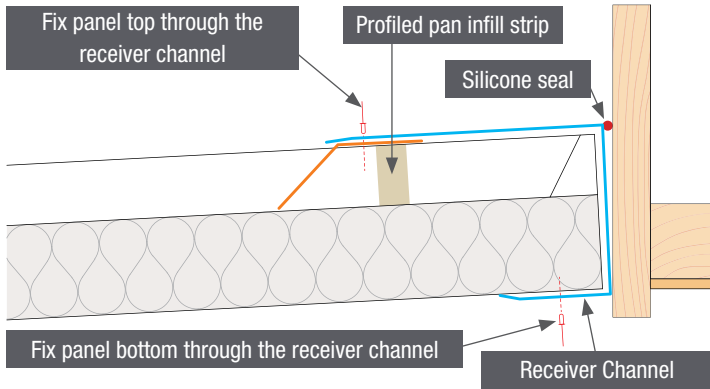
Step 12: Screw Down Remaining Ribs

Screw down the remaining ribs per fixing recommendations.



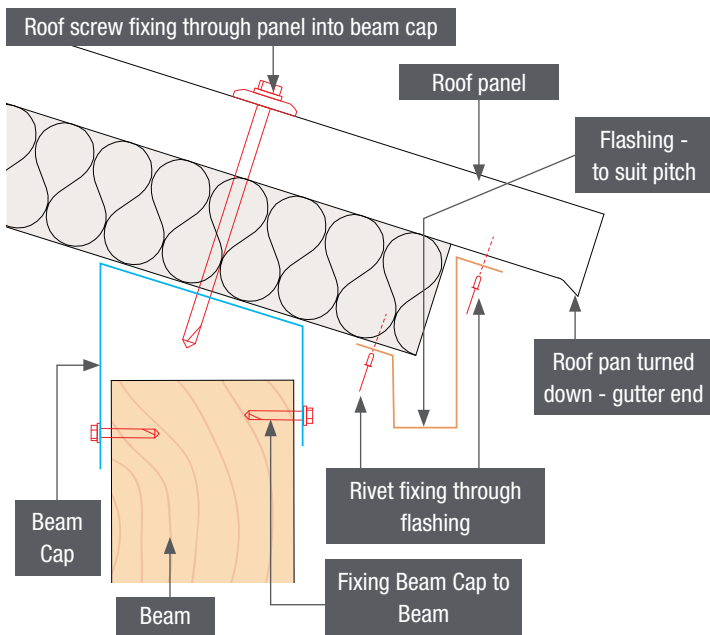
Step 13: Fix to Receiver Channel

Fix receiver channel to the top (above ribs) and the bottom of the panel.



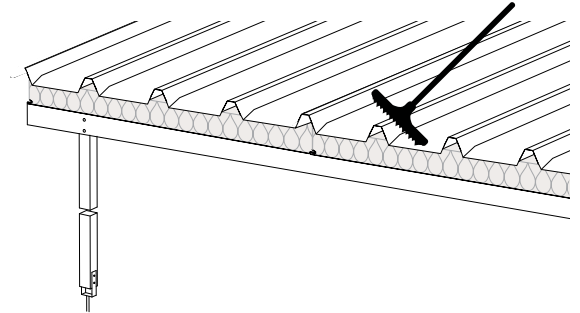
Step 15: Steeper Pitches

For steeper pitches (> 7°), an angled beam cap that is designed specifically for the beam selected is recommended to provide a flat screwing surface beneath the panel. This will prevent screws from skewing off the perpendicular to the top skin and provide a more watertight finish on top.



Step 14: Clean Down Roof

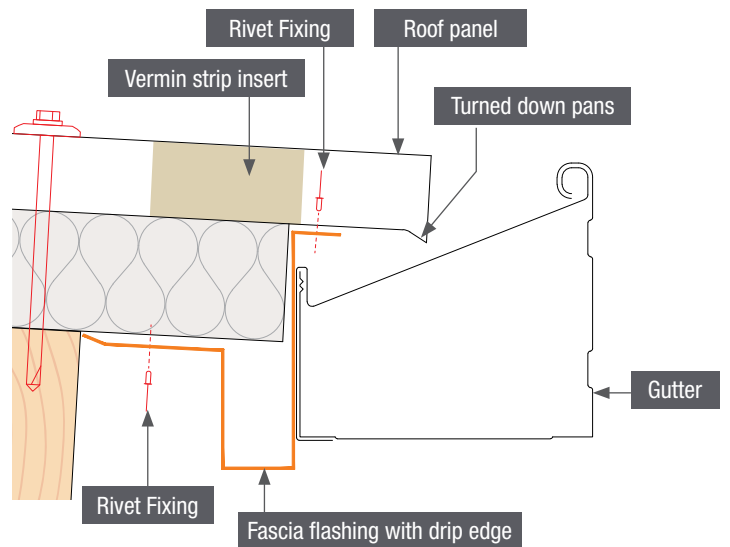
Once roof fixings are installed use a soft broom to sweep swarf and debris off the roof surface before installing flashings. Once flashings and gutter are installed clean the flashings and roof using the same method. Ensure gutters are clear from swarf and debris to prevent corrosion. A wet microfiber cloth can be used on COLORBOND® to clean down any marks.



Step 16: Vermin, Gutters, Downpipes

After all panels are fitted, vermin strips are to be inserted into every rib, then install fascia flashings, gutter, downpipes and barge flashings.

Gutter and downpipe sizes should be selected in accordance with good plumbing practice to adequately service the requirements of the additional roof area, plus handle additional water for any gutters and downpipes that were removed from the existing house roof.



Rough-in-Lighting and Other Electrical Services Instructions

WARNING: Always consult your licensed electrician for advice on details for cable installation. Ensure all services are clear of the top wall plate centre cavity where roof fixing screws will penetrate.

Nordeck® panels have a services duct (at least 20mm x 20mm) on the female (under lap) joining edge which accommodates a standard size conduit for electrical cables for ceiling lights and fans.

Step 1: Mark Entry

Mark the entry location of the feed wires on the Nordeck® underside.

Step 2: Mark Exit

Mark the exit location of the feed wires for fan/light fittings on the Nordeck® underside.

Step 3: Drill Underside

Drill through the underside metal skin at the marked locations and remove the excess polystyrene.

Step 4: Form Hole

Drill and form a hole through the services duct to the exit and entry hole on the underside.

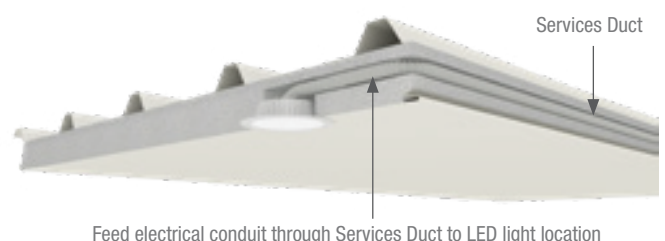
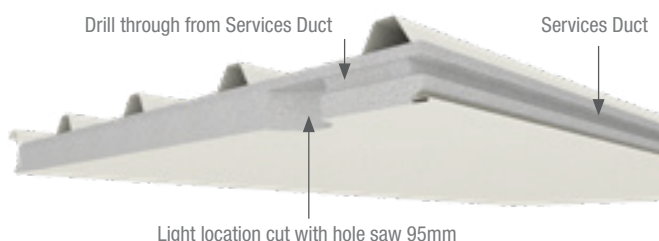
Step 5: Feed Conduit

Lift the Nordeck® panel into position. Feed the conduit up from the wall panel into the entry hole on the Nordeck® panel, along the services duct and out the exit hole.

Step 6: Screw Off

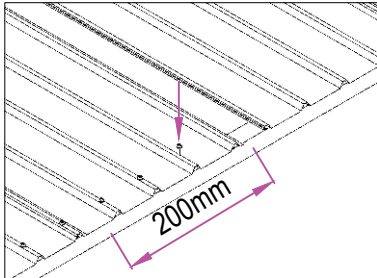
Complete the final screw off, fixing through the Nordeck® panel ribs/crests into the top wall plates or support beams.

Handy Tip: Other options of electrical services are running above dropped ceilings or bulkheads or under slab.

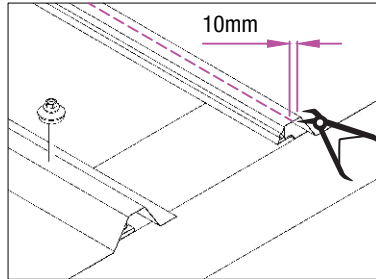


Nordeck® Naturelite® Skylight Installation Instructions

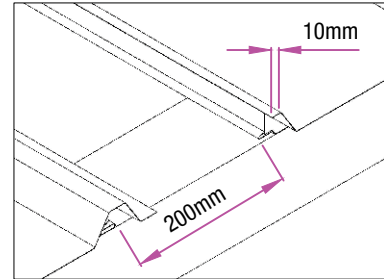
Caution: Metal roofing edges can be sharp; cut resistant gloves, appropriate clothes and shoes, safety glasses and other appropriate PPE should be worn at all time during the installation.



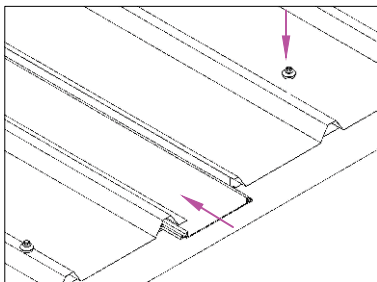
Step 1: Install and fix into position the Nordeck® insulated roof panels in direction of the roof overlap, except for the panel before the Naturelite® skylight.



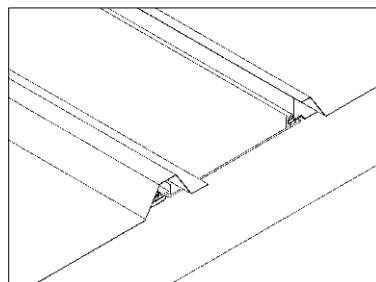
Step 2: Prepare the next Nordeck® insulated roof panel by cutting all but 10mm off the roof overlap edge using metal nibblers.
Step 3: Put the next adjoining roof panel in



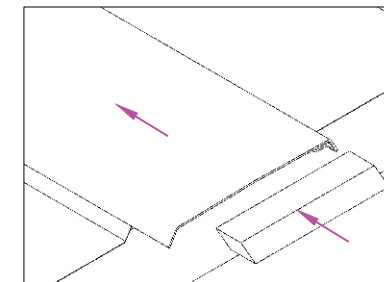
place with a gap of 200mm from the last Nordeck® roof panel.



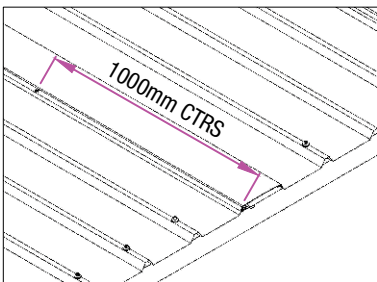
Step 4: Insert and slide the Naturelite® ceiling diffuser panel into position between the two Nordeck® panels selected, adjusting the last roof panel as needed then tack down into position.



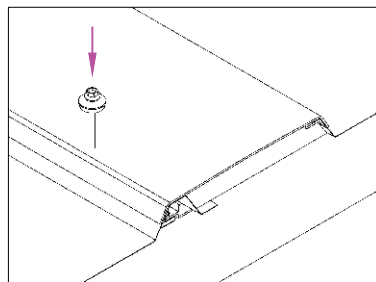
Step 5: Check the Naturelite® and Nordeck® ceiling underside is flush and level. The ceiling sheet now forms a spacer for fitting the Naturelite® skylight roof panel.



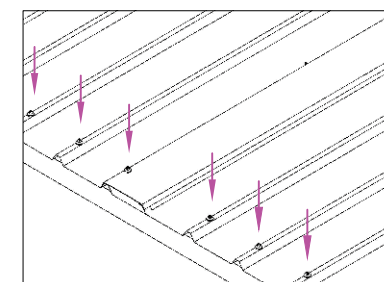
Step 6: Insert the leading edge of the Naturelite® skylight roof panel clip over the roof overlap and then slide into position. Note, any rough edges may obstruct sliding of panels. Ensure the non-clip side sits flush on top of the adjoining Nordeck® roof rib. Then fit Naturelite® skylight insert stopend to fill the gap at the gutter end to prevent water and insects entering the cavity.



Step 7: Predrill **oversized holes** on the non-clip side of the Naturelite® skylight roof panels every 1.0m through the top of the underlap rib or side. Install 10g or 12g fasteners at 1.0m intervals across the underlap side of the roof. Do not overtighten the screw.



Step 8: Predrill **oversized holes** (8-9mm) on the non-clip side of the Naturelite® skylight roof panels to suit 14g roof fasteners, in preparation for fastening the roof panel to the supporting beam.



Step 9: No fasteners are required on the clip side.

Step 10: Brush metal swarf and debris clean off the roof at the end of project.

Step 11: Insert optional profile cut skylight stop end above fascia flashing below the Nordeck® Naturelite® skylight roof profile for added protection of any open voids (ask your Nordeck® representative for more information, limited colour options available).

Clean up and Maintenance

Ensure all metal filings (swarf) are swept off and disposed of into bins as you install each sheet. These filings can leave unsightly stains on the surface of the sheet and also on floor tiles/pavers, etc, in the near vicinity.

Intermittent cleaning of all surfaces not washed by regular rainfall will prolong the life of the products and keep them looking their best. A mild detergent solution is recommended ensuring the surfaces are always wiped off with clean water afterwards. Hosing of the ceiling is to be avoided as it will cause water to sit inside panel joins and flashings leading to possible corrosion.

Installation Checklist

Description	Completed (tick)	Name/Signed
Pitch equal to or greater than 2 or 5 degrees		
All roofing turn up / turn down done		
Trimming of underlay		
Downpipe selection suitable		
Clean down of roof and gutter (removing any swarf)		
Any incorrectly drilled holes are sealed		
Electrical completed by Licensed Professional		



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