ARCPANEL

Design, Detailing & Installation Guide

VERSION 2021

AS 5637.1 GROUP 1
AS 3959 BAL-40

THERMAL RATING
UP TO R4.8

COASTAL &
SEVERE MARINE

LARGE SPANS
& CANTILEVERS

Smartek Panel

STRAIGHT & LARGE CURVED CONFIGURATIONS

Updated: 01/11/2022

Colorbond®
MADE BY AUSTRALIA

Introduction

Architectural Panels Pty Ltd (ARCPANEL) is an Australian owned, innovative insulated panel manufacturer combining over 30 years of expertise and solid business values. ARCPANEL is a leader in designing, manufacturing and supplying high performance architectural insulated panel systems today for the energy efficiency and sustainability demands of tomorrow.

SCOPE & CONDITIONS OF USE

This guide has been prepared to assist in the detailing of ARCPANEL insulated panel systems. It provides a basis from which to work but does not replace the services of professional consultants on specific projects. ARCPANEL is a manufacturer and supplier of the insulated panel only and is not responsible for the installation, installation workmanship and finishing of the roofing or walling application.

The design of the roofing or walling system for a building or application requires the services of professional consultants. This information has been prepared as a source of information to provide general guidance to professional consultants and no way replaces the services of professional consultants. No liability can therefore by accepted by ARCPANEL for its use.

If you use this Guide, you acknowledge and agree that your use is subject to the terms and conditions in this Guide. ARCPANEL, its agents, officers, employees, sub-contractors or consultants make no representations, either expressed or implied, as to the suitability of the information and data in this Guide for your particular purposes. It's your responsibility to ensure the design you use is appropriate for your needs, the products you have purchased, your site and structural limitations and your building and construction capabilities.

This Guide is subject to regular updates, the latest version can be obtained by contacting ARCPANEL on 1300 200 004 or by email info@arcpanel.com.au.

REFERENCES TO RITEK ROOF SYSTEMS

Architectural Panels Pty Ltd (ARCPANEL) acquired Ritek Roof Systems in September 2017, which included all roofing products, roof branding and technology. All intellectual property, performance testing and technical assessments of roofing products contained within this document including those referencing Ritek are owned by ARCPANEL.

Contents

Introduction & General Notes

ARCPANEL

Smartek Panel

FULLY INTEGRATED ROOF SYSTEM

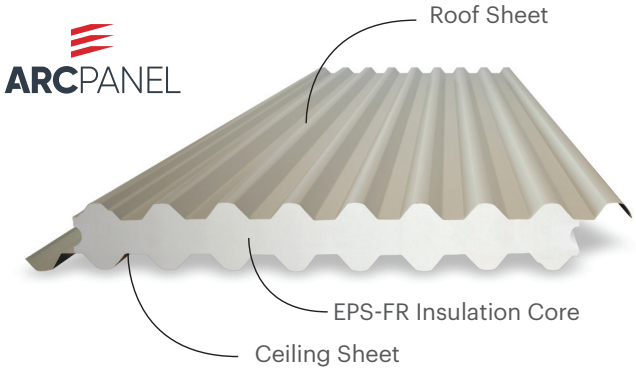
ARCPANEL Smartek roof panel combines aesthetic, innovative design, with high strength, durability and excellent thermal insulation. The ARCPANEL Smartek roof panel can achieve significant cantilevers, in some applications up to half the actual back span and this unique system eliminates the need for complex, expensive roof structures. The lightweight ARCPANEL panels are easily handled on site, achieving faster, lower cost installation.

UNIQUE DESIGN & CONSTRUCTION

ARCPANEL pre-fabrication starts with contemporary trapezoidal COLORBOND® steel sheeting, bonded to both sides of profiled EPS. The panel yields high strength resulting in large spans and cantilevers along with a high insulation value. Standard ratings from R2.4 to R4.8 can easily be achieved. The strength of this construction means that the ARCPANEL Smartek roof panel is suitable for use in high wind conditions. After the panels are fixed in place, there is virtually no maintenance required other than the occasional wash down of soffits.

On site time spent fitting trusses, eave linings, plasterboard, battens, insulation lining, roof sheeting and painting, is eliminated when using ARCPANEL Smartek roof panel.

Straight panels can be manufactured using COLORBOND® steel, COLORBOND® steel Matt, COLORBOND® Ultra steel, COLORBOND® Metallic steel, SUPERDURA™ Stainless steel and ZINCALUME® steel. Available in a range of classic and contemporary COLORBOND® steel colours with limited colours in Stainless Steel.



BAL-40 CERTIFIED & COMPLIANT

KEY FEATURES AND BENEFITS

- ✓ Achieve up to 10m unsupported spans - reduce expensive support structures e.g. roof trusses & support beams
- ✓ Corrugated profile is used on both sides, reducing the need for ceilings and internal painting
- ✓ Pre-finished - extensive range of COLORBOND® steel colours available
- ✓ Dependant on the design, cantilevers of up to 40% the actual backspan can be achieved
- ✓ ARCPANEL Smartek roof panel is available in COLORBOND® steel, COLORBOND® steel Matt, COLORBOND® Ultra steel, COLORBOND® Metallic steel, SUPERDURA™ Stainless steel, ZINCALUME® steel
- ✓ Rapid installation makes the ARCPANEL Custom roof panel a clear winner over traditional roof construction
- ✓ Fire rated to Group 1 - roof and wall lining material
- ✓ Superior standard thermal ratings up to R4.8 are achieved using the ARCPANEL Smartek roof panel
- ✓ Panels meet the requirements for live and concentrated imposed loads for roofs not accessible except for normal maintenance as per AS1170.1:2002
- ✓ Bushfire attack level BAL-12.5 to BAL-40
- ✓ Low Pitch (3 Degrees) capability

ROOF TYPES

STRAIGHT PROFILE

Straight panels can be manufactured up to 20 metres in length, suitable for housing, awnings, patios, commercial and industrial projects.

LARGE CURVED PROFILE

Curved panels can be manufactured to a radii greater than 60m.

Curved panels can be manufactured in lengths up to 20 metres, panels can be joined to achieve longer runs.

ARCPANEL Insulated panel's offer industry leading warranties, it is important that care is taken when selecting the sheeting material. Environmental conditions, coastal & geographic locations and extreme weather conditions should all be considered. Other points such as roof pitch, metal thickness and direction of lay are also important. The sheeting plays an important part in the structural design of ARCPANEL's insulated roof system.

Please feel free to contact us for further information. Technical Bulletins from Bluescope Steel are available from ARCPANEL or visit www. bluescopesteel.com.au.

Sheeting Material Types

COLORBOND® STEEL (Standard Finish)

While standard COLORBOND® steel will suit most residential and commercial designs in most locations it most suitable for: Non-Coastal, Coastal Locations 1km-5km and Marine location greater than 200mm from salt or brackish environments.

ZINCALUME® STEEL

Next generation ZINCALUME® steel's patented Activate® technology introduces magnesium into the aluminium-zinc alloy coating, improving galvanic protection by activating the aluminium. The result is a tougher protective coating that's more resistant to scratches and scuffs encountered during construction. Suitable for: Non-Coastal, Coastal Locations 1km-5km and Marine location greater than 200mm from salt or brackish environments.

COLORBOND® ULTRA STEEL

COLORBOND® Ultra steel is especially designed for severe coastal and industrial environments - where there is exposure to salt or brackish water in the air and approximately 100 to 200 metres from breaking surf. Similarly, the effects of industrial emissions (fumes and/or particulate fallout) are typically lessened 100 to 200 metres from the source. Suitable for: Severe Marine Locations to Coastal Location and Aquatic/Swimming Pool environments.

SUPERDURA™ STAINLESS STEEL

SUPERDURA™ Stainless steel is the recommended roofing material for coastal areas where there is a constant salt spray in the air – within 100 metres from breaking surf - or within proximity to industrial emissions. Suitable for: Non Coastal, Coastal to Severe Marine Locations and Aquatic/Swimming Pool environments.

AQUATEK APPLICATIONS

For enclosed aquatic applications, ARCPANEL recommends the use of ARCPANEL Aquatek Panel with large spanning capabilities and a range of panel thicknesses to suit your project, the ARCPANEL Aquatek Roof systems is the ultimate roof solution.

Please refer to ARCPANEL's Aquatek Guide for further information.

Colorbond®

COLOUR RANGE - CLASSIC

Dover White™ SA = 0.28 BCA = L	Surfmist® SA = 0.32 BCA = L	Southerly® SA = 0.40 BCA = L	Shale Grey™ SA = 0.45 BCA = M
Bluegum® SA = 0.57 BCA = M	Windspray® SA = 0.58 BCA = M	Basalt® SA = 0.71 BCA = D	Classic Cream™ SA = 0.32 BCA = L
Paperbark® SA = 0.42 BCA = M	Evening Haze® SA = 0.43 BCA = M	Dune® SA = 0.47 BCA = M	Gully® SA = 0.63 BCA = D
Jasper® SA = 0.68 BCA = D	Manor Red® SA = 0.69 BCA = D	Wallaby® SA = 0.64 BCA = D	Woodland Grey® SA = 0.71 BCA = D
Pale Eucalypt® SA = 0.60 BCA = M	Cottage Green® SA = 0.75 BCA = D	Ironstone® SA = 0.74 BCA = D	Deep Ocean® SA = 0.75 BCA = D
Monument® SA = 0.73 BCA = D	Night Sky® SA = 0.96 BCA = D		

COLOUR RANGE - MATT FINISH

Surfmist® SA = 0.35 BCA = L	Dune® SA = 0.48 BCA = M	Shale Grey™ SA = 0.45 BCA = M	Bluegum® SA = 0.57 BCA = M
Basalt® SA = 0.71 BCA = D	Monument® SA = 0.79 BCA = D		

COLORBOND® ULTRA STEEL

Surfmist® SA = 0.32 BCA = L	Shale Grey™ SA = 0.45 BCA = M	Windspray® SA = 0.58 BCA = M	Dune® SA = 0.47 BCA = M
Wallaby® SA = 0.64 BCA = D	Woodland Grey® SA = 0.71 BCA = D	Monument® SA = 0.73 BCA = D	

SUPERDURA™ STAINLESS STEEL

SURFMIST®

Surfmist® Stainless SA = 0.36 BCA = L

COOLMAX® STEEL

WHITEHAVEN®

Whitehaven® SA = 0.23 BCA = L

COLORBOND® STEEL METALLIC FINISH (subject to availability)

Galactic™ SA = 0.34 BCA = L	Cosmic™ SA = 0.39 BCA = L	Rhea™ SA = 0.49 BCA = M	Astro™ SA = 0.62 BCA = D

*Lead times are subject to supplier availability.

Colour swatches are provided as an indication of colour only and may not be an actual representation of colour. We recommend checking your chosen colour against an actual sample of the product before purchasing.

Corrosion resistant options available for coastal applications - please contact us for more details.

Version 2021. Always refer to local state building regulations and current safety requirements. Updated: 01/11/2022.

ARCPANEL PRODUCT STRUCTURAL WARRANTY FOR ROOFING APPLICATIONS (SAMPLE ONLY)

INDICATIVE & MAXIMUM STRUCTURAL WARRANTY PERIOD - SUBJECT TO PRIOR APPROVAL

Environment	(ISO Cat.1)	(ISO Cat.2)	(ISO Cat.3)	(ISO Cat.4)	(ISO Cat.5)	(Highly Corrosive)
Panel Material	Non-Coastal 5km+	Coastal 1km to 5km	Marine (calm) Industrial 500m to 1km	Severe Marine (calm) Industrial 100 to 500m	Very Severe Marine (surf) 50m to 500m Corrosive Industrial 0m to 100m	Enclosed Aquatic Centre Swimming Pools
COLORBOND® STEEL / ZINCALUME®	**20 years**	**15 years**	**10 years**	By Enquiry	No Warranty	No Warranty
COLORBOND® ULTRA STEEL	**20 years**	**20 years**	**15 years**	**10 years**	By Enquiry	By Enquiry
SUPERDURA™ STAINLESS STEEL	**20 years**	**20 years**	**20 years**	**20 years**	**20 years**	**20 years**
COOLMAX® STEEL	**20 years**	**20 years**	**20 years**	**20 years**	**20 years**	**20 years**

BLUESCOPE STEEL - COLORBOND® STEEL MATERIAL AND COLOUR SELECTION CHART — TABLE 1

Colour	Classification	Solar Absorbance	Availability		Recommended for use to		Curving Grade	**NSW Basix Sustainability Index**
			Standard	Ultra	Roof Side	Ceiling Side		
COLORBOND® steel								
Basalt®	Dark	0.69	✓		NO**	✓		M
Bluegum®	Medium	0.57	✓		✓	✓	✓	M
Classic Cream™	Light	0.31	✓		✓	✓	✓	L
Cottage Green	Dark	0.75	✓		NO**	✓	✓	D
Deep Ocean®	Dark	0.75	✓		NO**	✓	✓	D
Dover White™	Light	0.28	✓		✓	✓	✓	L
Dune®	Medium	0.47	✓	✓	✓	✓	✓	L
Evening Haze®	Medium	0.43	✓		✓	✓	✓	L
Gully®	Dark	0.63	✓		✓	✓		M
Ironstone®	Dark	0.74	✓		NO**	✓	✓	D
Jasper®	Dark	0.68	✓		✓	✓	✓	M
Manor Red®	Dark	0.69	✓		NO**	✓	✓	M
Monument®	Dark	0.73	✓	✓	NO**	✓	✓	D
Night Sky®	Dark	0.96	✓		NO**	✓		D
Pale Eucalypt®	Medium	0.60	✓		✓	✓	✓	M
Paperbark®	Medium	0.42	✓		✓	✓	✓	L
Shale Grey®	Medium	0.43	✓	✓	✓	✓	✓	L
Southerly®	Light	0.40	✓		✓	✓	✓	L
Surfmist®	Light	0.32	✓	✓	✓	✓	✓	L
Wallaby®	Dark	0.64	✓	✓	✓	✓		M
Whitehaven®	Light	0.23	✓		✓	✓		L
Windspray®	Medium	0.58	✓	✓	✓	✓	✓	M
Woodland Grey®	Dark	0.71	✓	✓	NO**	✓		D
ZINCALUME®*	Light	<0.35			✓		✓	L
STAINLESS STEEL								
Surfmist®	Light	0.318			✓	✓		L
COOLMAX® STEEL								
Whitehaven®	Light	0.23			✓	✓		L

IMPORTANT NOTES: USE OF DARK COLOURS FOR EXTERNAL FINISHES, LIMITED WARRANTY APPLIES, PLEASE CONTACT ARCPANEL FOR FURTHER INFORMATION.

* Galv, ZINCALUME®, COLORBOND® Matt and COLORBOND® dark colours may show minor visible roll forming process marks, this is a characteristic of roll forming process and not a defect.

** Colours with a NCC / BCA 'Dark' classification having a solar absorbance of greater than 0.68 are not recommended to be used as a top roof or outer wall sheeting. Increased surface temperature, expansion, deflection and thermal movement can be expected of an insulated panel when using dark colours exposed to direct sunlight. The building designer is responsible for colour selection, acknowledges and accepts any associated design risks. Arcpanel warranty does not cover structural damage to the building or to the panels caused by extreme or concentrated dry heat loads and surface temperatures in excess of 78 degrees Celsius.

Introduction & General Notes

PANEL SIZES

Standard panel thicknesses are available (other panel thicknesses are available upon request):

100mm - 125mm - 140mm - 175mm - 200mm

PANEL LENGTHS

Straight and large curved panels can be supplied up to 20 metres in length.

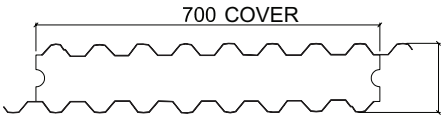
PANEL CONFIGURATIONS

Panels can be manufactured in straight and large curved configurations. Refer to roof type guide on page 3 for further information.

PANEL FINISH

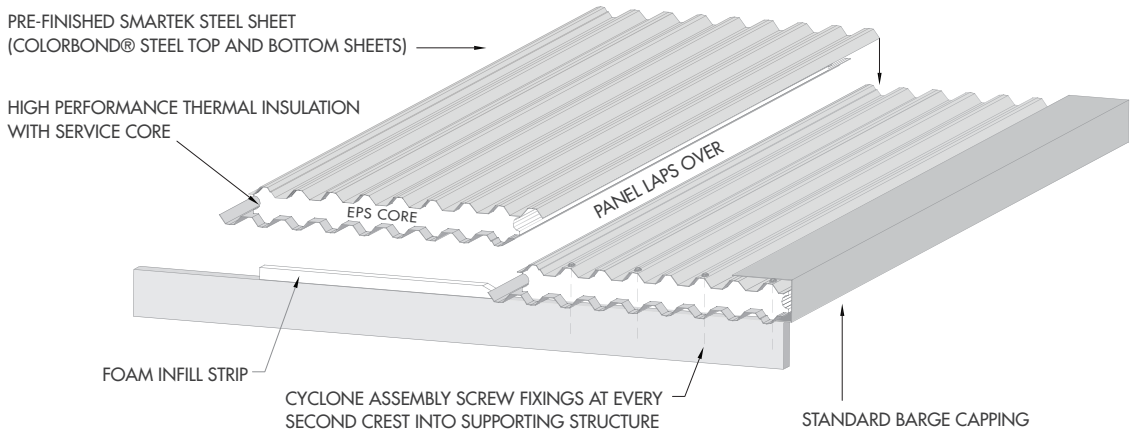
The ARCPANEL Smartek roof panel is available in a trapezoidal finish to both the inside and outside linings. Please refer to table 1 on page 5 for further information on colours and material types. Base metal thickness of 0.42mm and a total coated thickness of 0.47mm is used as standard, unless otherwise stated.

PANEL DIMENSIONS



Panel Thickness
Overall Dimension
(Crest to Crest)

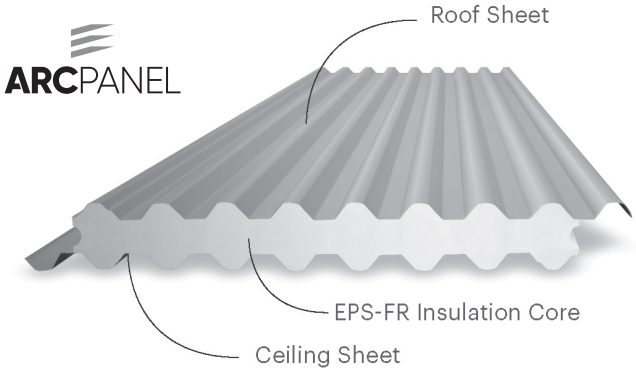
SMARTEK PANEL COMPONENT ELEMENTS



ARCPANEL SMARTEK PANEL SPECIFICATIONS — **TABLE 2**

Cover Width	Core Material	Length	Thermal Conductivity	Top Sheet Finish	Bottom Sheet Finish	Sheet Material	Typical Panel Weight
700mm W ± 2mm	Expanded Polystyrene with Flame Retardant	Ordered to Size L ± 5mm	0.038 W/mK	COLORBOND® Steel COLORBOND® Ultra ZINCALUME® SUPERDURA® Stainless Steel	COLORBOND® Steel COLORBOND® Ultra ZINCALUME® SUPERDURA® Stainless Steel	0.42BMT G550 Steel	100mm = 10.1kg/m^2 125mm = 10.5kg/m^2 140mm = 10.7kg/m^2 175mm = 11.2kg/m^2 200mm = 11.6kg/m^2

Contents



Key Product Features:

Profile:	Trapezoidal Top, Trapezoidal Bottom
Min Roof Pitch:	3 degrees
Max Span:	Up to 10m
Max Cantilever:	Up to 4m
Thickness Range:	100mm to 200mm
Thermal R-Value Range:	R2.4 to R4.8
Material Range:	COLORBOND® steel, COLORBOND® steel Matt COLORBOND® Ultra steel COLORBOND® Metallic steel SUPERDURA™ Stainless steel ZINCALUME® steel.
Panel Length Range:	1.2m to 20m
Curve Radius Range:	60m to 100m
AS ISO 9705 Rating:	Group 1
BAL Fire Rating:	BAL-12.5, BAL-19, BAL-29, BAL-40

Version 2021. Always refer to local state building regulations and current safety requirements. Updated: 01/11/2022.

NON CYCLONIC - SINGLE SPAN — TABLE 3

Midspan deflection up to span/120 at serviceability limit state; Self weight deflection up to span/600. Maximum unsupported Spans (mm)

Wind Class (Permissible)	Strength Limit State Design Wind Pressure (P) (kPa)	Total R Value R2.4 100mm Panel		Total R Value R2.7 125mm Panel		Total R Value R3.1 140mm Panel		Total R Value R4.1 175mm Panel		Total R Value R4.8 200mm Panel	
		Max Span	Max Cantilever	Max Span	Max Cantilever	Max Span	Max Cantilever	Max Span	Max Cantilever	Max Span	Max Cantilever
N2-W33	1.52	6020	2410	7280	2910	7860	3150	9070	3630	10200	4010
N3-W41	2.34	5000	2000	5980	2390	6500	2600	7640	3050	8400	3360
N4-W50	3.50	4030	1210	4900	1470	5340	1600	6300	1890	6970	2100
N5-W60	5.03	2950	885	3980	1195	4370	1310	5150	1545	5730	1725

PLEASE NOTE: Maximum cantilever is 40% of backspan (span closest to cantilever) in N1 to N3 wind classes, 30% maximum cantilever for N4 & N5 wind classes.

SPAN SELECTION NOTES (NON CYCLONIC AREAS)

1. Tables 3 applies to typical enclosed buildings built on the ground, less than 20m high with sealed doors and windows capable of resisting the applied wind pressures
2. Roof pressure coefficients: Cpe = 1.5 X -0.9 = -1.35, Cpi = +0.2 [Cpi = +0.7 at cantilever]
3. The building designer must take into account any application where the Cpi would exceed > 0.2 in open or partly open structures
4. Maximum cantilever for N1-W28, N2-W33 & N3-W41 is up to 40% actual backspan no greater than max length shown
5. Maximum cantilever for N4-W50 & N5-W60 is up to 30% actual backspan no greater than max length shown (Maximum cantilever lengths cannot be exceeded. Choose a thicker panel to achieve the required cantilever) (Minimum width of cantilevered roof is 1.5 x cantilever)
6. Wind Load Serviceability Criteria based on AS 4055, Vs=0.64 x Vu
7. Oversized gutters may affect the cantilever capability, please contact ARCPANEL
8. Limited racking, diaphragm action and lateral restraint capacity, refer to page 13
9. 300mm maximum side cantilever using full uncut panel
10. Thermal R-Values are Total R-Values (Winter - Tested conductivity 0.038W/m.K at 23˚C)
11. In locations where the roof panels are not fixed to the parallel raked external walls (due to glazing and the like), the engineer shall select the panels using the max wind pressure calculated with upwind local pressure coefficients in accordance with AS1170.2

GENERAL SPAN SELECTION NOTES

Live Loads:
Maximum distributed live load 0.25kPa.

Roofs in Alpine Areas:
Designer must refer to ARCPANEL for engineering advice regarding snow loadings.

Deflection Limits:
The ARCPANEL span tables have been provided with specific deflection limits indicated for serviceability wind speeds. The building designer must take all necessary care to select an appropriate panel thickness for their specific situation, taking into account the amount of potential roof panel movement relative to any attached non-structural elements, such as internal wall partitions and window frames etc. The building designer must also make allowance for deflections which can exceed those in the tables when the wind speeds are occasionally above the designated serviceability wind speed during extreme weather conditions.

Cantilever Deflections:
Note that cantilever deflections will depend on the backspan, rigidity of supports, building geometry and building permeability. Cantilever deflection can be up to (cantilever length) / 50 at serviceability wind speeds. The building designer must take all necessary care to select an appropriate panel thickness for their specific situation taking into account the amount of potential roof panel movement at the ends of and along the sides of cantilevered sections of the roof, relative to any adjacent attached flashings, downpipes, screen partitions and walls. The builder designer must also make allowance for cantilever deflections which can exceed (cantilever length) / 50 when wind speeds occasionally exceed serviceability wind speeds during extreme weather conditions. Cantilever deflections due to self weight can be up to (cantilever length) / 400.

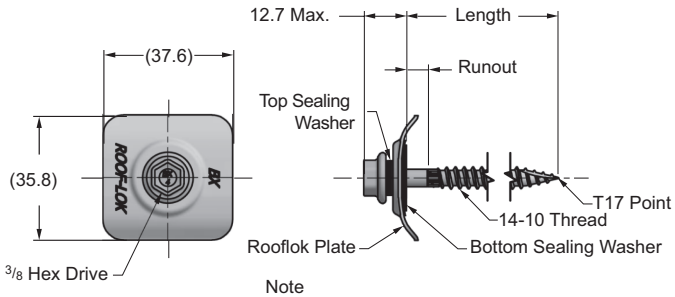
Maximum Side Panel Overhang
The maximum side overhang of a panel is limited to 300mm for an uncut end panel. The end panel must have a minimum of 3 main fixings in the panel to allow an overhang up to 300mm.

Refer to page 15 for maximum dead loads.

Version 2021. Always refer to local state building regulations and current safety requirements. Updated: 01/11/2022.

FIXING INTO TIMBER SUPPORTS

Timber - Type T-17

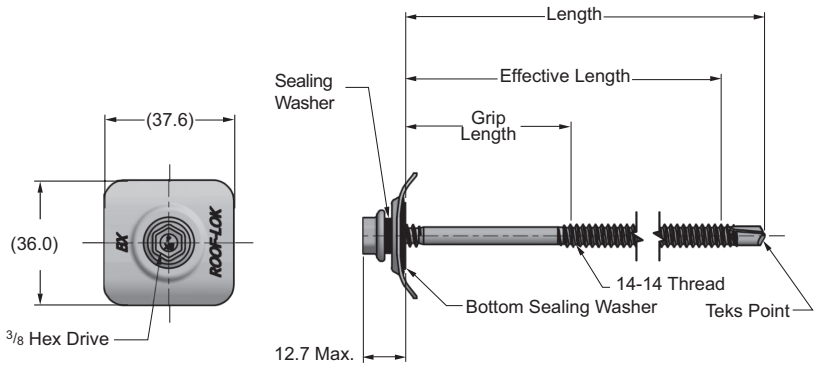


Note
Lengths from underside of sealing washer and includes compression.

FIXING TABLE - TIMBER (TYPE T-17)		
Minimum Fixing Screw Embedment of 35mm		
Panel Thickness	Min. Length	Fixing Type
100	135	14-10 x 150mm
125	160	14-10 x 175mm
140	175	14-10 x 200mm
175	210	14-10 x 240mm
200	235	14-10 x 240mm

FIXING INTO STEEL SUPPORTS (2MM-5MM)

Steel - Type TEK 14-14

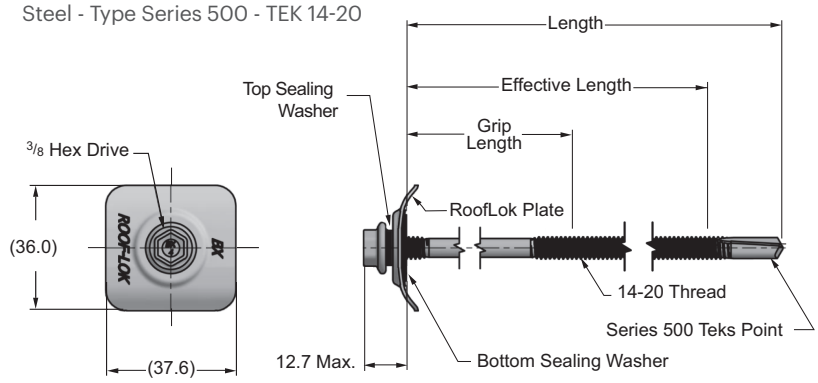


FIXING TABLE - STEEL 2-5mm (TYPE TEK 14-14)		
Minimum Fixing Screw Embedment of 30mm		
Panel Thickness	Min. Length	Fixing Type
100	130	14-14 x 135mm
125	155	14-14 x 175mm
140	170	14-14 x 175mm
175	205	14-14 x 205mm
200	230	14-20 x 250mm*

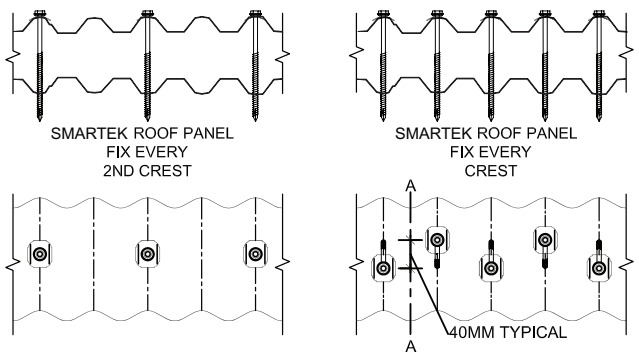
*Only available in Series 500 type

FIXING INTO STEEL SUPPORTS (5.1MM-12MM)

Steel - Type Series 500 - TEK 14-20



FIXING TABLE - STEEL 5.1-12mm (SERIES 500 - TEK 14-20)		
Minimum Fixing Screw Embedment of 30mm		
Panel Thickness	Min. Length	Fixing Type
100	130	14-20 x 150mm
125	155	14-20 x 200mm
140	170	14-20 x 200mm
175	205	14-20 x 250mm
200	230	14-20 x 250mm



- 14-10 x 'X' mm screws can be substituted for 14-14-'x' mm screws in steel between 1.3mm to 4.0mm
- 14-20 x 200 mm series 500 screw can be used for 160mm Smartek Panel into 3.0mm to 12.0mm if there is no void between panel and fixing beam / top plate
- Clearance must be checked to allow for protruding screw length through fixing point
- Fixing beam / top plate must be pitched to suit the roof panel pitch
- Fixing to other substrates (aluminium, stainless steel etc) may be possible, refer to technical services
- Fixing to steel substrates less than 2.0mm, refer to technical services
- Fixing screw table reflects the range of screws currently available on the market from Buildex®.

Note: Panel Fixing Screws are offset by 40mm (20mm from centre line of crest) to ensure that timber beams do not split. Ensure that screws do not break out through the side of the beam. Fixing tables are provided as a guide. Refer to engineers specification. Not all panel thicknesses are available.

Version 2021. Always refer to local state building regulations and current safety requirements. Updated: 01/11/2022.

FIXING SCREW SELECTION NOTES - NON CYCLONIC AREAS

End Support Fixing, Roof-Lok Cyclone Assembly, Class 4

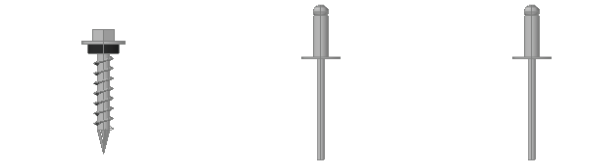
1. Every second crest when pressure [P] x (3/4 backspan + 4/3 cantilever [m]) is not greater than 22.5 [kN/m]
2. Every crest when pressure [P] x (3/4 backspan + 4/3 cantilever [m]) is greater 22.5 [kN/m]
3. Raked external walls running parallel to the span fixing point at every 200mm c/c

Internal Support Fixing, Corri-Lok Cyclone Assembly, Class 4

1. Every second crest when pressure [P] x (span1 + span2 [m]) x 0.625 is not greater than 22.5 [kN/m]
2. Every crest when pressure [P] x (span1 + span2 [m]) x 0.625 is greater than 22.5 [kN/m]
3. Raked external walls running parallel to the span fixing point at every 200mm c/c

*Note: Refer to ARCPANEL for the use of stainless steel fixing

TOPSIDE PANEL TO PANEL STITCHING
Stitching Screws (All Applications):
Details: Class 4 Hex Head Roof Zip w/seal **M6.0 - 11 x 25**
Spacing: Used at 300mm centres on the top sheet lap and used to attach rainwater goods.



HEX HEAD ROOF ZIP W/SEAL M6.0 - 11 X 25 | RIVET 73 S-S 4-3 (Group 1) | RIVET 73 A-A 5-4

UNDERSIDE PANEL TO PANEL STITCHING

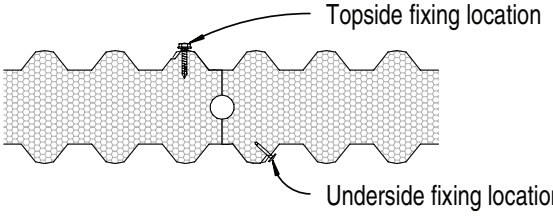
Rivets for Internal Underside Stitching (AS 5637.1 ISO 9705 Group 1 Applications)

Details: **73 S-S 4-3** rivets (3.2mm x 8mm steel / steel rivets)
Spacing: Used at 300mm centres on the underside sheet lap

AS 5637.1 ISO 9705 GROUP 1 *applications are typically required for fire isolated exits for non domestic building applications with exposed panel ceilings or wall linings of Building Class 2 to 9, see Table 10B.*

Rivets for Underside Stitching (Other Applications):
Details: **73 A-A 5-4** rivets (4.0mm x 10mm alum / alum rivets)
Spacing: Used at 300mm centres on the underside sheet lap

Rivets for External Flashings & Accessories
Details: **73 A-A 5-4** rivets (4.0mm x 10mm alum / alum rivets)
Spacing: Refer to Fixing Schedule – Rainwater Goods Page 50



FIXING SCREW PROPERTIES — **TABLE 4**

Fixing Type & Accessories	Material	Permissible Load (kN)
Buildex or similar Type 17 with Roof-Lok cyclonic washer	Steel - Class 4	2.62
Buildex or similar 500 series with Roof-Lok cyclonic washer	Steel - Class 4	2.80
Buildex or similar Metal Tek with 20mm bonded washer	Stainless STeel	1.88

Note: The worst case static load, based on a 140mm panel in W60C conditions within 5 fixings/panel at a continuous support is 1.847KN in accordance with AS1562.1, AS4040

The above is the recommended fixing schedule for the ARCPANEL Smartek roof panels, however in some situations additional fixing and/or different spacing may be required due to wind loads, structural requirements etc. The building designer will need to be consulted to confirm that the above fixings will be adequate for the individual project. ARCPANEL recommends that an experienced installer is used for fixing and finishing of the ARCPANEL Smartek roof panels.

Version 2021. Always refer to local state building regulations and current safety requirements. Updated: 01/11/2022.

Standard Roof Penetrations

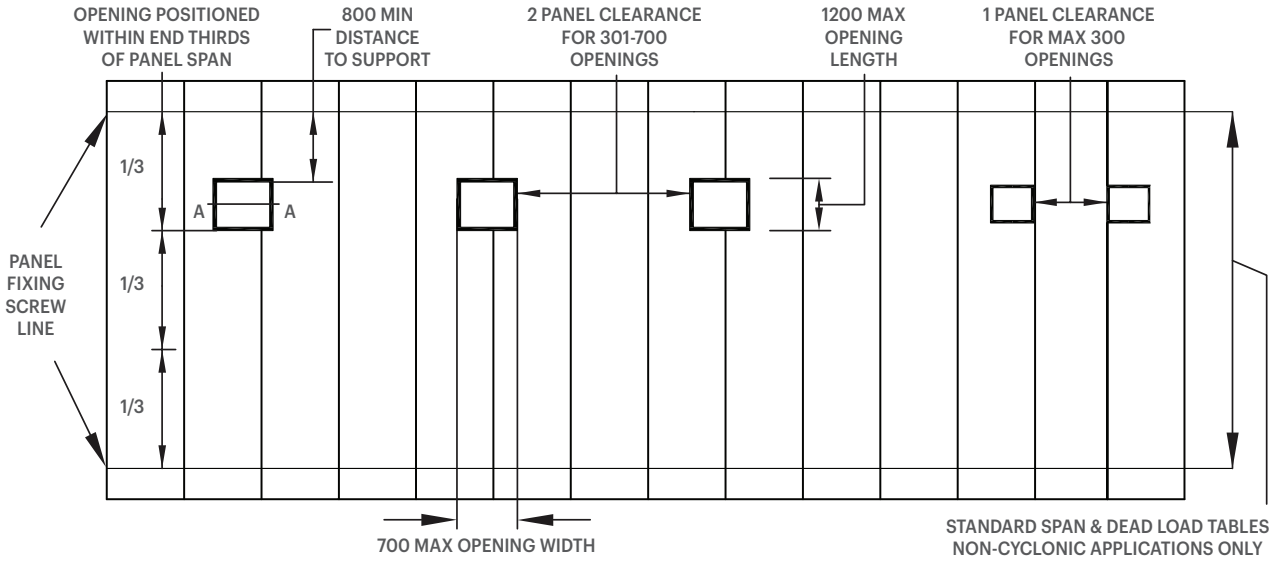
NON CYCLONIC ONLY
(FOR CYCLONIC CONTACT ARCPANEL)

As shown in the following details, the ARCPANEL Smartek roof panel can be installed from left to right (left hand) or right to left (right hand), this is normally determined prior to undertaking of the workshop drawings.

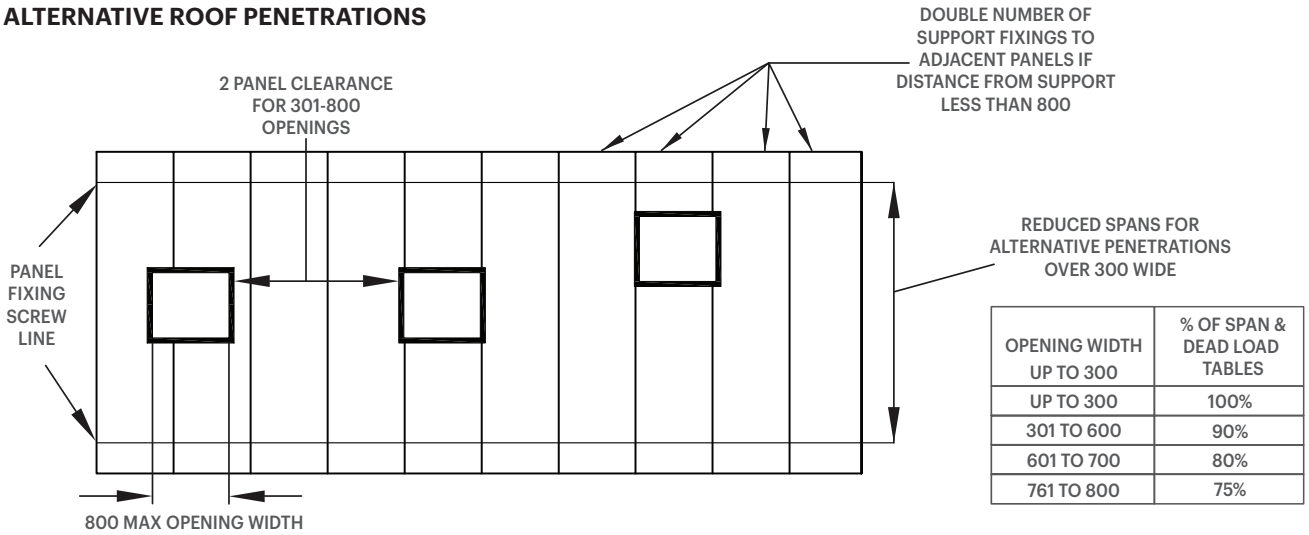
Should a specific installation direction be required please advise ARCPANEL at time of order. Direction of lap is determined by looking from the gutter end of the roof panel.

STANDARD ROOF PENETRATIONS - NOTE

If the (non-cyclonic) roof penetration is a maximum of 700mm wide by 1200mm long, and is positioned within the first third of the panel span, is 800mm minimum from the support, and has the continuous fully welded 2mm thick C-Channel, then the standard span tables apply.



ALTERNATIVE ROOF PENETRATIONS



OPENING WIDTH UP TO 300	% OF SPAN & DEAD LOAD TABLES
UP TO 300	100%
301 TO 600	90%
601 TO 700	80%
761 TO 800	75%

ALTERNATIVE ROOF PENETRATIONS NOTES

1. Openings up to 300mm wide - full span tables
2. Openings 301mm to 600mm wide - 90% of span tables
3. Openings 601 mm to 700rnm wide - 80% of span tables
4. Openings 701mm to 800mm wide - 75% of span tables
5. Superimposed dead load capacity is reduced by the equivalent percentages as above
6. Continuous welded 2mm C-Channel to be provided to perimeter of openings greater than 300mm width
7. Penetrations to be at least 800mm from the support OR where support fixing situation requires fixing every second crest; penetration can be within 800mm of support provided the adjacent whole panels each side to the penetration are provided with fixings to every crest.
8. A minimum of 2 whole panels to be provided between roof penetrations greater than 300mm;1 whole panel for openings of 300mm or less
9. When considering the racking capacity of the roof diaphragm; the project design engineer is to allow that roof penetrations with length more than 800mm will divide up the length of roof sections
10. Refer to ARCPANEL for any proposed penetrations outside the rules stated.

Version 2021. Always refer to local state building regulations and current safety requirements. Updated: 01/11/2022.

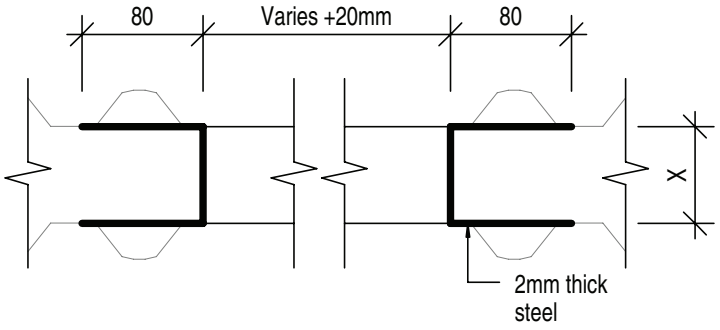
Roof Penetrations

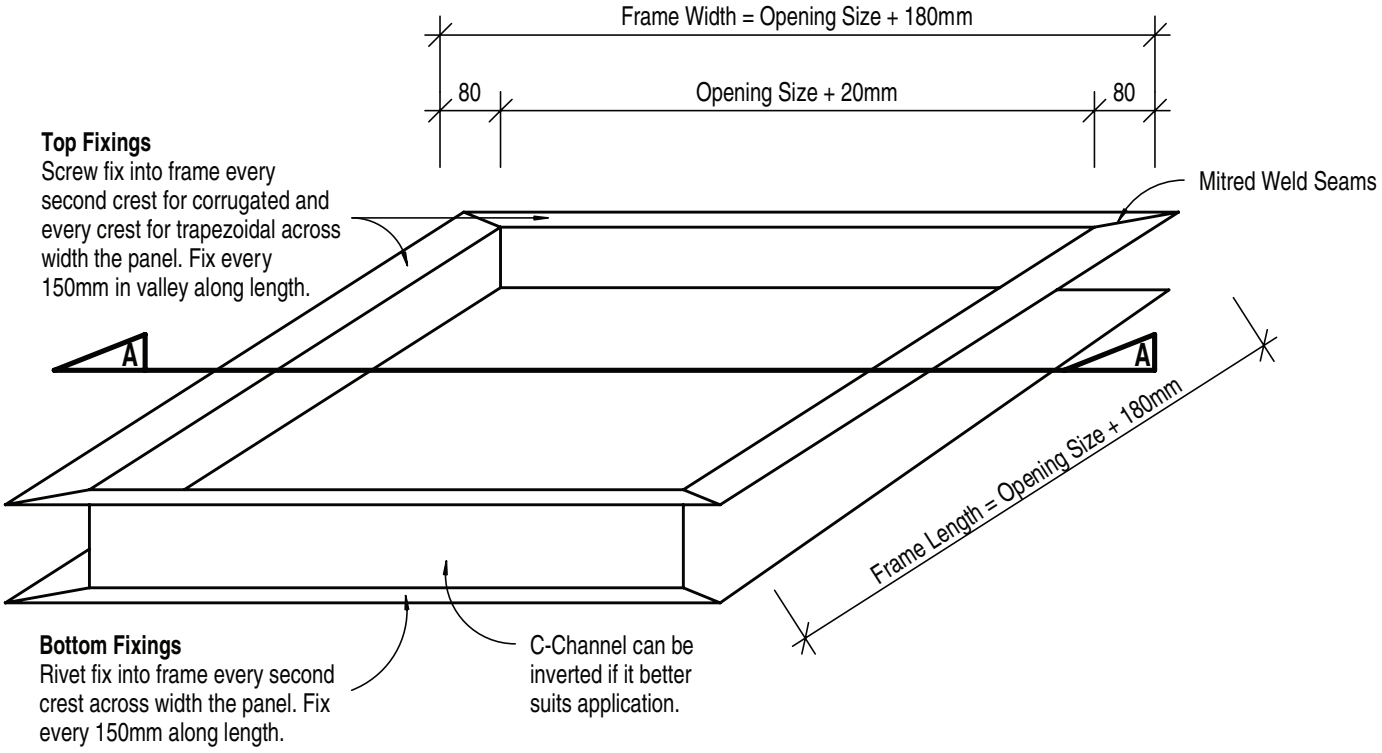
C-CHANNEL FRAME

C-Channel frame only required for openings greater than 300mm wide.

CONTINUOUS C-CHANNEL	TABLE 5
PANEL THICKNESS	**DIMENSION 'X'**
100mm	50mm
125mm	75mm
140mm	90mm
175mm	125mm
200mm	150mm

SECTION A





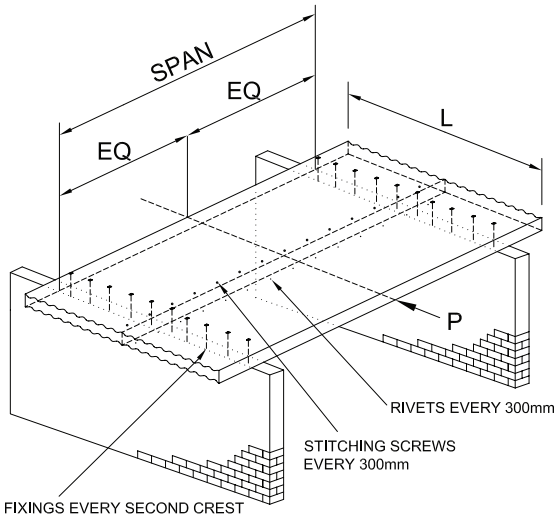
Top Fixings
Screw fix into frame every second crest for corrugated and every crest for trapezoidal across width the panel. Fix every 150mm in valley along length.

Bottom Fixings
Rivet fix into frame every second crest across width the panel. Fix every 150mm along length.

C-Channel can be inverted if it better suits application.

Technical Properties

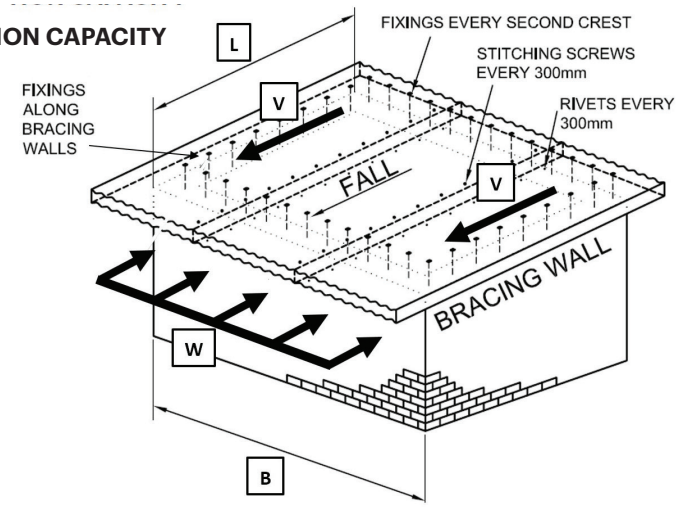
ROOF RACKING CAPACITY



RACKING CAPACITY KN (LIMIT STATE) (P)									TABLE 6
	Panel Span (H) mm								
PANEL THICKNESS 100 - 200mm	4800	5400	6000	6600	7200	7800	8400	9000	10000
1 Panel (L=700mm)	2	1.8	1.6	1.5	1.35	1.25	1.1	0.95	0.55
2 Panels (L=1400mm)	4.1	3.6	3.3	3	2.7	2.5	2.3	2.1	1.65
kN per m	2.7	2.4	2.1	1.95	1.8	1.6	1.5	1	1.2

Allowable lateral load (kN) Min length 700mm *Note: For straight, curved and multi-curved panels

ROOF DIAPHRAGM ACTION CAPACITY



W = Ultimate Limit state horizontal wind load applied by top of wall onto edge of roof

B = Length of wall between bracing walls (as per plan) in metres

L = Length of roof panel (in direction of horizontal force) which will transfer the shear force into the bracing walls - in metres

$V = \frac{W \times B}{2L} \leq 1.5$ kN/m (Ult)

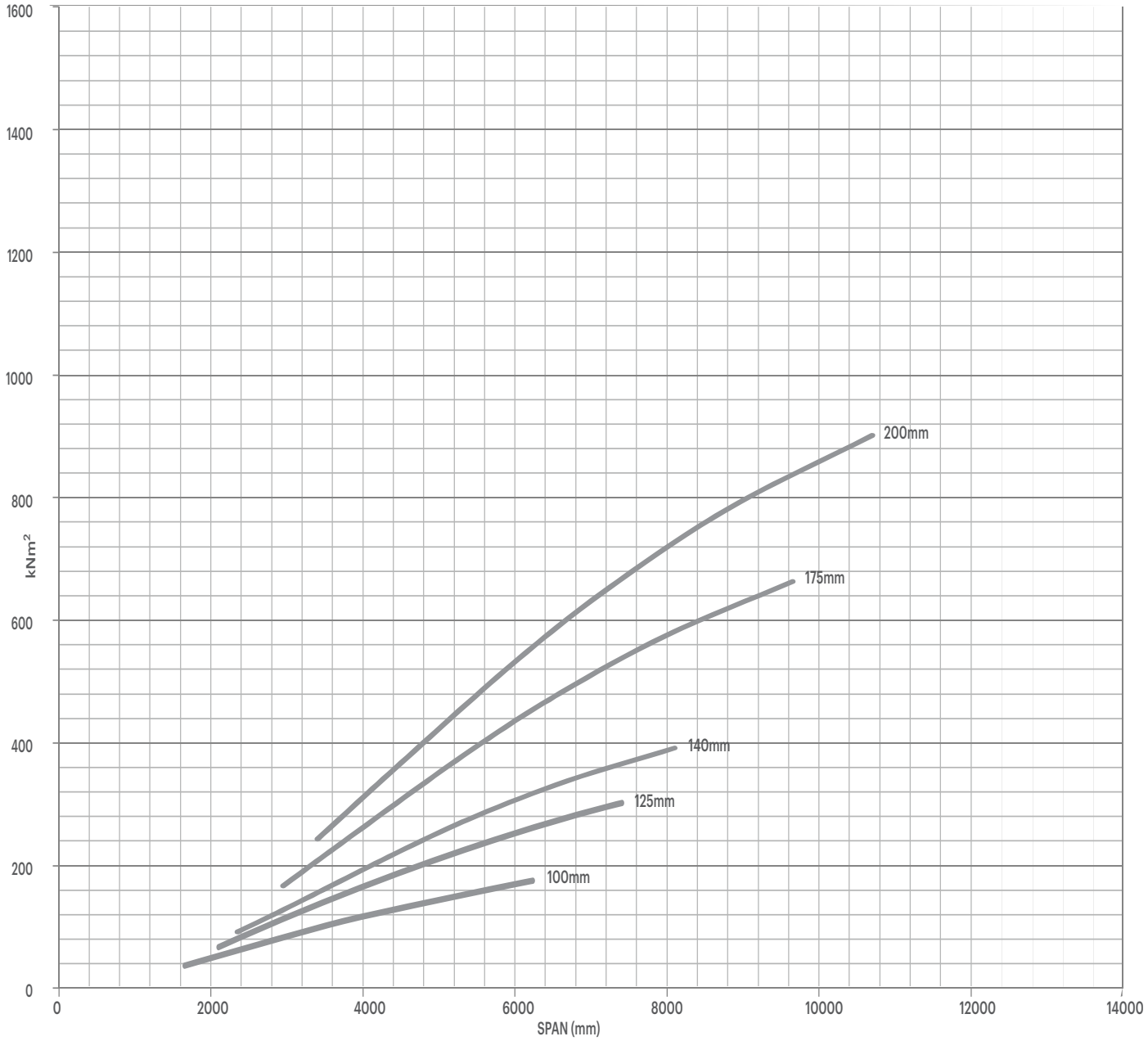
Minimum Fixings to Bracing Wall Structure

- Every second crest at load bearing supports (where panel is 90° to bracing wall)
- For V≤ 1.5kN/m fixings at 200mm centres along side edges of panel (where panel is parallel to bracing wall)
- For V≤ 3.0kN/m (Ult) fixings at 100mm centres along side edges of panel (where panel is parallel to bracing wall)

ARCPANEL roof diaphragm action assumes there is adequate structural connection through the full length of the building along supporting walls and beams, capable of resisting the resulting overall tension and compressive loads caused by any ARCPANEL roof diaphragm action, as would be normally required in a traditionally braced roof.

For values of V between 1.5 and 3.0 kN/m (Ult) it is recommended that a continuous steel RHS section or similar be used to provide the necessary overall tension / compression capacity.

STIFFNESS VS SPAN FOR VARYING PANEL THICKNESS PER 700mm WIDE PANEL



SMARTEK PANEL THICKNESS Vs STIFFNESS FOR VARYING SPANS (EI) PER 700mm WIDE PANEL — TABLE 7

100mm		125mm		140mm		175mm		200mm	
Span (mm)	EI	Span (mm)	EI	Span (mm)	EI	Span (m)	EI	Span (mm)	EI
1700	40	2100	67	2350	91	2950	166	3400	242
2150	54	2700	97	3100	136	3900	252	4500	366
2900	80	3750	151	4500	223	5400	385	6050	536
3300	94	4100	168	5500	280	6600	480	7350	661
4150	121	5000	211	6700	337	8000	574	8850	783
5100	148	6100	256	8100	390	9650	661	10700	899

Note: In accordance with AS1562.1 1992, AS4040 1992

Dead Load Information

WHAT IS CONSIDERED AS A DEAD LOAD?

A 'dead load' in relation to our roof system refers to any permanent loading or weight on the panels. Such examples are air conditioning units, solar panels, hung ceilings, ceiling fans etc. The below table show the maximum allowable distributed dead loads.

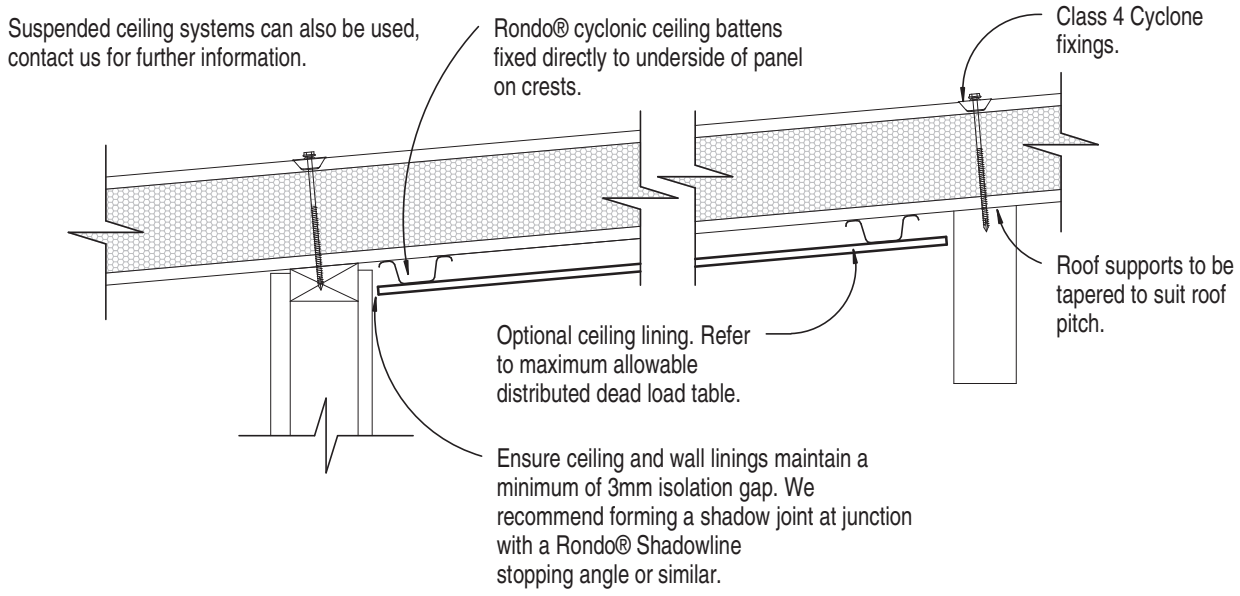
MAXIMUM ALLOWABLE DISTRIBUTED DEAD LOAD **TABLE 8**
KG/M^2 FOR INTERNAL SPANS (DEFLECTION < SPAN/300)

	PANEL THICKNESS - SMARTEK PANEL (TRAPEZOIDAL PROFILE)				
Span	**100**	**125**	**140**	**175**	**200**
<3M	**20**	**25**	**25**	**30**	**35**
3M - 6M	**15**	**20**	**20**	**25**	**25**
6M - 8M	**-**	**10**	**12.5**	**12.5**	**15**
8M - 10M	**-**	**-**	**-**	**-**	**10**

NOTES:

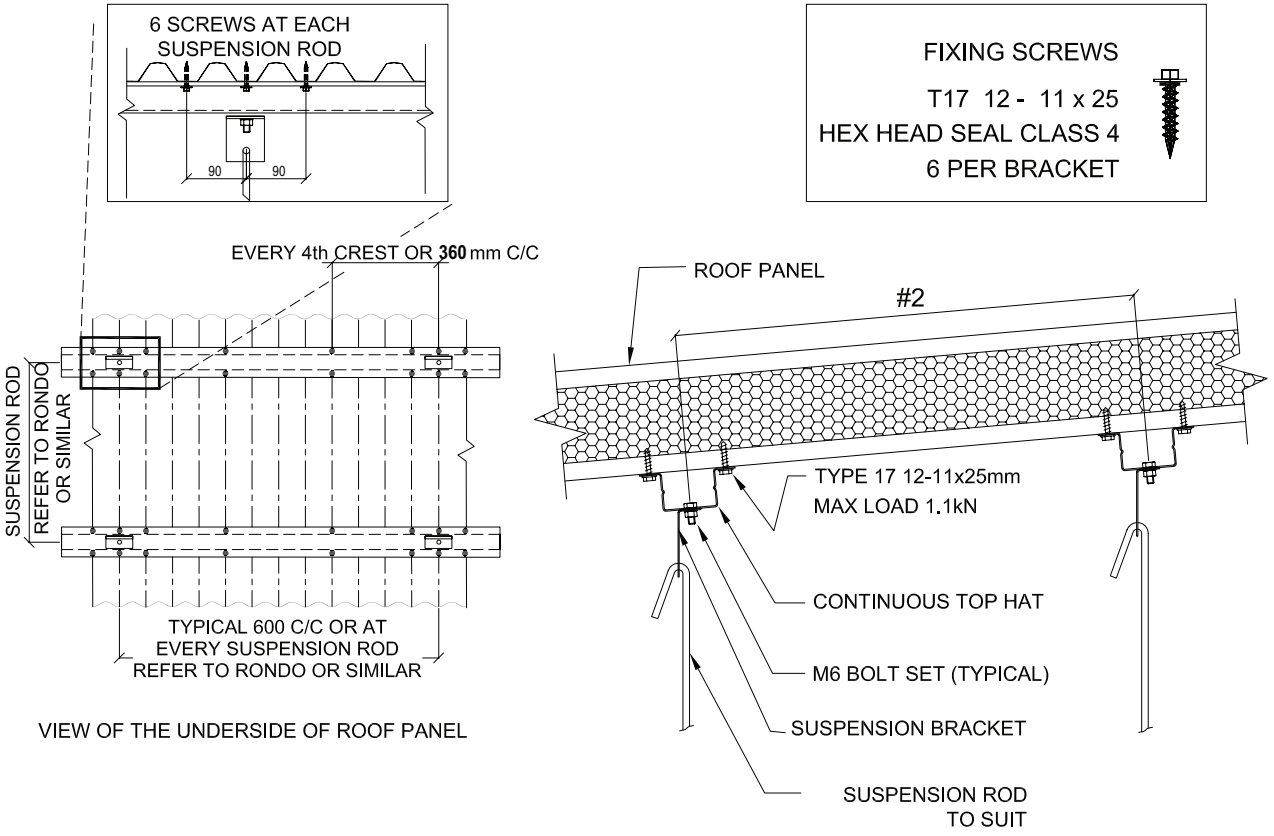
1) FOR DEAD LOAD REQUIREMENTS THAT EXCEED THE ABOVE CRITERIA, REFER TO ARCPANEL FOR SPECIFIC ENGINEERING ADVICE.
2) NO DEAD LOAD IS PERMITTED ON CANTILEVERS WITHOUT SPECIFIC WRITTEN APPROVAL FROM ARCPANEL.
3) THE ABOVE LOADS ARE UNFACTORED.

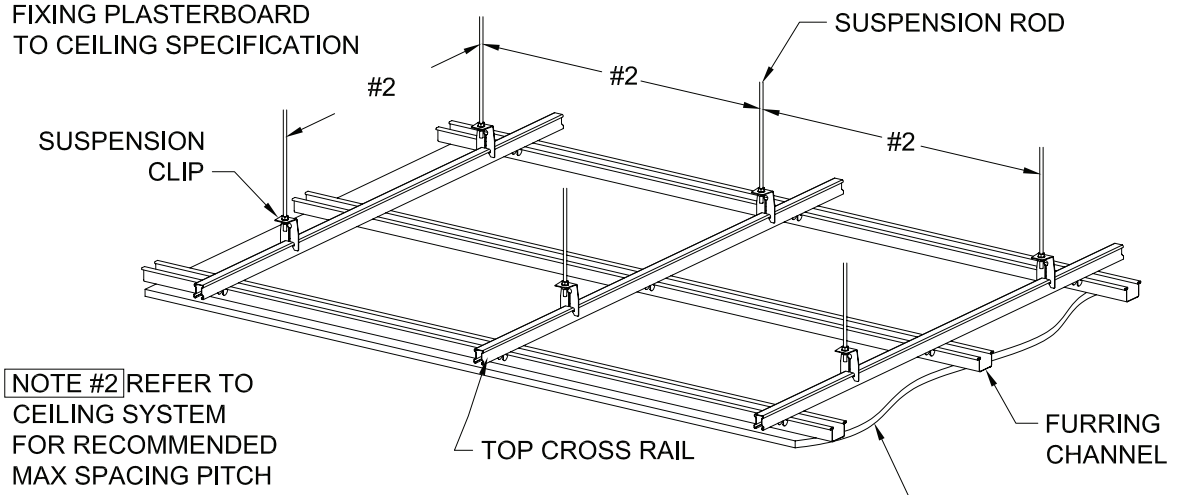
CEILING LINING OPTION



Suspended Ceiling Layout (Typical)

PANEL FIXING DETAILS (MAXIMUM ALLOWABLE DISTRIBUTED DEAD LOADS NOT TO BE EXCEEDED)





TYPICAL CEILING LAYOUT

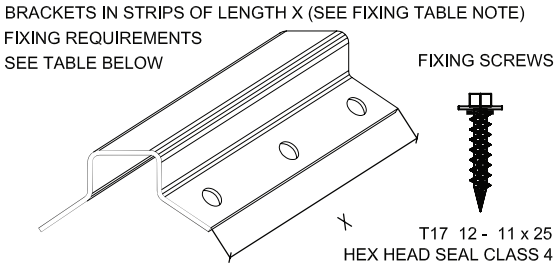
STANDARD SUSPENDED CEILING INSTALLATION (1.1kN per fixing)
(RONDO OR SIMILAR)

REFER TO CEILING SYSTEM TECHNICAL MANUAL FOR FURTHER INFORMATION

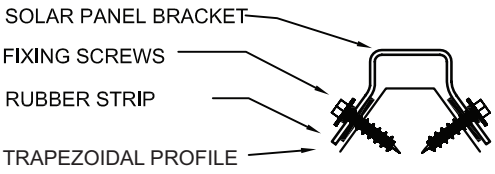
NOTE: FOR CEILING LOADS UP TO 1.56 kN PER FIXING CONTACT ARCPANEL

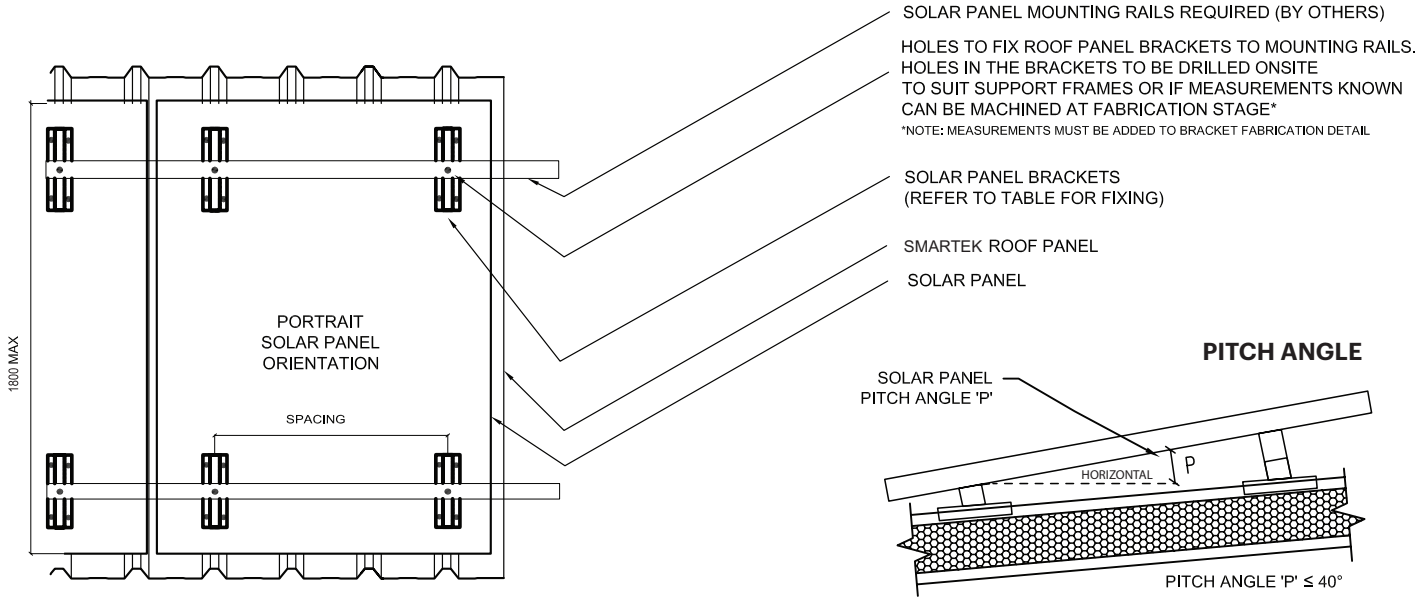
Solar Panel Accessory

SOLAR PANEL BRACKET AND FIXING REQUIREMENTS



BRACKET INSTALLATION



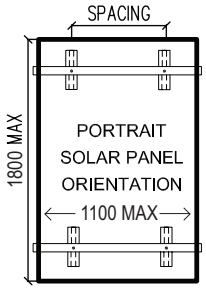


PITCH ANGLE

FIXING REQUIREMENTS

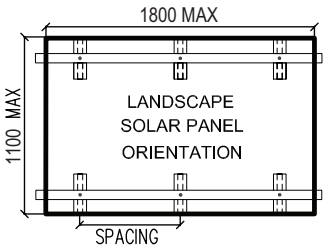
USING TYPE 17 12-11-25 CLASS 4 WITH SEAL

TABLE 9



TYPICAL PANEL ORIENTATION

Based on a 1800mm x 1100mm Panel
Individual panel lengths & widths may vary,
but no greater than 1.98m^2 (1800 x 1100).



PORTRAIT SOLAR PANEL ORIENTATION			
SOLAR PANEL FIXING			
WIND CLASS	LIMIT STATE DESIGN PRESSURE (kPa)	SPACING OF BRACKETS (mm)	SCREWS PER BRACKET
N2-W33	2.16	530	6
N3-W41	3.32	350	6
N4-W50	4.97	175	6
N5-W60	7.14	175	6

LANDSCAPE SOLAR PANEL ORIENTATION			
SOLAR PANEL FIXING			
WIND CLASS	LIMIT STATE DESIGN PRESSURE (kPa)	SPACING OF BRACKETS (mm)	SCREWS PER BRACKET
N2-W33	2.16	530	6
N3-W41	3.32	530	6
N4-W50	4.97	350	6
N5-W60	7.14	175	6

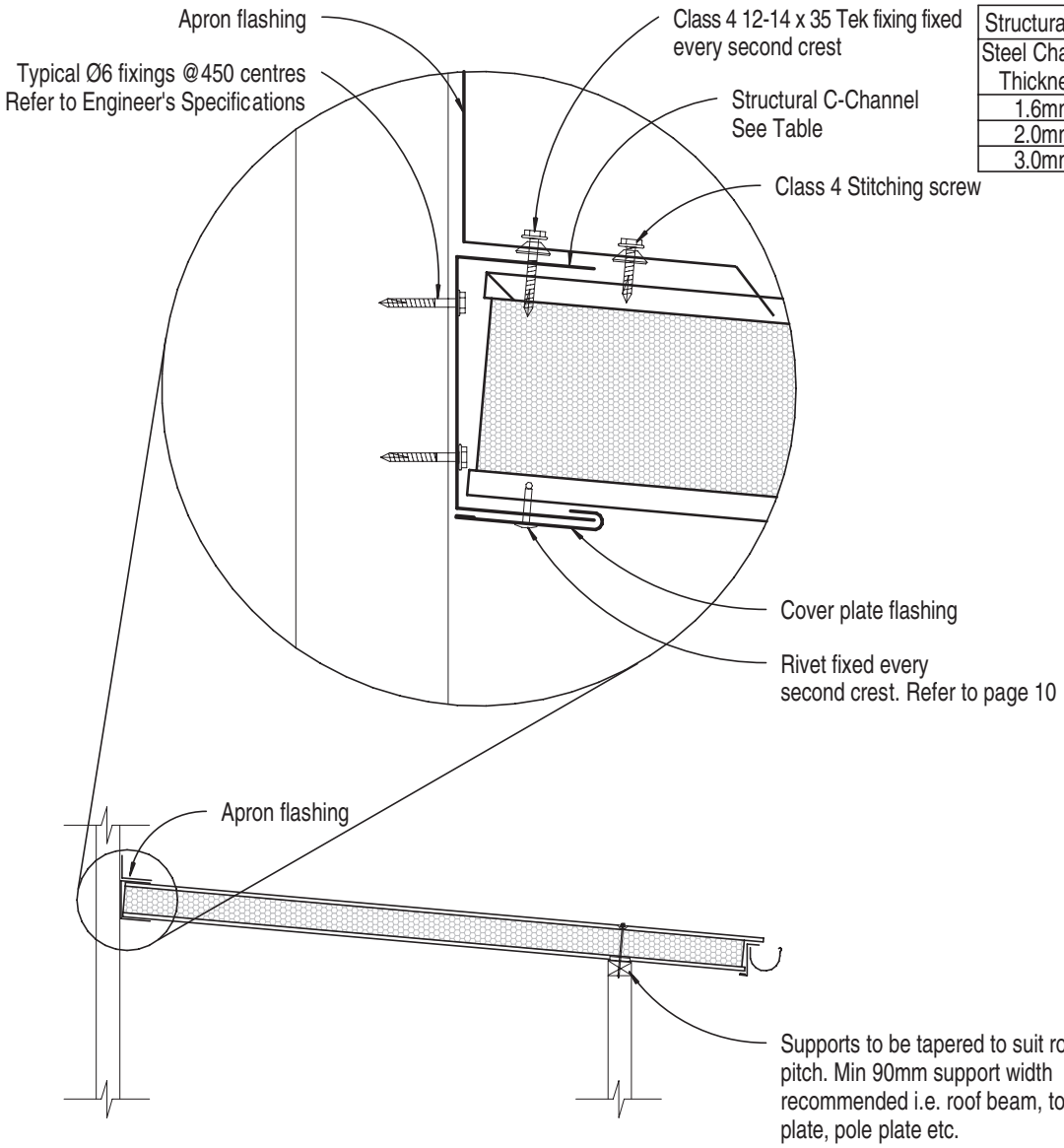
NOTE: 6 SCREW BRACKET = 200mm LONG, 10 SCREW BRACKET = 250mm LONG

FIXING TABLE APPLIES TO SOLAR PANELS UP TO 1800MM X 1100MM INSTALLED WITH RAILS DISTRIBUTING THE LOAD ACROSS NUMEROUS BRACKETS. FOR PANELS OUTSIDE THIS SPEC AND INSTALLATION METHOD, PROFESSIONAL CONSULTANTS ARE REQUIRED AND JOB SPECIFIC FIXING REQUIREMENTS SHOULD BE CALCULATED USING THE PULL OUT VALUE OF 260N/SCREW.

NOTE: THE DESIGN OF THE ROOF BRACKET SYSTEM FOR A SOLAR PANEL MOUNTING APPLICATION REQUIRES THE SERVICES OF PROFESSIONAL CONSULTANTS. THIS INFORMATION HAS BEEN PREPARED AS A SOURCE OF INFORMATION TO PROVIDE GENERAL GUIDANCE TO PROFESSIONAL CONSULTANTS AND NO WAY REPLACES THE SERVICES OF PROFESSIONAL CONSULTANTS. NO LIABILITY CAN THEREFORE BE ACCEPTED BY ARCHITECTURAL PANELS PTY LTD FOR ITS USE. WHEN PLACING OBJECTS ON ROOF: MAXIMUM DISTRIBUTED LIVE LOAD IS 0.25KPA AND REFER TO MAX ALLOWABLE DEAD LOADS ON PAGE 15. CERTIFIED BY TOD CONSULTING ENGINEERS 21/06/13

SKILLION ROOF SHOWING C-CHANNEL DETAIL

The Figure below shows a typical skillion roof using the C-Channel to support the panels at one end, also shown is the typical gutter and end capping details.



Structural C-Channel Selection	
Steel Channel Thickness	Max. Permissible Shear
1.6mm	2.5kN/m
2.0mm	5kN/m
3.0mm	11kN/m

EARLY FIRE HAZARD PROPERTIES AS/NZS 1530.3 — TABLE 10A

Ignitability Index	**0**	**Spread of Flame**	**0**	**Heat**	**0**	**Smoke**	**4**

SMARTEK ROOF PANEL - GROUP 1 MATERIAL in accordance with NCC specifications C1.10a — FIRE RATING AS 5637.1 / AS ISO 9705 — TABLE 10B

TABLE 1
WALL AND CEILING LINING MATERIALS (Materials Groups Permitted)

BCA Building	Fire Isolated Exits #2	Public Corridors #1		Specific Areas		Other Areas
Class	Wall/Ceiling	Wall	Ceiling	Wall	Ceiling	Wall/Ceiling
Class 2 & 3 Excluding accommodation for the aged, people with disabilities and children						
Unsprinklered	1	1,2	1,2	1,2,3	1,2,3	1,2,3
Sprinklered	1	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3
Class 3 & 9A Accommodation for the aged, people with disabilities and children, health-care buildings						
Unsprinklered	1	1	1	1,2	1,2	1,2,3
Sprinklered	1	1,2	1,2	1,2,3	1,2,3	1,2,3
Class 5, 6, 7, 8 & 9b Schools						
Unsprinklered	1	1,2	1,2	1,2,3	1,2	1,2,3
Sprinklered	1	1,2,3	1,2,3	1,2,3	1,2,3	1,2,3
Class 9b - other than Schools						
Unsprinklered	1	1	1	1,2	1,2	1,2,3
Sprinklered	1	1,2	1,2	1,2,3	1,2,3	1,2,3
Class 9c						
Sprinklered	1	1,2	1,2	1,2,3	1,2,3	1,2,3

AS 5637.1 / AS ISO 9705 FIRE PERFORMANCE

Test standards that relate to the NCC/BCA include ISO 9705-2003 to determine a materials Group Number:

FIRE PERFORMANCE

BCA Specification C1.10 requires assessment in accordance with AS 5637.1 and materials tested to AS ISO 9705-2003

Group Number Classification is in types as follows:

Group 4 - Product reaches flashover with in 2 mins.
Group 3 - Product reaches flashover after 2 mins and before 10 mins.
Group 2 - Product reaches flashover after 10 mins.
Group 1 - Product does not reach flashover during the test 20 mins.

Materials used for internal linings for walls and ceilings MUST be in accordance with AS 5637.1-2015 for BCA Volume 1 - Class 2 to Class 9 Buildings

NCC/BCA DEFINITIONS

#1. **Public Corridor** means an enclosed corridor, hallway or the like which -
- (a) serves as a means of egress from 2 or more sole-occupancy units to a required exit from the storey concerned; or
- (b) is required to be provided as a means of egress from any part of a storey to a required exit.

#2 **Exit means -**
- (a) Any, or any combination of the following if they provide egress to a road or open space -
  - (i) An internal or external stairway.
  - (ii) A ramp.
  - (iii) A fire-isolated passageway.
  - (iv) A doorway opening to a road or open-space.
- (b) A horizontal exit or a fire-isolated passageway leading to a horizontal exit.

Building In Bushfire Prone Areas

– BUSHFIRE ATTACK LEVEL (BAL)

BAL-40 CERTIFIED & COMPLIANT

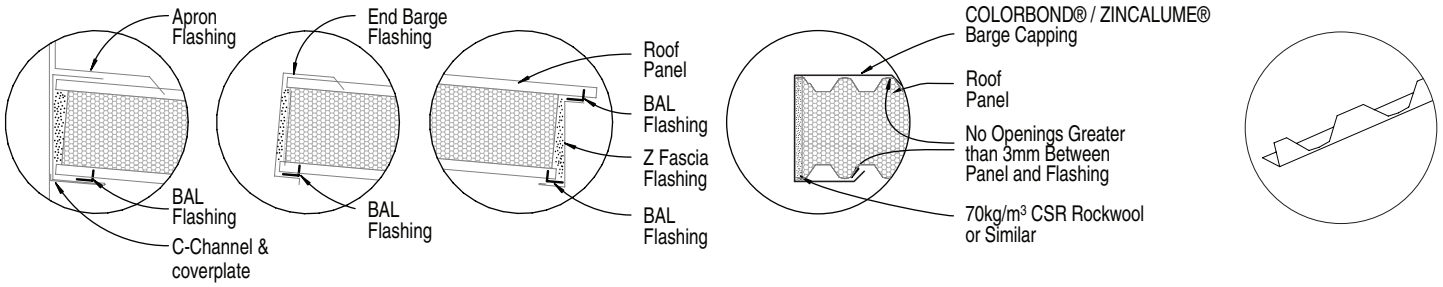
ARCPANEL Smartek Panel meets the requirements for buildings assessed in bushfire prone areas in accordance with section 2 AS 3959 - 2018 BAL-12.5 to BAL-29.

AS 3959-2018 determines that any residence situated less than 100m from unmanaged vegetation (including forests, woodlands, scrub, rainforests and shrubland) over one hectare in size, is deemed to be in a bushfire prone area and all new houses or alterations and additions must meet the Bushfire Attack Level (BAL) requirements.

BUSHFIRE ATTACK LEVEL (BAL) AS 3959 - 2018 — **TABLE 11**

Bushfire Attack Level (BAL)	Radiant heat exposure (AS 3959) and levels of exposure	Description of Predicted bushfire attack and levels of exposure	ARCPANEL Requirements
BAL - LOW	Insignificant	The risk is very low, radiant heat on the building is insignificant to warrant specific construction requirements, however ember attack may still occur.	Standard panel (EPS-FR Core) with no special consideration.
BAL - 12.5	0 to 12.5 kW/m2	Primarily risk of ember attack; risk of radiant heat is considered low.	Standard panel (EPS-FR Core) with special folded flashing to close all gaps >3mm to core. (Refer to page 47 & 48)
BAL – 19	12.5 to 19 kW/m2	Risk is considered moderate with increasing levels of ember attack and burning debris ignited by wind borne embers; increasing likelihood of exposure to radiant heat.
BAL – 29	19 to 29 kW/m2	Risk is considered to be high with increasing levels of ember attack and burning debris ignited by wind borne embers; increasing likelihood of exposure to radiant heat. borne embers; increasing likelihood of exposure to radiant heat.
BAL – 40	29 to 40 kW/m^2	Risk is considered to be very high. Increasing levels of ember attack and burning debris ignited by wind borne embers; increasing likelihood of exposure to radiant heat and some direct exposure to flames possible.borne embers; increasing likelihood of exposure to radiant
BAL – FZ	40 kW/m2plus (Flame Contact)	Risk is considered to be extreme. Direct exposure to flames from fire front is likely in addition to high levels of radiant heat exposure and ember attack.	No ARCPANEL product can achieve a BAL-FZ rating

END CAP BAL FLASHING DETAIL



Version 2021. Always refer to local state building regulations and current safety requirements. Updated: 01/11/2022.

ACOUSTIC PERFORMANCE — TABLE 12

INTRODUCTION

To predict the Sound Transmission Loss as an Rw value together with the correction for traffic noise Ctr which is also used for evaluation of aircraft noise intrusion. The Sound Transmission Loss and Ctr are required for the 100mm, 125 mm, 140 mm, 175 mm and 200 mm panel.

PRODUCT DESCRIPTION

A pre-fabricated insulated panel in a Spandex profile comprising steel sheeting which is bonded to both sides of a profile EPS core. The cover width of the sheet is 700 mm, the top sheet is COLORBOND® Ultra steel ZINCALUME® which is galvanised. The sheet material thickness is 0.42 BMT G550 steel. The bottom sheet is the same technical make up as the top sheet. The roof panel is supplied in thicknesses of 100 mm, 125 mm, 140 mm, 175 mm and 200 mm.

INFORMATION IN WHICH THE ASSESSMENT IS BASED

The assessment is based on acoustic laboratory testing of the Sound Transmission Loss carried out at the Lorient Acoustic Laboratories at Banyo. These tests were carried out in 2007.

Also studies have been made by this office of the vibration transmission through fire retardant polystyrene (EPS) and PIR panels of various thickness. Laminates either side of the insulation panel have included steel panel, fibrous cement sheeting and concrete panels. The findings of the vibration transmission tests have shown that the rigid insulation panels completely take over the acoustic dynamics of the system and dominate the performance irrespective of the thickness of the insulation. Whilst the thermal properties can significantly change as the thickness extends from 75 mm up to 250 mm the acoustic properties remain relatively constant and the overall acoustic performance of the laminates is dominated by the polystyrene foam core and as a result there are very small acoustic changes.

PREDICTED SOUND TRANSMISSION LOSS OF SMARTEK ROOF PANELS

100m Panel		125ml Panel		140mm Panel		175mm Panel		200mm Panel	
Rw	22	Rw	23	Rw	22	Rw	23	Rw	24
Ctr	-3	Ctr	-3	Ctr	-3	Ctr	-3	Ctr	-3
Rw+Ctr	19	Rw+Ctr	20	Rw+Ctr	20	Rw+Ctr	20	Rw+Ctr	21

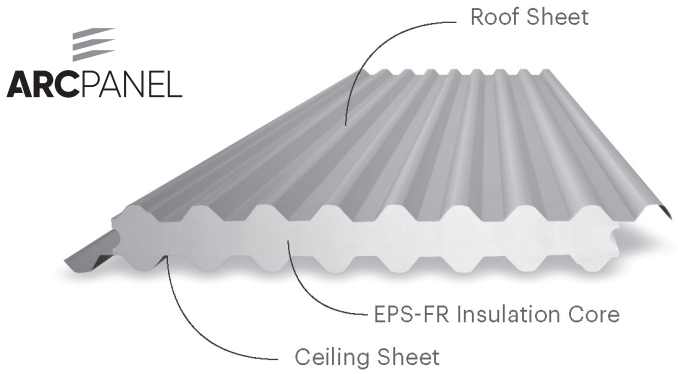
Peter R Knowland and Associates Pty Ltd T/A PKA Acoustic Consulting ABN. 73 001 594 583 ACN. 001 594 583
PO Box 345, Lane Cove, NSW, 1595 Tel: (612) 9460 6824 Fax: (612) 9460 6823 Email: admin@pka.com.au
Suite 12, 401 Pacific Highway, Artarmon, NSW, 2064
Member Firm of the Australian Association of Acoustical Consultants

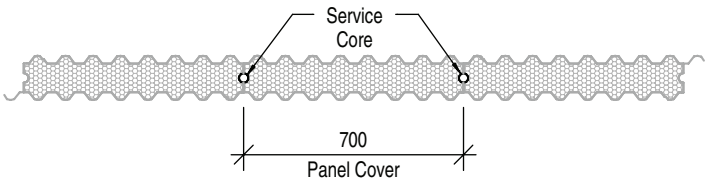
SERVICES

The ARCPANEL Smartek roof panels incorporate a service core at panel joints ie. @ 700 mm approx c/c. The core is 30 mm in diameter and runs the full length of the panel.

Electrical fixtures are best placed on panel joins where possible. It is advisable that the electrical contractor is present during the installation of the ARCPANEL Smartek roof panels.

- The electrical contractor can run wiring from supporting walls through service cores to the required outlets.
- The underside sheet of the ARCPANEL Smartek roof panels can be drilled or a circular opening cut for inlet or outle of wiring.
- Electrical fixtures that are not on the panel joints can be wired by drilling an opening or by pushing a heated rod sideways or use a long auger bit and drill into the polystyrene core to the required outlet.





ELECTRICAL WIRING, CABLE INSTALLATION AND COMPATIBILITY:

ARCPANEL insulated panels incorporate a service duct at panel joints. The service duct is typically 30mm diameter and runs the full length of the panels. It is recommended that the electrical contractor is present during the installation of the ARCPANEL roof panels.

ARCPANEL recommends cables are sheathed inside flexible conduits inside the service ducts. When cables are installed without conduits, it is recommended that cable types used do not contain PVC (plasticizers) and therefore do not exhibit any associated migration issues.

Certain groups of plasticizers used in the PVC compounds of traditional PVC/TPS cables are soluble in aromatic polymers and petroleum based products such as: styrene, polystyrene (EPS), polyurethane (PUR) and bituminized papers. The breakdown effect of migration is mainly long term, but can be exacerbated by the size of the surface contact area and cable loading.

Compatible Cables with Polystyrene (EPS) include LSOH, LSZH type cables providing environmental benefits: Examples = Nexans – Envirolex Flat, Prysmian - Afumex Cables

Derating due to completely surrounded insulation: The cable type (which ever used) may require to be de-rated to suit a “completely surrounded insulation” condition for the current-carrying capacity if there’s more than one circuit. The electrical engineer would specify the current loading and determine the de-rating based on the number circuits required for the installation, as per the cable standards AS/NZS 3008.1.1:2017 (AU) and AS/NZS 3008.1.2:2017 (NZ).

WIRING SYSTEM PROTECTION:

Depending on the panel thickness, there may be a requirement to provide protection against mechanical damage, as per AS/NZS 3000. Protection is required if the installed cable is concealed within 50mm of an accessible surface. Wiring systems must not be installed through any space formed between the panel and its immediate supporting member.

Where protection of a wiring system is required, the wiring system shall be (any one or more of the following): Provided with adequate mechanical protection to prevent damage; or Provided with an earthed metallic armouring, screen, covering or enclosure; or Protected by an RCD with a maximum rated operating residual current of 30 mA.

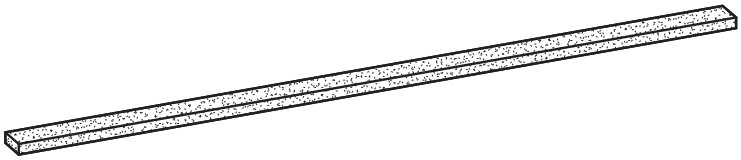
LOCATION OF FANS AND LIGHTING:

Locate fans and lights away from panel lap joint by drilling horizontally through the foam using a auger drill bit and then using the appropriate diameter metal-holesaw, drill through the underside of the steel sheet to required depth.

Accessory Information

OPEN-CELL FOAM INFILL STRIP (STANDARD)

Material: Open-Cell Foam Strip (Sticky-Back)
Size: 2000mm x 50mm x 30mm
Colour: Charcoal

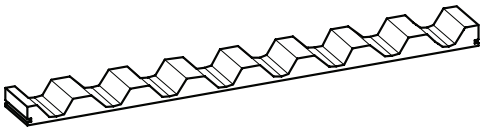


Where to use:

- Suitable for all external and internal support points not exposed to severe marine or aquatic conditions.
- Fit to the top of the wall frame or supporting member prior to the installation of the panel.
- Will fill any void between the support members and the roof corrugations.

CLOSED-CELL FOAM INFILL STRIP

Material: Closed-Cell Profiled Foam Strip (non Sticky-Back)
Size: 905mm x 50mm x 23mm
Colour: White



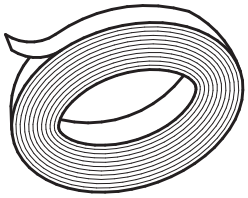
Where to use:

- Suitable for all external and internal support points exposed to severe marine or aquatic conditions
- Will fill any void between the support members and the roof corrugations.
- Fit to the top of the wall frame or supporting member prior to installation along the width of the panels

---

CLOSED-CELL FOAM TAPE

Material: Closed-Cell Foam Tape (Sticky-Back)
Size: 48mm x 3mm - 25m Roll
Colour: White

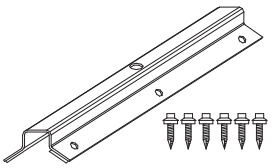


Where to use:

- Suitable for all external and internal support points running parallel along the length of panels. Use when panels are exposed to severe marine and aquatic conditions. Fit to the top of the wall frame or supporting member prior to installation of the panel.

SOLAR PANEL BRACKET KIT - SMARTEK PANEL

Material: Powder Coated Galvanised Steel
Size: 200mm x 1.6mm
Colour: Surfmist (Powder Coated)



Where to use:

- Refer to Solar Panel Bracket & Fixing Requirements on page 17

Accessory Information

CEILING MOUNTING KITS

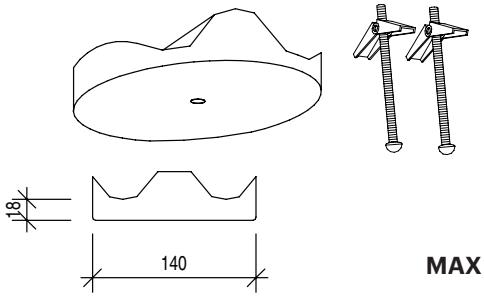
A profiled circular timber block is available to mount low voltage lights, pendant lights, ceiling fans etc. The timber block is supplied natural (unpainted), it will need to be painted or oiled on site to suit the ceiling colour. The mounting of the timber block is to be undertaken in the following method: for light weight lighting and fans (up to 20kg), two toggle bolts are used to secure the mounting block to the underside of the ceiling.For heavier items such as large ceiling fans and large pendant lighting (up to 40kg), the block is to be bolted through the panel from the top sheet into the block, using a standard roof screw T17 14-10, fitted with a cyclone plate, washer and seal.

CEILING MOUNTING KIT - 140MM

Material: Timber (Hardwood)
Size: 140mm - Diameter
Colour: Natural Timber

Where to use:

- Ideal for 90mm LED downlights
- Standard fan installations



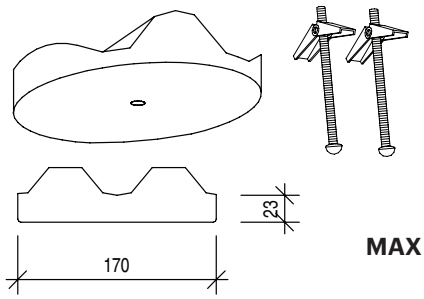
MAX LOAD = 20KG

CEILING MOUNTING KIT - 170MM

Material: Timber (Hardwood)
Size: 170mm - Diameter
Colour: Natural Timber

Where to use:

- Ideal for large fan installation
- Large light fittings



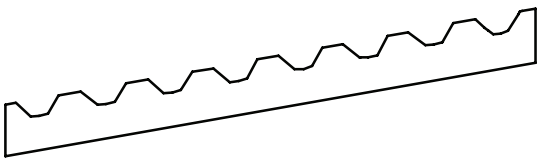
MAX LOAD = 20KG

CORRUGATED INFILL

Material: COLORBOND® steel
Size: 792mm x 80mm x 0.42mm (700mm cover)
Colour: COLORBOND® steel range

Where to use:

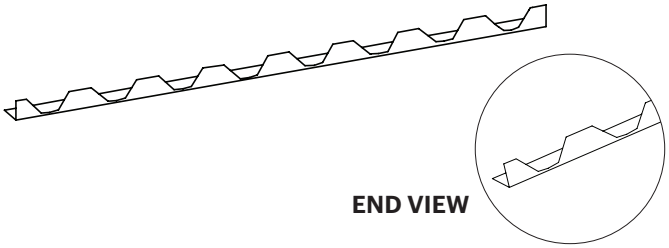
- The use of Corrugated Infill is required to fully seal wall/ soffit junctions.
- On internal / external walls or both. It is attached to the wall prior to installing the lining. It is used as a permanent barrier between the inside and outside. It is used on walls that run at 90 degrees to the run of the roof panels.



BAL INFILL

Available for all ARCPANELS's sheeting profiles.
Material: COLORBOND® steel
Size: 792mm x 80mm x 0.42mm (700mm cover)
Colour: COLORBOND® steel range

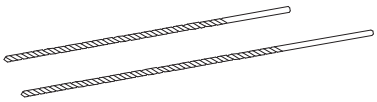
For all BAL-12.5, BAL-19 & BAL-29 applications refer to BAL detailing on pages 47-48.



END VIEW

DRILL BITS

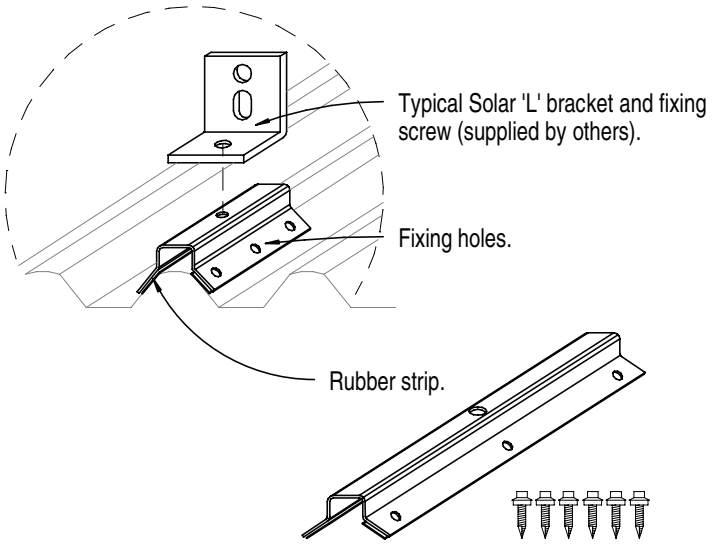
Material: Steel
Size: 250mm & 300mm
Colour: N/A



Accessory Information

SOLAR PANEL BRACKET KIT

Engineered Solar bracket kits are available from ARCPANEL to suit all profiles. The design of the roof bracket system for a solar panel mounting application requires the services of professional consultants. See Page 17 for more information.

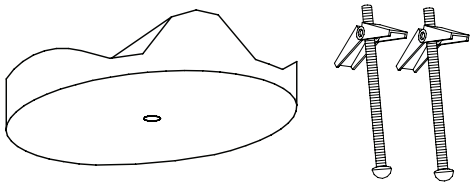


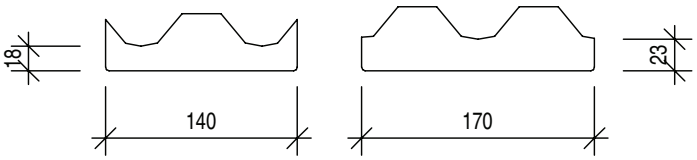
CEILING MOUNTING BLOCKS

Profiled circular timber blocks are available from ARCPANEL to mount downlights, pendant lights, ceiling fans, chandeliers etc. They are available in x2 sizes - Ø140mm & Ø170mm. The mounting blocks are supplied in natural finished timber. They can be painted or oiled to suit application.

Method of Install

- Light weight lighting and fans (up to 20kg), two toggle bolts are used to secure the mounting block to the underside of the ceiling.
- For heavier items such as large ceiling fans and large pendant lighting (up to 40kg) the block is to be bolted through the panel, using a standard T17 14-10 screw fitted with a cyclone plate, washer and seal.
- Sikaflex or similar applied to underside of mounting block.

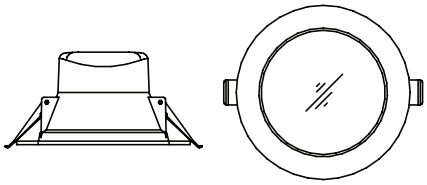




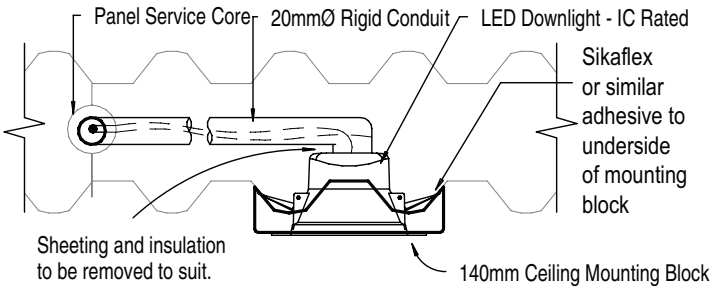
DOWNLIGHTS

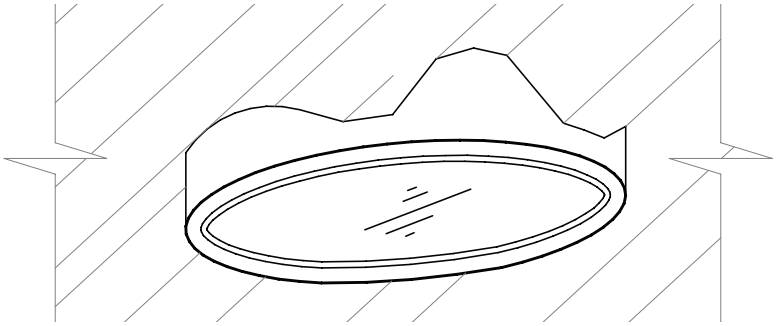
All electrical work is to be carried out by a licensed electrician to the relevant Australian Standards. Downlights installed in ARCPANEL products need to be LED, IC Rated - abutted & covered. We recommend any IC Rated LED downlight with an integrated driver. The 140mm ceiling mounting block is ideal for standard size downlights. Install lighting as per light manufacturers specifications.

LED DOWNLIGHT - IC RATED - WITH INTEGRATED DRIVER

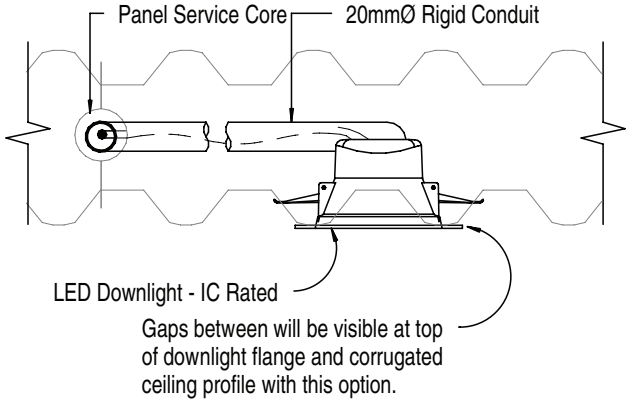


DOWNLIGHT INSTALLED WITH CEILING MOUNTING BLOCK





ALTERNATIVE OPTION
- DOWNLIGHT INSTALLED DIRECTLY ON PANEL



Version 2021. Always refer to local state building regulations and current safety requirements. Updated: 01/11/2022.

NCC Product Certification

Arcpanel roofing systems conform to the NCC and meet specific performance requirements for the building application. As insulated sandwich panels are not presented in the NCC as a deemed to satisfy solution, a performance solution report may be required for the building application. The performance solution report is prepared by the building designer, architect or engineer. Arcpanel provides the required supporting evidence with evaluation reports, certifications and test certificates as outlined below:

NCC - Volume One	Class 2 to 9 Buildings (Multi-residential, commercial, industrial, and public assembly buildings) and their associated structures Roofing: NCC Construction Type B & C Only Walling: NCC Construction Type C Only
Performance requirement(s):	
BP 1.1(a) & b(i), (ii), (iii), (iv), (v) (viii), (x), (xi) & (xii)	Structural reliability and resistance to actions
Deemed-to-Satisfy Provision(s):	
C1.10(a)(ii)&(ix)	Fire Hazard Properties – Ceiling Linings (AS 5637.1) Group 1 (AS ISO 9705)
F1.5(d)	Damp & Weatherproofing – Roof Coverings
J1.2 (a)	Thermal Construction - General
J1.3	Roof and Ceiling Construction. Can be used in conjunction with other building elements to achieve Total R Value.
GP5.1	Bushfire Areas up to BAL-40 (AS 3959)
State or Territory variation(s): Not applicable	
NCC - Volume Two	Class 1 & 10a Buildings (Residential and non-habitable buildings and structures)
Performance requirement(s):	
P2.1.1(a) & (b) (i), (ii), (iii), (viii), (xi) & (xii)	Structural reliability and resistance to actions
P2.2.2	Damp & Weatherproofing - Roof Coverings
Deemed-to-Satisfy Provision(s):	
3.12.1.1(a)	Building fabric - Refer to R Values
3.12.1.2(a)	Roofs - Refer to R Values
P2.7.5	Bushfire Areas up to BAL-40 (AS 3959)
State or Territory variation(s): Part 3.12 (NSW, NT, SA, QLD, TAS, ACT	Note: Carports must comply with Part 3.7.2.5 (a)

FIRE RATING AS ISO 9705 - GROUP 1

BRANZ

Fire Test Certificate

This is to certify that the specimen described below has been examined by BRANZ Ltd on behalf of

Architectural Panels Pty Ltd (trading as ARCPANEL)
42 Dacmar Road
Coolum Beach
QLD 4573
Australia

Test standard: AS ISO 9705, AS 5637.1:2015

Specimen name: ARCPANEL, Smartek Roofing Systems

Specimen description:

Smartek: trapezoidal style sheet steel facings.

The steel sheet facings are 0.42 mm BMT steel encapsulating a 250 mm thick or less fire retardant (EPS-FR) core. Sheet facings may be Colorbond®, Zincalume® or steel roof sheeting of no less than 0.42 mm BMT and with a coating no greater than 10 µm backing coat and primer, and 27 µm finish coat and primer. There is a steel end cap and Colorbond® 'Z' fascia.

Orientation: N/A

A full description of the test specimen and the test results are given in BRANZ Test Reports and Assessments:

BRANZ Assessment Report FAR 4294 Issue 3

Conditions of laboratory registration by IANZ do not allow assessments by the Registered Laboratory to be covered by IANZ.

Regulatory authorities are advised to examine test reports before approving any product.

The assessed results were as follows:

Building Code Document	Group Number Classification
NCC Volume One Specification C1.10 Clause 4 determined in accordance with AS 5637.1:2015	1 The SMOGRA was not more than the 100 m²/s² x 100 limit

Certificate issued: 12 August 2021 **Certificate Number:** 670 Issue 2

S. Whatham
Fire Testing Engineer
For BRANZ Limited

IANZ ACCREDITED LABORATORY ACCREDITATION Nº: 37

This Laboratory is accredited by International Accreditation New Zealand (IANZ). The tests reported herein have been performed in accordance with the laboratory's scope of accreditation.

The National Association of Testing Authorities (NATA) and International Accreditation New Zealand (IANZ) are both signatories of the ILAC Mutual Recognition Agreement.

ilac-MRA

The following statement is required by the test standard *"This certificate is provided for general information only and does not comply with the regulatory requirements for evidence of compliance."*

FIRE RATING AS 3959 - 2018 BAL-12.5 TO BAL-29

BRANZ

Fire Test Certificate

This is to certify that the specimen described below has been examined by BRANZ Ltd on behalf of

Architectural Panels Pty Ltd (trading as ARCPANEL)
42 Dacmar Road
Coolum Beach
QLD 4573
Australia

Test standard: AS 3959-2018 (Amdt 1 and 2)

Specimen name: ARCPANEL, Smartek Roofing Systems

Specimen description:

Smartek: trapezoidal style sheet steel facings.

The steel sheet facings are 0.42 mm BMT steel encapsulating a 250 mm thick or less fire retardant (EPS-FR) core. Sheet facings may be Colorbond®, Zincalume® or steel roof sheeting of no less than 0.42 mm BMT and with a coating no greater than 10 µm backing coat and primer, and 27 µm finish coat and primer. There is a steel end cap and Colorbond® 'Z' fascia.

Orientation: External surface exposure to BAL 12.5 to BAL 29 and BAL 40 conditions

A full description of the test specimen and the test results are given in BRANZ Test Reports and Assessments:

BRANZ Assessment Report FAR 4228 Issue 3

Conditions of laboratory registration by IANZ do not allow assessments by the Registered Laboratory to be covered by IANZ.

Regulatory authorities are advised to examine test reports before approving any product.

The assessed results were as follows:

BAL 12.5 to BAL 29 and BAL 40 rating in accordance with AS 3959-2018 (Amdt 1 and 2)

Certificate issued: 4 June 2021 **Certificate Number:** 669 Issue 2

S. Whatham
Fire Testing Engineer
For BRANZ Limited

IANZ ACCREDITED LABORATORY ACCREDITATION No: 37

This Laboratory is accredited by International Accreditation New Zealand (IANZ). The tests reported herein have been performed in accordance with the laboratory's scope of accreditation.

The National Association of Testing Authorities (NATA) and International Accreditation New Zealand (IANZ) are both signatories of the ILAC Mutual Recognition Agreement.

ilac-MRA

The following statement is required by the test standard *"This certificate is provided for general information only and does not comply with the regulatory requirements for evidence of compliance."*

FIRE RATING AS 1530.3: 1999

BRANZ

Fire Test Certificate

This is to certify that the specimen described below has been examined by BRANZ Ltd on behalf of

Architectural Panels Pty Ltd (trading as ARCPANEL)
16 Action Street
Noosaville
QLD 4566
Australia

Test standard: AS 1530.3: 1999

Specimen name: ARCPANEL, Smartek Roofing Systems

Specimen description:

Smartek: trapezoidal style sheet steel facings.

The steel sheet facings are 0.42 mm BMT steel encapsulating a 250 mm thick or less fire retardant (EPS-FR) core. Sheet facings may be Colorbond®, Zincalume® or steel roof sheeting of no less than 0.42 mm BMT and with a coating no greater than 10 µm backing coat and primer, and 27 µm finish coat and primer. There is a steel end cap and Colorbond® 'Z' fascia.

Orientation: N/A

A full description of the test specimen and the test results are given in BRANZ Test Reports and Assessments:

BRANZ Assessment Report FAR 4313 Issue 2

Conditions of laboratory registration by IANZ do not allow assessments by the Registered Laboratory to be covered by IANZ.

Regulatory authorities are advised to examine test reports before approving any product.

The assessed results were as follows:

AS 1530.3 Indices for ARCPANEL Smartek Panel

Ignitability Index	0
Spread of Flame Index	0
Heat Evolved Index	0
Smoke Developed Index	4

Certificate issued: 14 March 2019 **Certificate Number:** 672

S. Whatham
Fire Testing Engineer
For BRANZ Limited

IANZ ACCREDITED LABORATORY ACCREDITATION Nº: 37

This Laboratory is accredited by International Accreditation New Zealand (IANZ). The tests reported herein have been performed in accordance with the laboratory's scope of accreditation.

The National Association of Testing Authorities (NATA) and International Accreditation New Zealand (IANZ) are both signatories of the ILAC Mutual Recognition Agreement.

ilac-MRA

The following statement is required by the test standard *"This certificate is provided for general information only and does not comply with the regulatory requirements for evidence of compliance."*

STRUCTURAL DESIGN COMPLIANCE CERTIFICATION NC/BCA

Compliance Certificate
for Building Design or Specification

ARCPANEL

TOD CONSULTING JOB NO: 06665-20220115S

SMARTEK PANEL

Description of component/s certified
Clearly describe the extent of work covered by this certificate, e.g. all structural aspects of the steel roof beams.

ARCPANEL Smartek Roof Panel
Prefabricated roof panel with standard Stratco Smartspan roof sheeting, bonded both sides of a profiled EPS core.
Panels fixed into position using the specified screws (Class 4 with Cyclone Assembly Washers)
For the Non-Cyclonic range of wind loads, spans and fixing spacings nominated in the ARCPANEL Smartek Panel Design, Detailing and Installation Guide Version 2021.
Contact ARCPANEL 1300 200 004 to design and certify projects with wind loads, spans and fixing spacings beyond the range nominated in the ARCPANEL Smartek Panel Design, Detailing and Installation Guide Version 2021].

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.

AS1170.0:2002 – Structural Design Actions Part 0: General principles
AS1170.1:2002 – Structural Design Actions Part 1: Permanent, imposed and other actions. Trafficability: Panels meet the requirements for live and concentrated imposed loads for roofs not accessible except for normal maintenance as per AS1170.1:2002
AS1170.2:2021 – Structural Design Actions Part 2: Wind Actions
AS1170.3:2003 – Structural Design Actions Part 3: Snow and Ice Actions
AS1170.4:2007 – Structural Design Actions Part 4: Earthquake
AS1562.1:2018 – Design and installation of sheet roof and wall cladding Part 1: Metal
AS4055:2012 – Wind Loads for Housing
NCC/BCA 2019 Vol 1: BP1.1 (a); (b) (i) Dead Load, (ii) Imposed Load, (iii) Wind Load, (iv) Earthquake, (v) Snow Action, (viii) Ponding, (x) Differential, (xi) Creep/Shrinkage, (xii) Thermal; and B1.2 Low – High – Low cyclonic testing requirements **NCC/BCA 2019 Vol 2:** P2.1.1 (a); (b) (i) Dead Load, (ii) Imposed Load, (iii) Wind Load, (iv) Earthquake, (v) Snow Action, (viii) Ponding, (x) Differential, (xi) Creep/Shrinkage, (xii) Thermal

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

Refer to ARCPANEL Smartek Roof Panel Design, Detailing and Installation Guide Version 2021 for technical design and installation specifications.

Competent person details
A competent person for building work, means a person who is assessed by the building certifier for the work as competent to practice in an aspect of the building and specification design, of the building work because of the individual's skill, experience and qualifications in the aspect. The competent person must also be registered or licensed under a law applying in the State to practice the aspect.

If no relevant law requires the individual to be licensed or registered to be able to give the help, the certifier must assess the individual as having appropriate experience, qualifications or skills to be able to give the help.

If the chief executive issues any guidelines for assessing a competent person, the building certifier must use the guidelines when assessing the person.

Name (in full)
Hamish Gray – B.Eng, R.P.E.Q, M.I.E. Aust

Company name if applicable
Tod Consulting Pty Ltd

Contact person

Phone no. (business hours)
07 5449 9600

Mobile no.

Fax no.
07 5449 9494

Email address
hg@todconsulting.com

Postal address
PO Box 61
NOOSAVILLE QLD **Postcode** 4566

Licence or registration number (if applicable)
R.P.E.Q. 18877

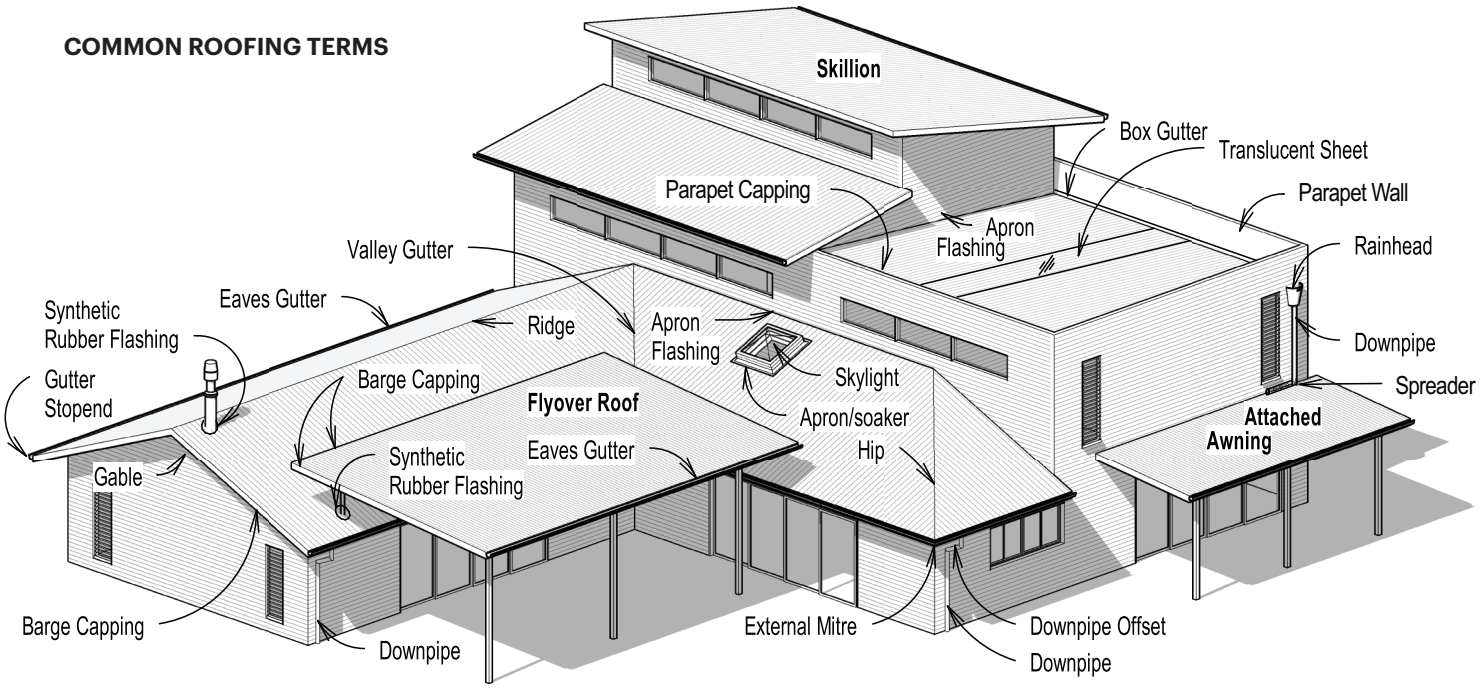
Signature of competent person
This certificate must be signed by the individual assessed by the building certifier as competent.

Signature

Date
28/09/2021

Contents

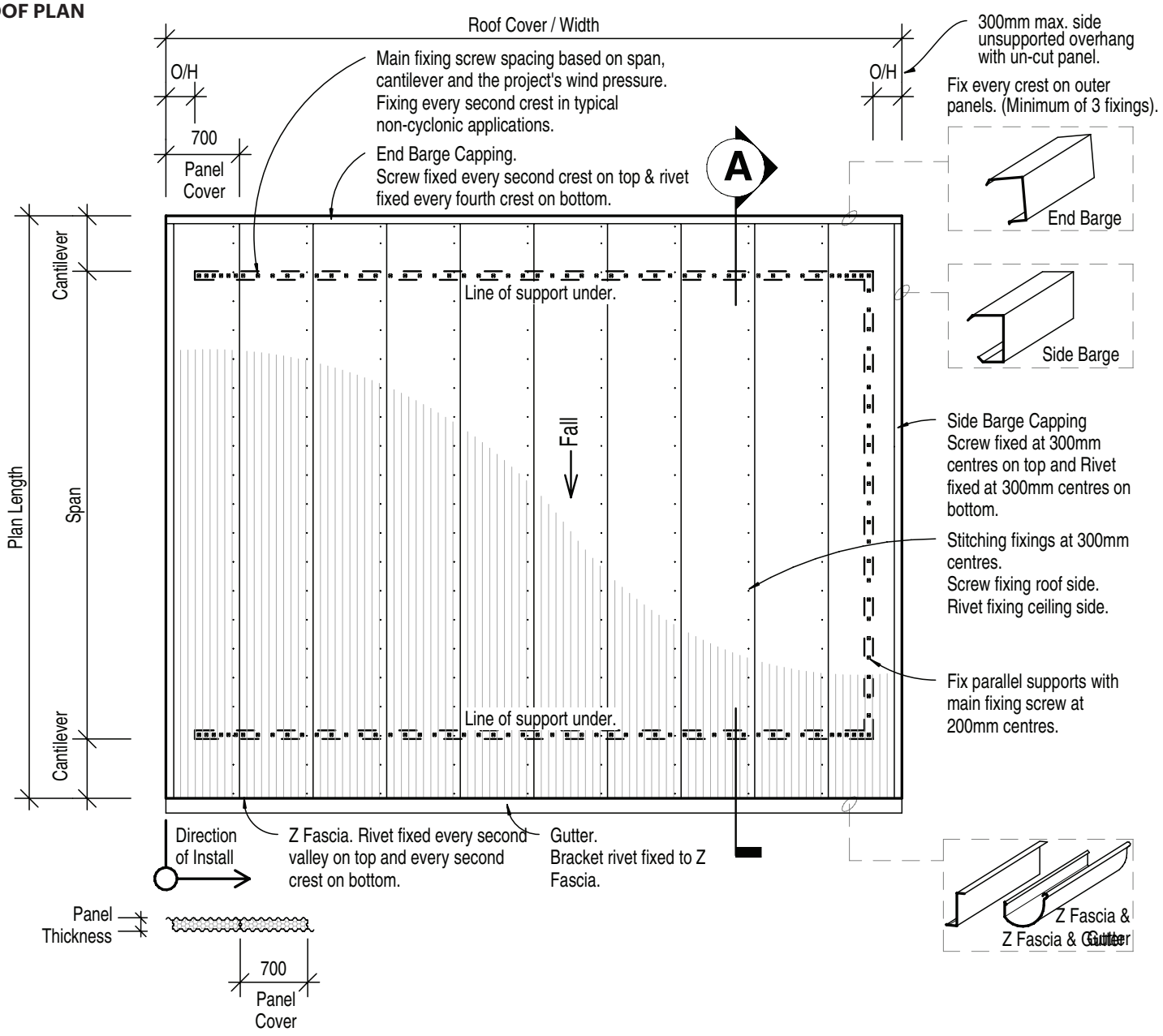
COMMON ROOFING TERMS



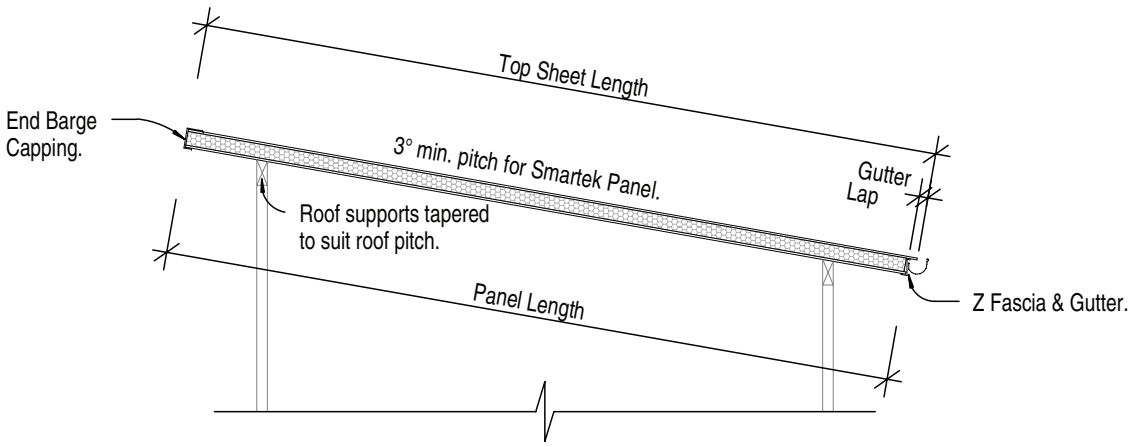
Typical Roof Detail

The figure below shows a standard skillion roof - including fixings, flashings and rainwater goods.

ROOF PLAN



SECTION A

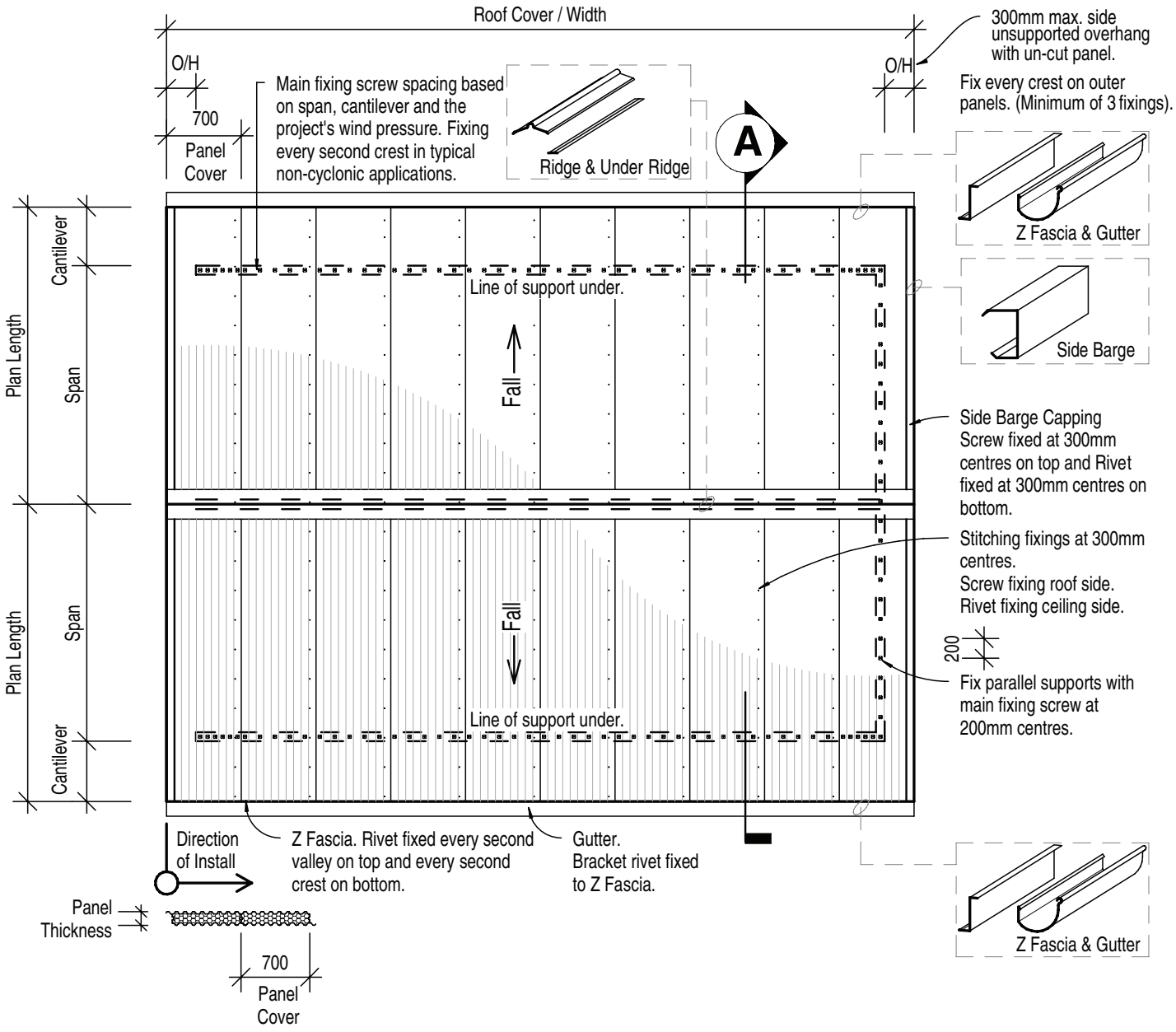


Version 2021. Always refer to local state building regulations and current safety requirements. Updated: 01/11/2022.

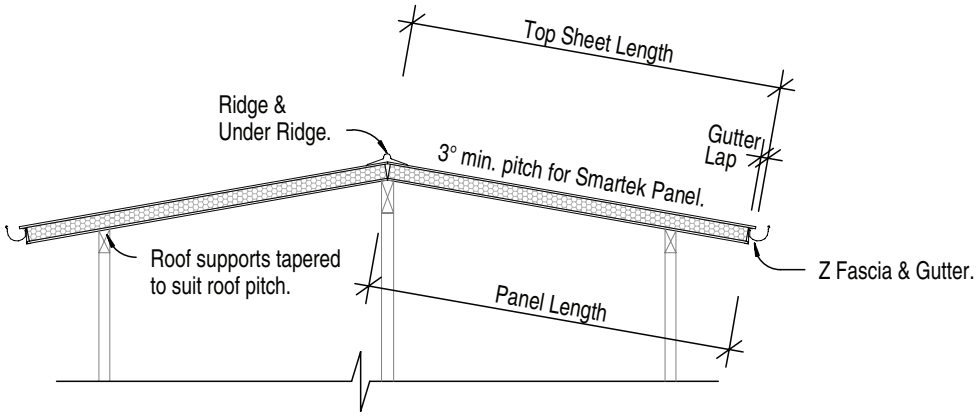
TYPICAL GABLE ROOF

The Figure below shows standard components used in constructing a gable end ARCPANEL Custom roof panel, this includes hold down positions, stitching screws and rainwater goods.

ROOF PLAN



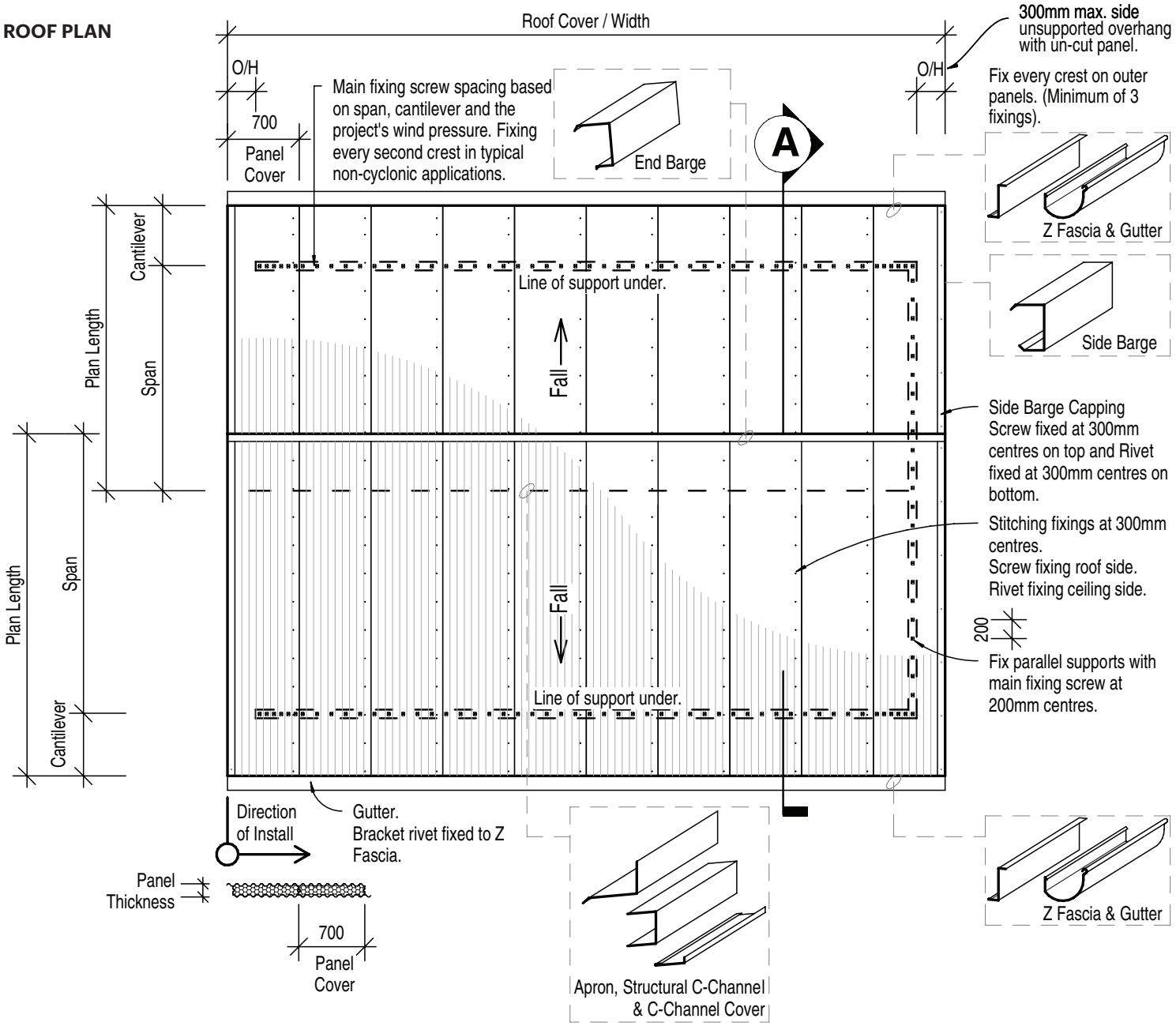
SECTION A



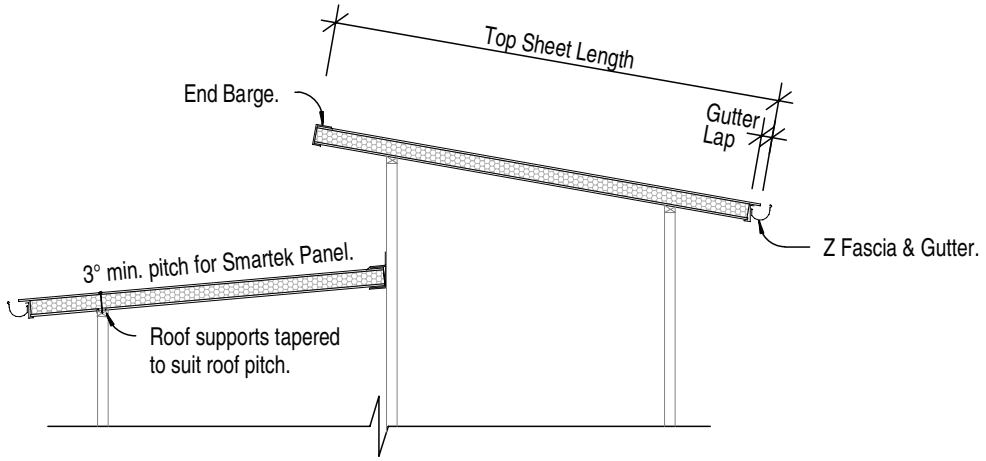
TYPICAL CLERESTORY ROOF

The figure below shows standard components used in constructing a skillion roof using the ARCPANEL Custom roof panel, this includes hold down positions, stitching screws and rainwater goods.

ROOF PLAN



SECTION A

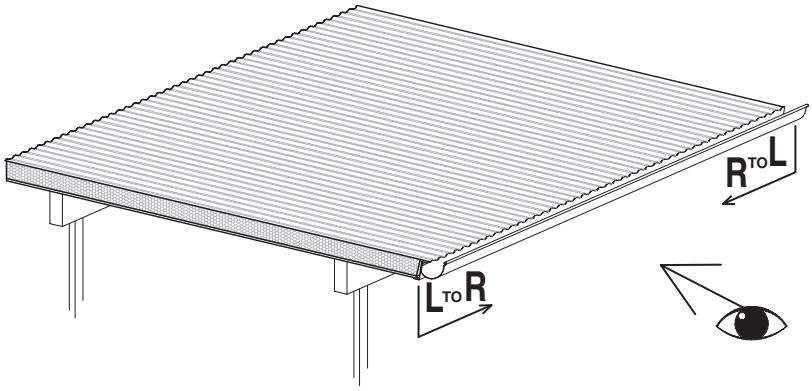


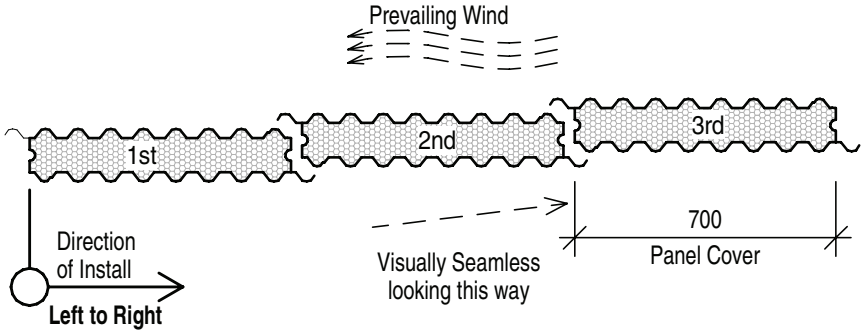
Panel Configuration

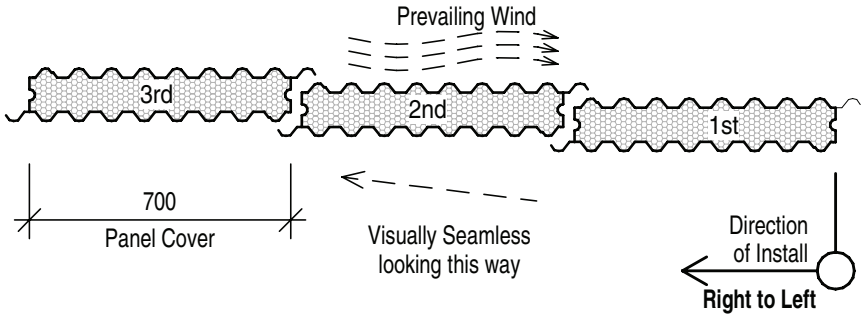
DIRECTION OF INSTALLATION

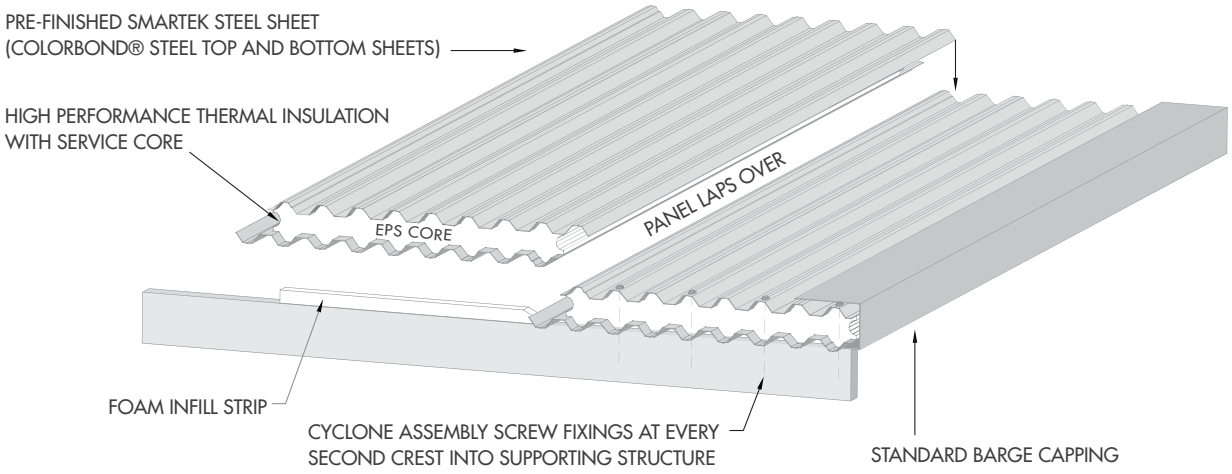
ARCPANEL's Smartek Panel can be manufactured either direction - Left to Right or Right to Left. The Direction of lay is determined by looking from the gutter end up of the roof panel, as shown on diagram beside.

Direction of the prevailing wind should be considered when deciding on the direction of install. For best weatherproofing, panels should be installed on the side opposite to the prevailing wind. Another point to consider is the ceiling side. Please see Direction of Install images below.









Internal Wall/Ceiling Junctions

The junction between the wall and the ceiling can be completed either of two ways;

Metal Infill can be used to infill the void between the roof panel and the top of the frame, it is attached to the wall frame prior to installing the lining. It can be used on either the inside or outside or both sides of the wall. When attaching the corrugated infill, be sure to leave a 1-2mm gap between the infill and the ceiling surface, and then fill with appropriate flexible sealant. See product specific Installation Manual for details.

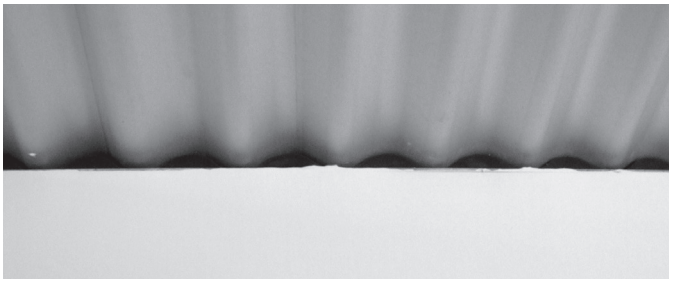
When the corrugated infill is not used, the plasterboard or internal lining is finished just below the underside of the Roof Panel.

Note: Square setting of the plasterboard lining to the wall is not recommended.

In both cases the suggested finish to the plasterboard is a standard casing bead.

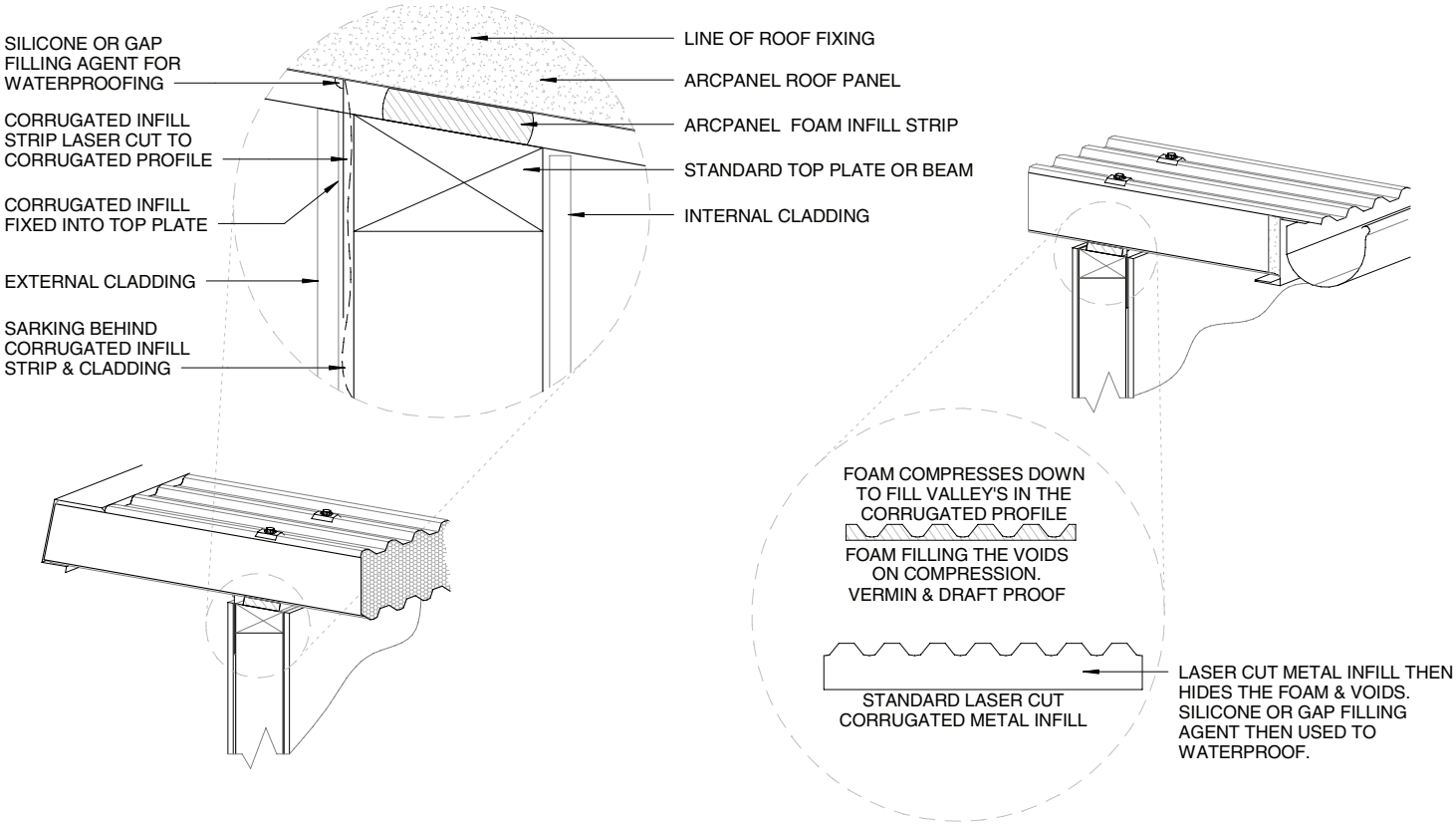
- Care must be taken to avoid damage to laps and corners, as this will affect the overall finish of the product.
- Curved panels will normally be supplied to site upside down. If this is the case, it will be necessary to turn the panels over prior to installation.
- Zincalume sheeting protective film must be removed if exposed to the sun for long periods of time.

FOAM INFILL AND CORRUGATED INFILL (COLOUR MATCH CEILING SOFFIT)



FOAM INFILL ONLY WITHOUT CORRUGATED INFILL (IMAGE USED FOR ILLUSTRATION)

CORRUGATED INFILL DETAIL

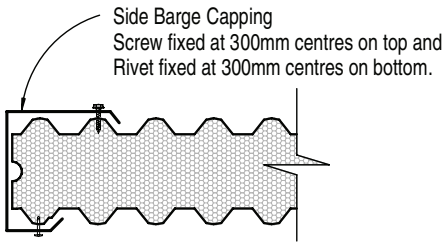


Version 2021. Always refer to local state building regulations and current safety requirements. Updated: 01/11/2022.

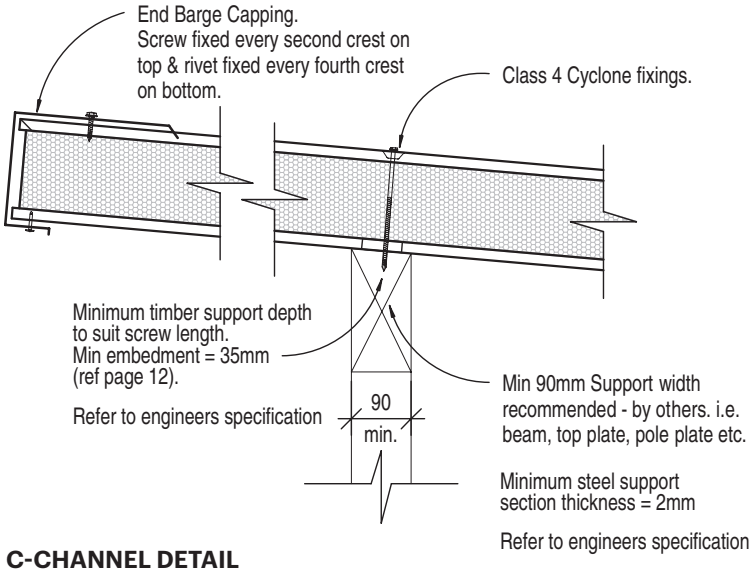
Typical Roof Detail

Standard ARCPANEL Smartek roof panel details, detail 'A', reflecting a typical gutter end, detail 'B', a standard lap detail and final detail 'C', treatment of the top end of a roof. Figure 19 shows a typical skillion roof using the C-Channel to support the panels at one end, also shown is the typical gutter and end capping details.

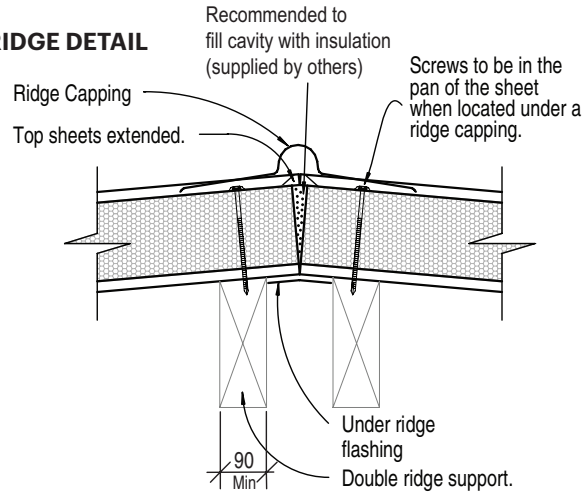
SIDE BARGE DETAIL



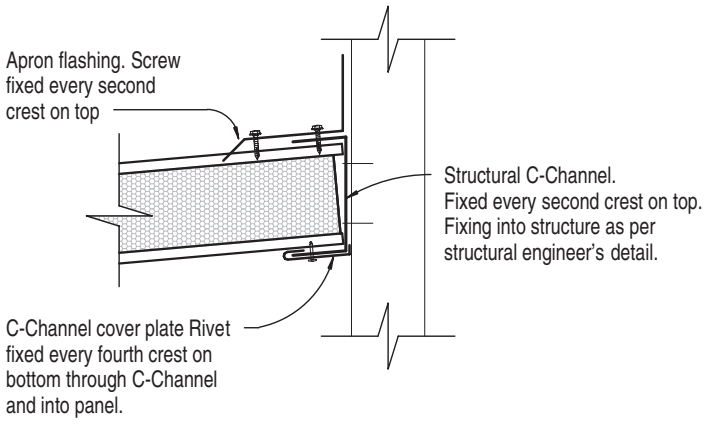
END BARGE CAP DETAIL



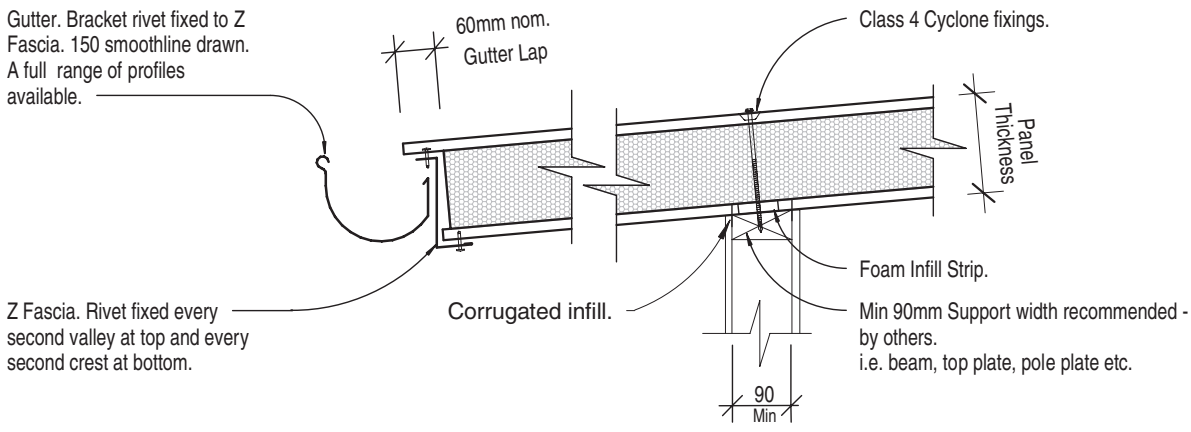
RIDGE DETAIL



C-CHANNEL DETAIL

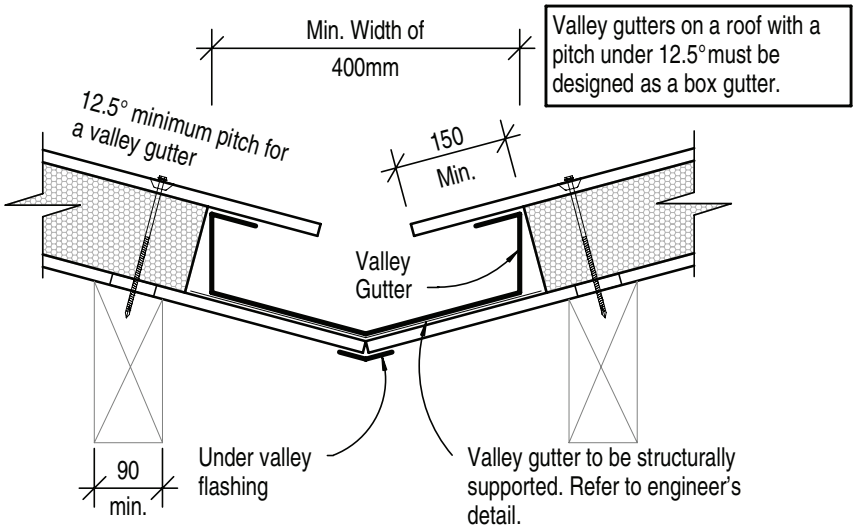


GUTTER & FASCIA END DETAIL

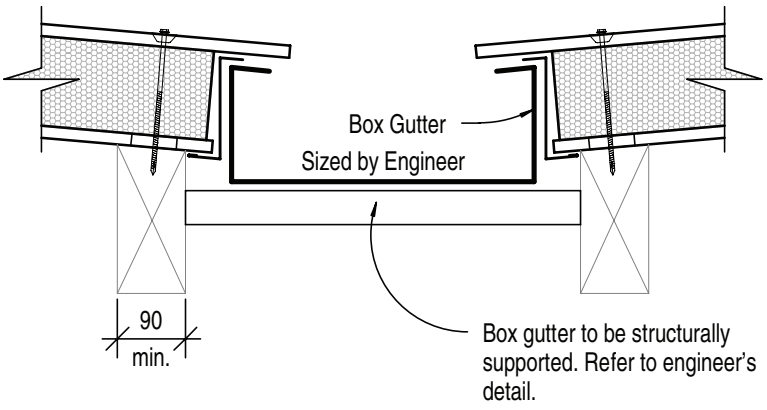


Refer to AS HB 39 for specific application requirements.

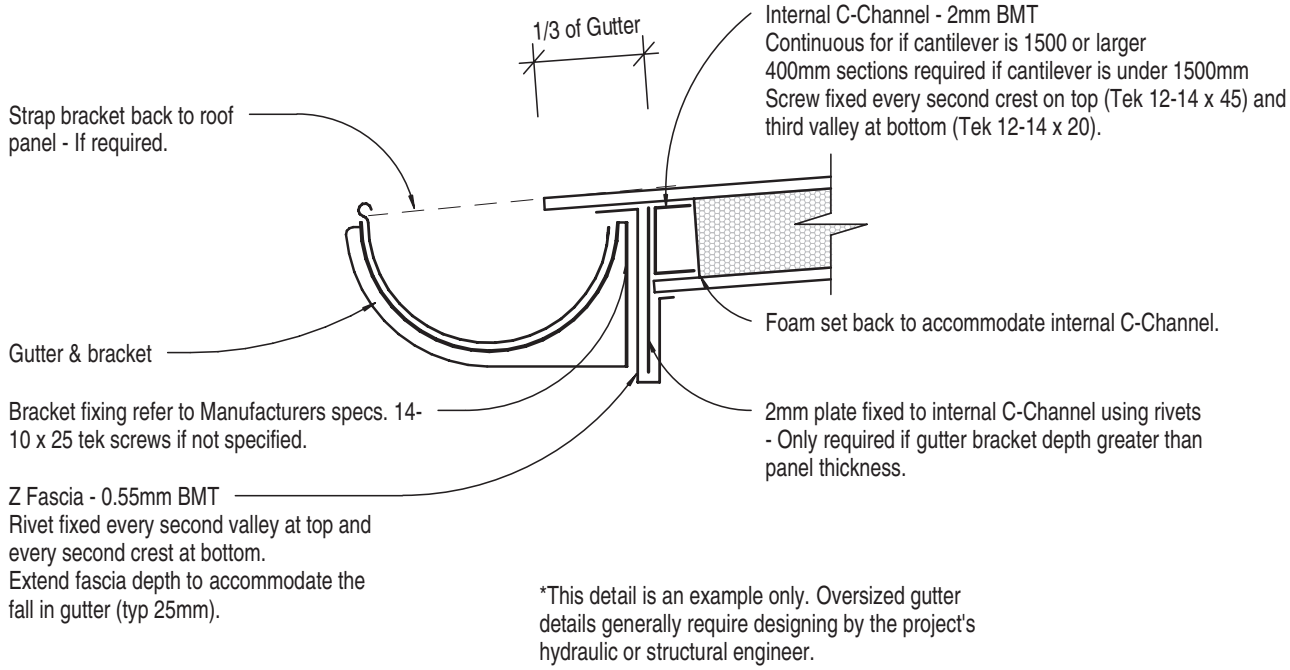
VALLEY GUTTER OPTION



BOX GUTTER OPTION



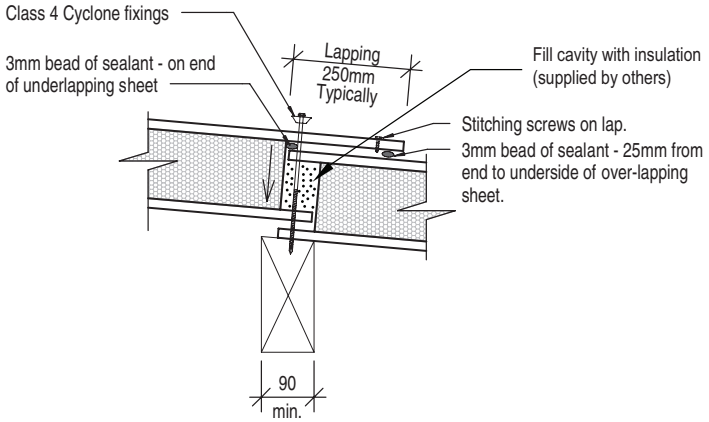
OVERSIZED GUTTER OPTION* > 150



*This detail is an example only. Oversized gutter details generally require designing by the project's hydraulic or structural engineer.

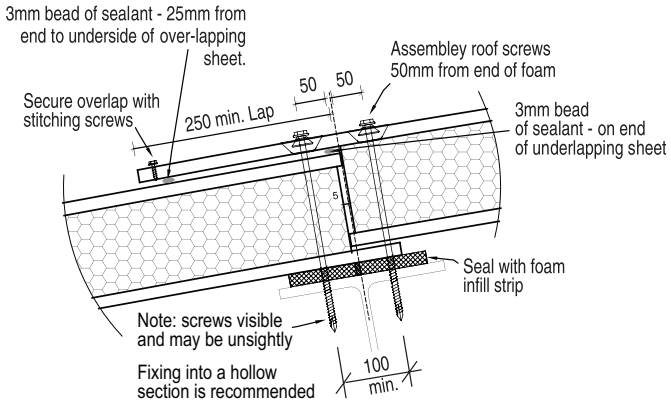
END JOINING LAP DETAIL (TYPICAL)

Single Fixing (Wind Class N2 - N3)



END JOINING LAP DETAIL (TYPICAL)

Double Fixing (Wind Class N4 - N5)

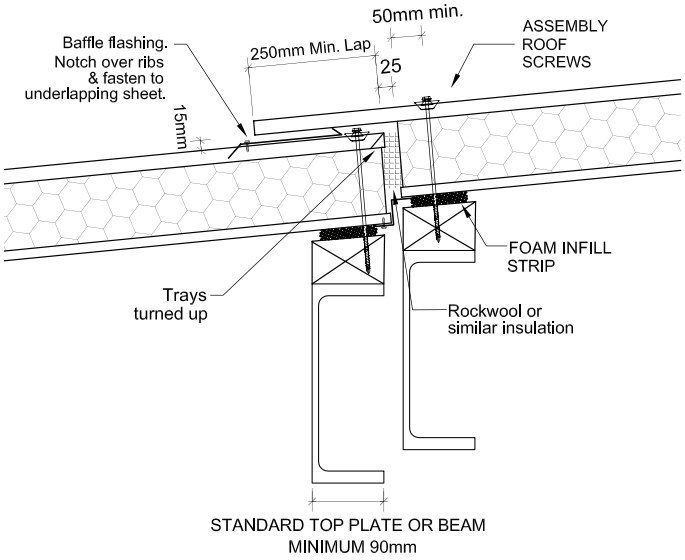


NOTE: END-LAPS IN PITCHES LESS THAN 15 DEGREES

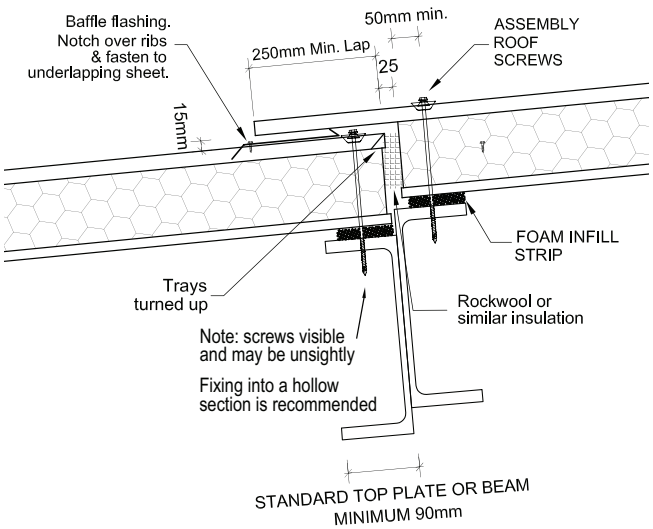
End-laps in roofs of less than 15° pitch must be sealed with a sealant. Use two runs of sealant, one run of sealant at the low end of the lap, the other run at the high end. Refer to Bluescope TB-8 & TB-9 for end lapping and sealants for exterior Finishes.

When the panels are lapped together and fixed, the compressed selant should just appear at the end of the lap. Position the lower sheet, then apply a 3mm bead of sealant across the top of the sheet to encapsulate the cut end of the underlapping sheet. Apply a 3mm bead of sealant across the underside of this sheet about 25mm from the end.

EXPANSION JOINT DETAIL (TYPICAL)



EXPANSION JOINT EXAMPLE 1



EXPANSION JOINT EXAMPLE 2

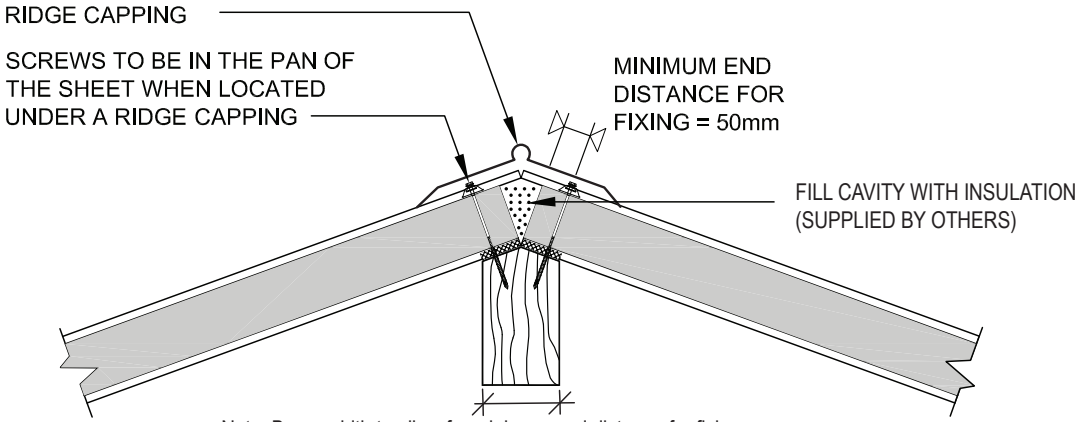
EXPANSION AND CONTRACTION OF METAL SHEETING — **TABLE 13**

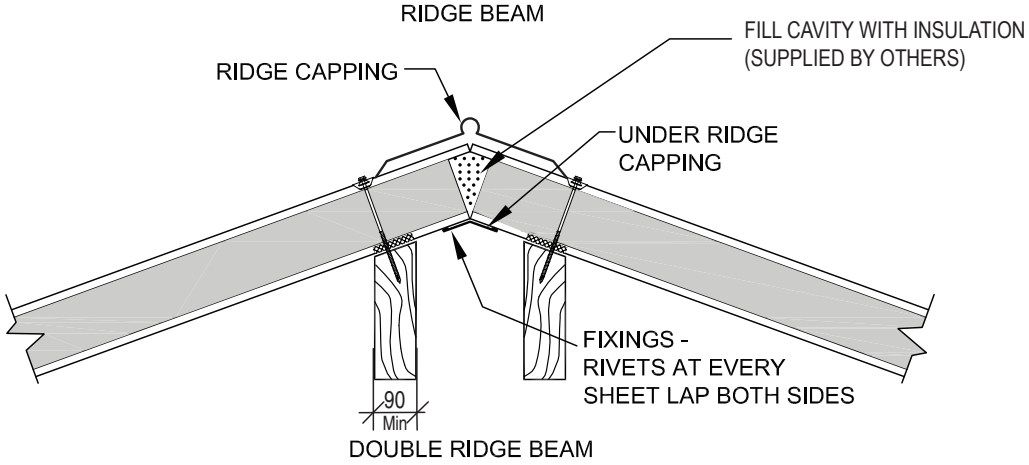
Sheet Length m	50°C Change	
	Steel, mm	Aluminium, mm
5	2.9	5.8
10	5.7	11.4
15	8.6	17.2
20	11.4	22.8
25	14.3	28.6
30	17.1	34.2

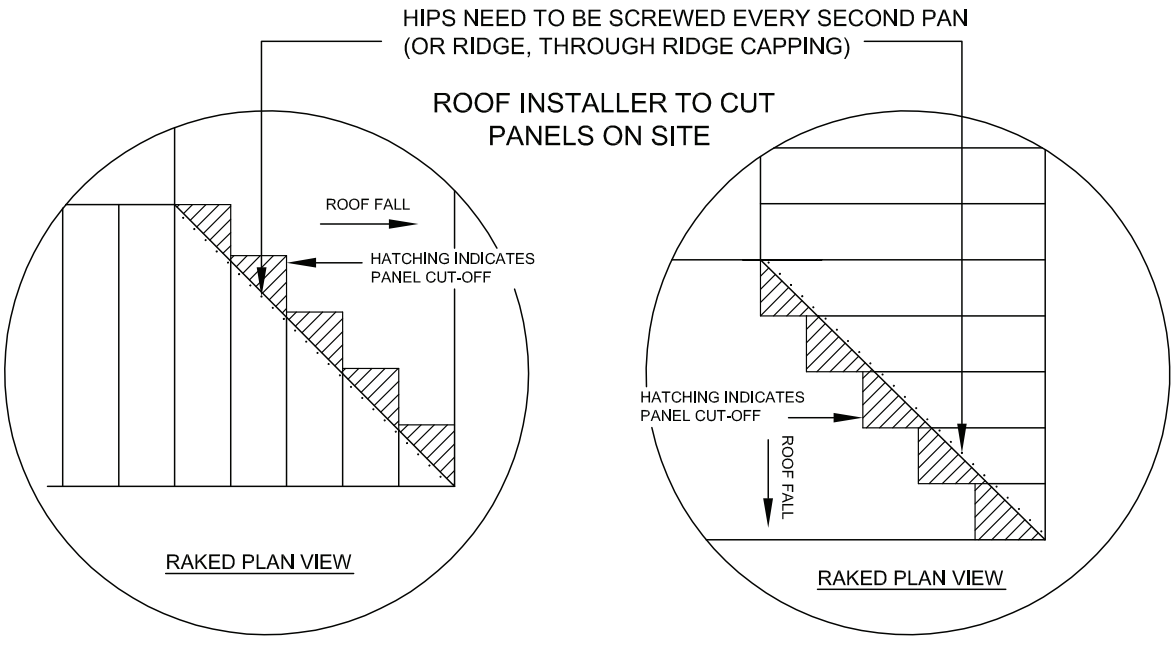
NOTE: Where provision for thermal expansion is required, appropriate manufacturers' product specifications should be referred to.

Hipped Roof Detail

The figure below provides details on how the ARCPANEL Custom roof panel is used on hipped roofs, or in the case of a verandah roof, a 90 degree return. In the case of hipped roofs, all panels are to be cut on site, ARCPANEL does not pre cut any roof panels. The roof is laid and marked as would be a conventional roof sheet, care is taken to include the lap when measuring and cutting panels.

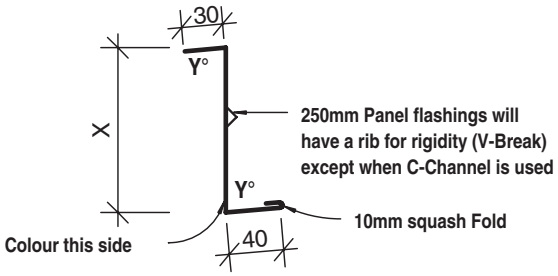






Typical Flashings & Rainwater Goods

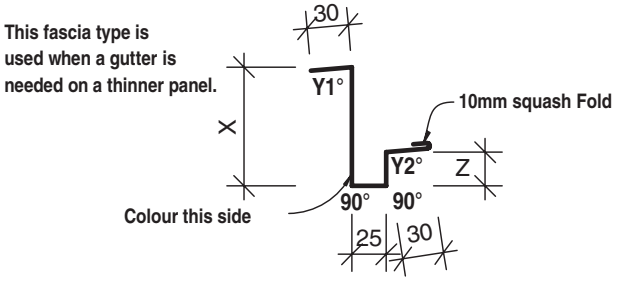
Z FASCIA - TYPE 1 - 0.55 BMT MATERIAL



Standard Applications X = Vertical depth - Dependent on panel thickness & pitch
Y° = 90°- pitch
Group 1 Applications X = Vertical depth - Dependent on panel thickness & pitch
Y° = 90°- pitch
(Includes space for mineral wool insulation)

* Arcpanel can provide X/Y/Z dimensions if the pitch/panel depth and gutter type is provided.

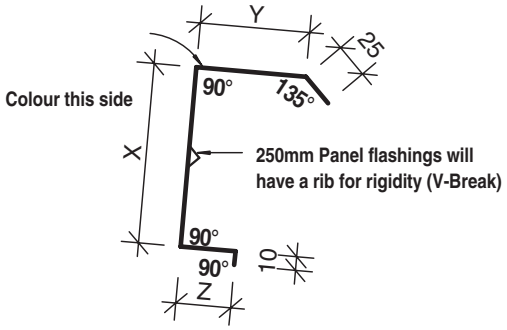
Z FASCIA - TYPE 2 - 0.55 BMT MATERIAL



Standard Applications X + Z = Vertical depth - Dependent on panel thickness & pitch
Y1°= 90°- pitch
Y2°= 90° + pitch
Group 1 Applications X + Z = Vertical depth - Dependent on panel thickness & pitch
Y1°= 90°- pitch
Y2°= 90° + pitch *(Includes space for mineral wool insulation)*

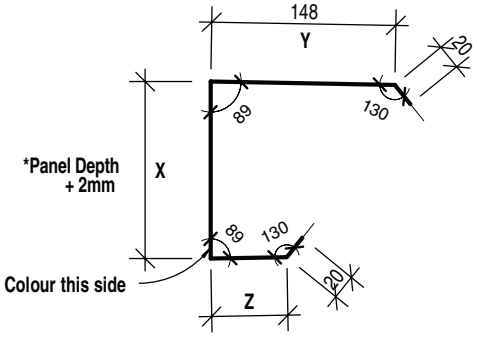
* Arcpanel can provide X/Y/Z dimensions if the pitch/panel depth and gutter type is provided.

END BARGE CAPPING - 0.55 BMT MATERIAL



Standard Applications X = Panel Thickness + 3mm
Y = 165mm
Z = 40mm
Group 1 Applications X = Panel Thickness + 6mm
Y = 178mm
Z = 53mm
(Includes space for mineral wool insulation)

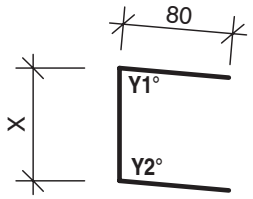
SIDE BARGE CAPPING - 0.55 BMT MATERIAL



Standard Applications X = Panel Thickness + 2mm
Y = 165mm
Z = 80mm

Group 1 Applications X = Panel Thickness + ?mm
Y = 178mm
Z = 93mm

C-CHANNEL - 2.0 BMT GALVANISED



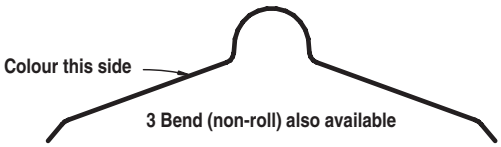
Standard Applications X = Vertical depth - Dependent on panel thickness & pitch.
Y1° = 90°- pitch
Y2° = 90°+ pitch

Group 1 Applications X = Vertical depth - Dependent on panel thickness & pitch.
Y1° = 90°- pitch
Y2° = 90° + pitch

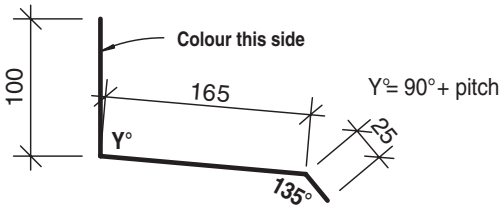
(Includes space for mineral wool insulation)

* Arcpanel can provide X/Y/Z dimensions if the pitch/panel depth and gutter type is provided.

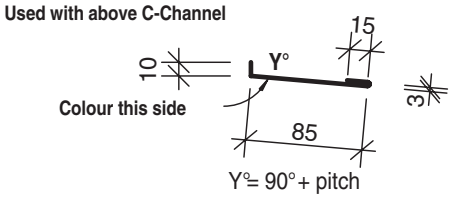
ROLL TYPE RIDGE - 0.40 BMT MATERIAL



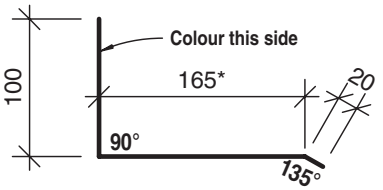
END APRON - 0.55 BMT MATERIAL



COVER PLATE - 0.55 BMT MATERIAL



SIDE APRON - 0.55 BMT MATERIAL

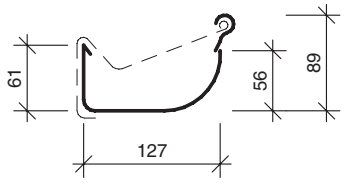


*Recommended to be measured onsite

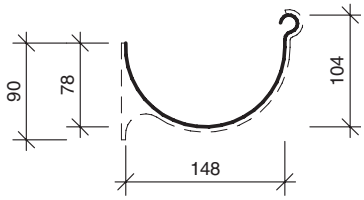
Gutter Types

Examples of some popular gutter types.

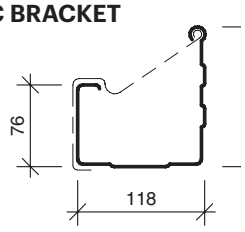
125mm QUAD GUTTER
INTERNAL ZINC BRACKET



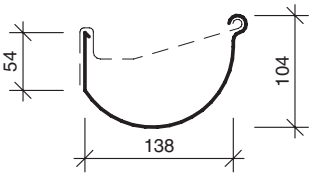
150mm HALFROUND GUTTER
EXTERNAL POWDERCOATED BRACKET



C_SQUARE GUTTER
INTERNAL ZINC BRACKET



150mm SMOOTHLINE GUTTER
INTERNAL ZINC BRACKET

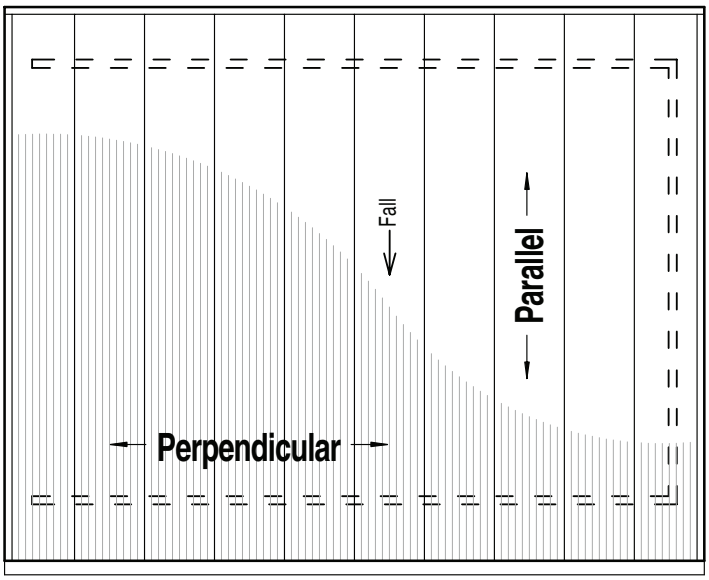


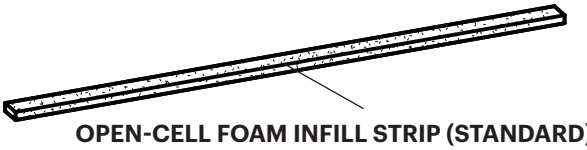
Version 2021. Always refer to local state building regulations and current safety requirements. Updated: 01/11/2022.

FOAM INFILL TYPE			TABLE 14
Non-Corrosive Environments (ISO Cat.1 and ISO Cat.2)		**Corrosive Environments (ISO Cats. 3-5 & High Corrosive)**	
Perpendicular	Open-cell Foam Infill Strip (Standard) Charcoal - 2000mm x 50mm x 30mm	Perpendicular	Closed-cell Foam Strip White - 905mm x 50mm x 23mm
Parallel	Open-cell Foam Infill Strip (Standard) Charcoal - 2000mm x 50mm x 30mm	Parallel	Closed-cell Foam Tape White - 48mm x 3mm x 25m Roll

FOAM POSITIONING

ROOF PLAN



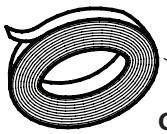


OPEN-CELL FOAM INFILL STRIP (STANDARD)

Used for perpendicular supports

CLOSED-CELL FOAM STRIP

Used for perpendicular supports



CLOSED-CELL FOAM TAPE

Used for parallel supports

Fixing / Rainwater Lapping

FIXING SCHEDULE - RAINWATER GOODS — **TABLE 15**

Item	Topside		Underside		Vertical Face	
	Type	**Spacing**	**Type**	**Spacing**	**Type**	**Spacing**
Barge Capping	Stitching screws	300mm	Rivet	300mm	Rivets	All external corners
Z Fascia	Rivet	Every 2nd crest	Rivet	Every 2nd crest	Rivet	All external corners
Apron Flashing	Stitching screws (end)	Every 2nd crest	N/A		N/A	
	Stitching screws (side)	300mm				
C - Channel (Refer to Fixing Detail)	Stitching screws	Every 2nd crest *1	Rivets attach to cover plate	300mm	No allowance is made for fixings required to attach C - Channel to the wall or frame	
	12-14 x 35 Metal Tek					
End Cap	Stitching screws	Every 2nd crest	Rivet	300mm	N/A	
Ridge Cap	Stitching screws	Every 2nd crest	N/A		N/A	

Tables 16 and 17 list the recommended fixing method for the ARCPANEL Custom roof panels, however in some situations additional fixing and/or different spacing may be required due to wind loads, structural requirements etc. An engineer should be consulted to confirm that the above fixings will be adequate for the individual project. ARCPANEL recommends that an experienced installer is used for fixing and finishing of the ARCPANEL Custom roof panels. Class 4 fixings to be used.

*1 Please refer to standard fixing C - Channel details

STANDARD RAINWATER LAPPING ALLOWANCE FOR RAINWATER GOODS — **TABLE 16**

Wastage Allowance - (Amount added to exact roof dimension, in mm)

Item	Length	At Joins	External Corners (Mitred Joins)	90 Degree Returns
Barge Capping Side & End	150mm	150mm	N/A	250mm
Z Fascia	150mm	150mm	N/A	N/A
Gutter	150mm	150mm	250mm	250mm
Apron Flashing	150mm	150mm	250mm	250mm
C-Channel	100mm	0	150mm	150mm

DOWNPIPE OUTLETS

Details: Supplied to suit gutter chosen.
Used: Are supplied at intervals specified on customer's drawing, failing this they will be typically supplied to suit a spacing of 12.0m, refer to relevant standards.

DOWNPIPES

Downpipes are not supplied by ARCPANEL.

GUTTER STOP ENDS

Supplied in left and right hand, to suit gutter chosen.

GUTTER BRACKETS (CONCEALED)

Brackets are typically calculated at 900 C / C (mm).

GUTTER BRACKETS (EXTERNAL FOR HALF ROUND)

Brackets are typically calculated at 900 C / C (mm).

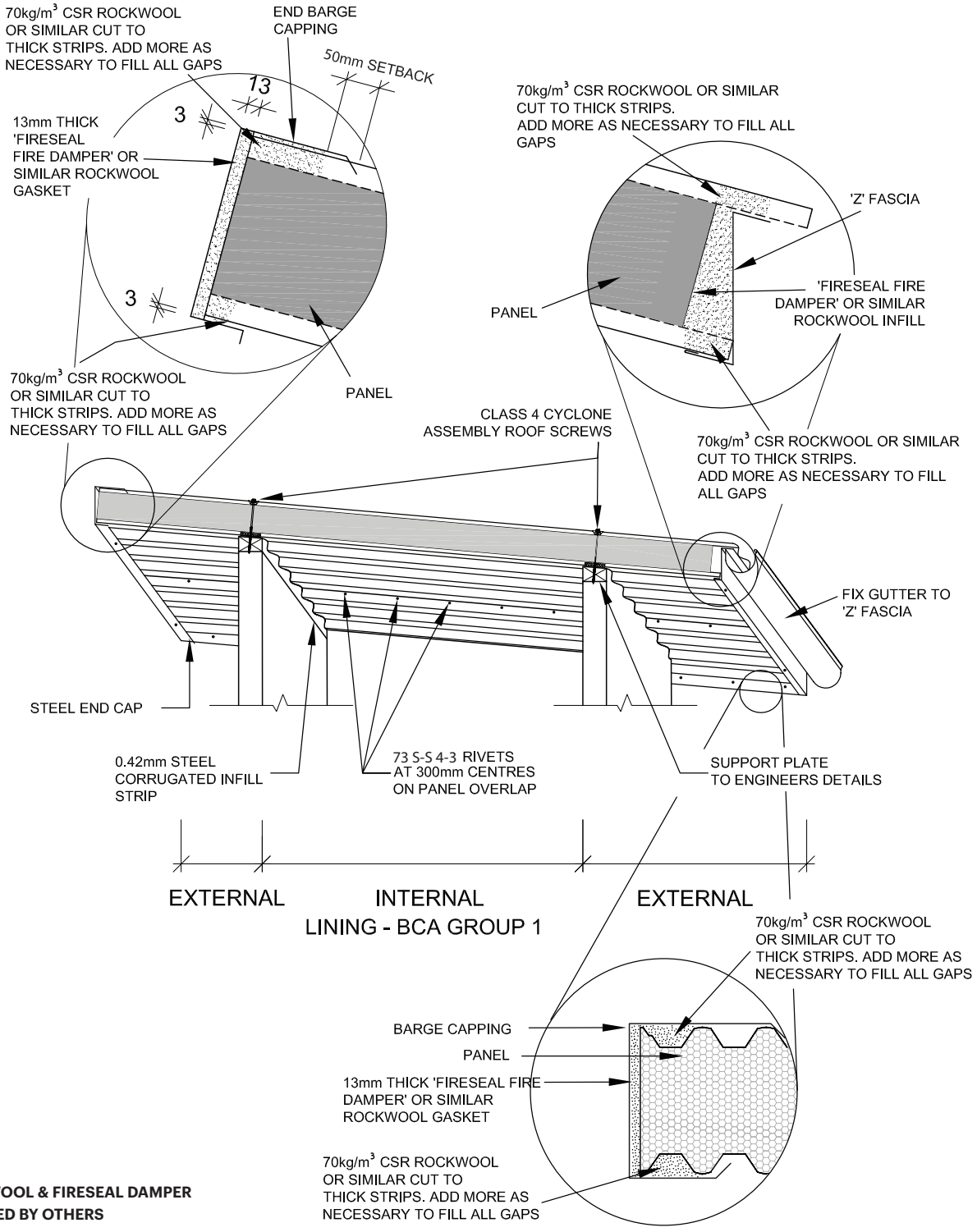
Mandatory For Group 1 Fire Rating Requirements

NCC/BCA - GROUP 1 FIRE RATING
INSTALLATION DETAIL

To achieve a 'Group 1' fire rating the ARCPANEL Smartek roof panel must be installed in accordance with the following details. All penetrations through the panel also must be suitably sealed with fire retardant products.

Please refer to the table and data on page 19 of this manual for further information on the 'Group 1' fire rating.

Should you require any further information please contact ARCPANEL for further details.

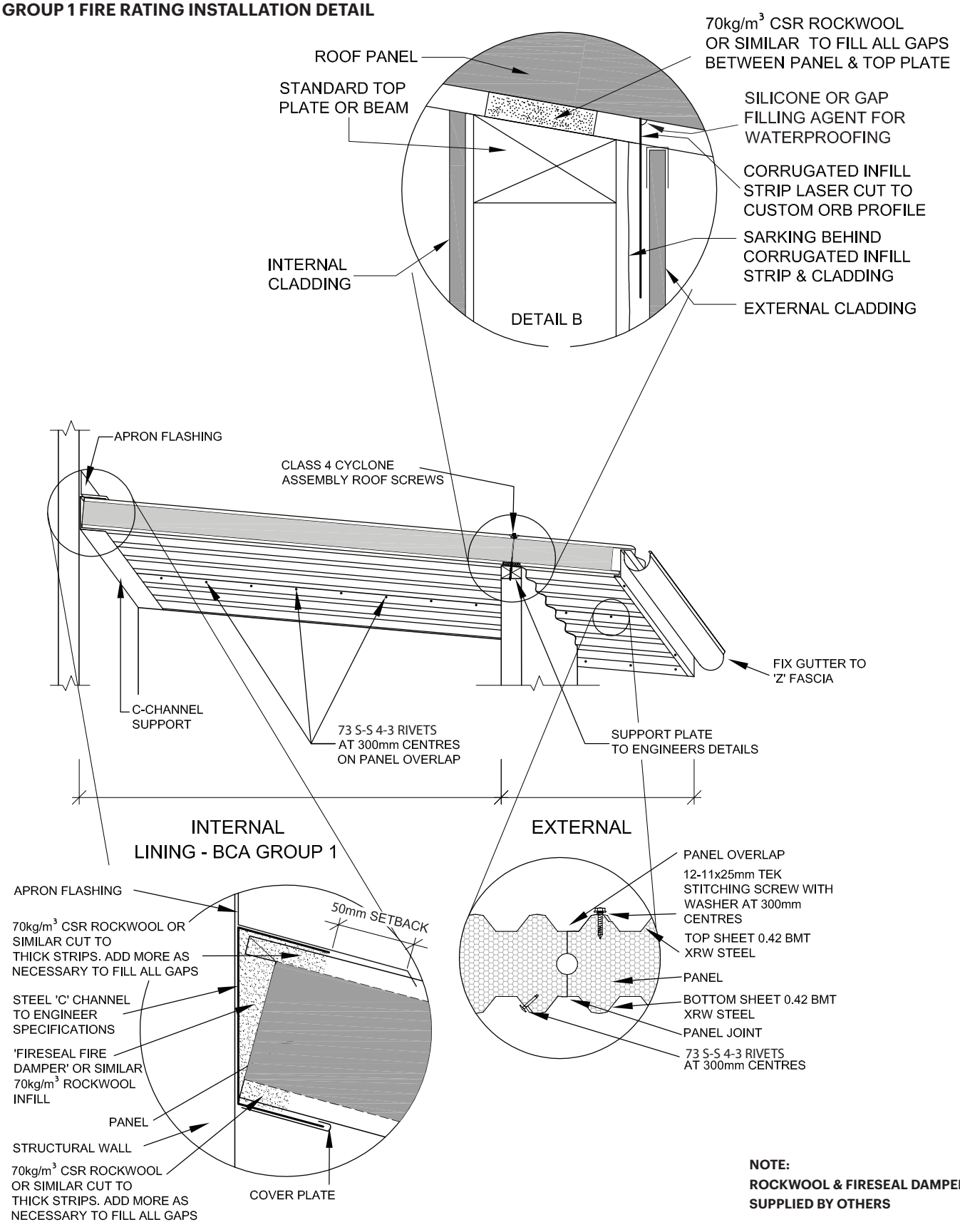


NOTE:
ROCKWOOL & FIRESEAL DAMPER SUPPLIED BY OTHERS

Mandatory For Group 1 Fire Rating Requirements

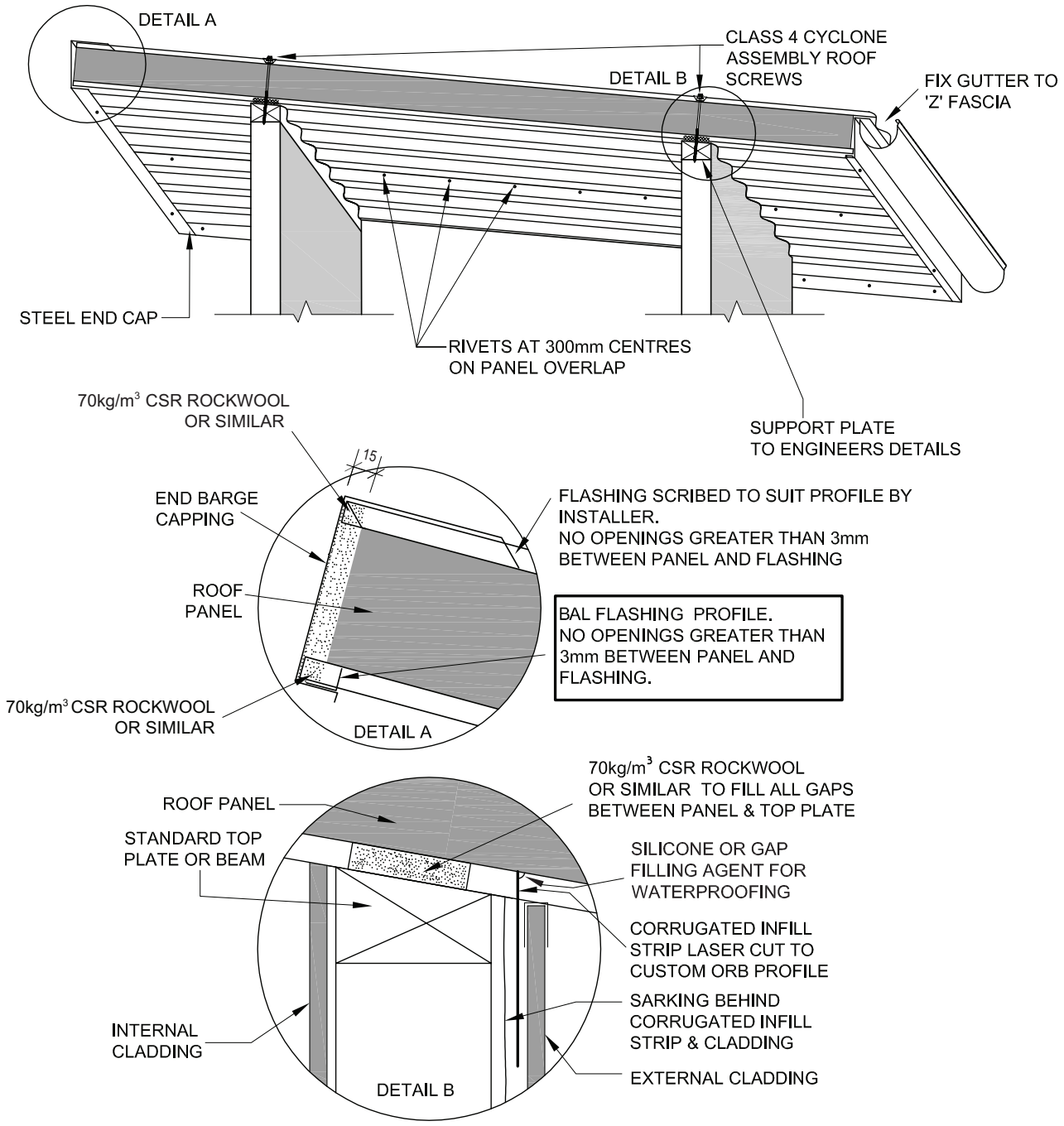
Fire Properties

GROUP 1 FIRE RATING INSTALLATION DETAIL



NOTE:
ROCKWOOL & FIRESEAL DAMPER SUPPLIED BY OTHERS

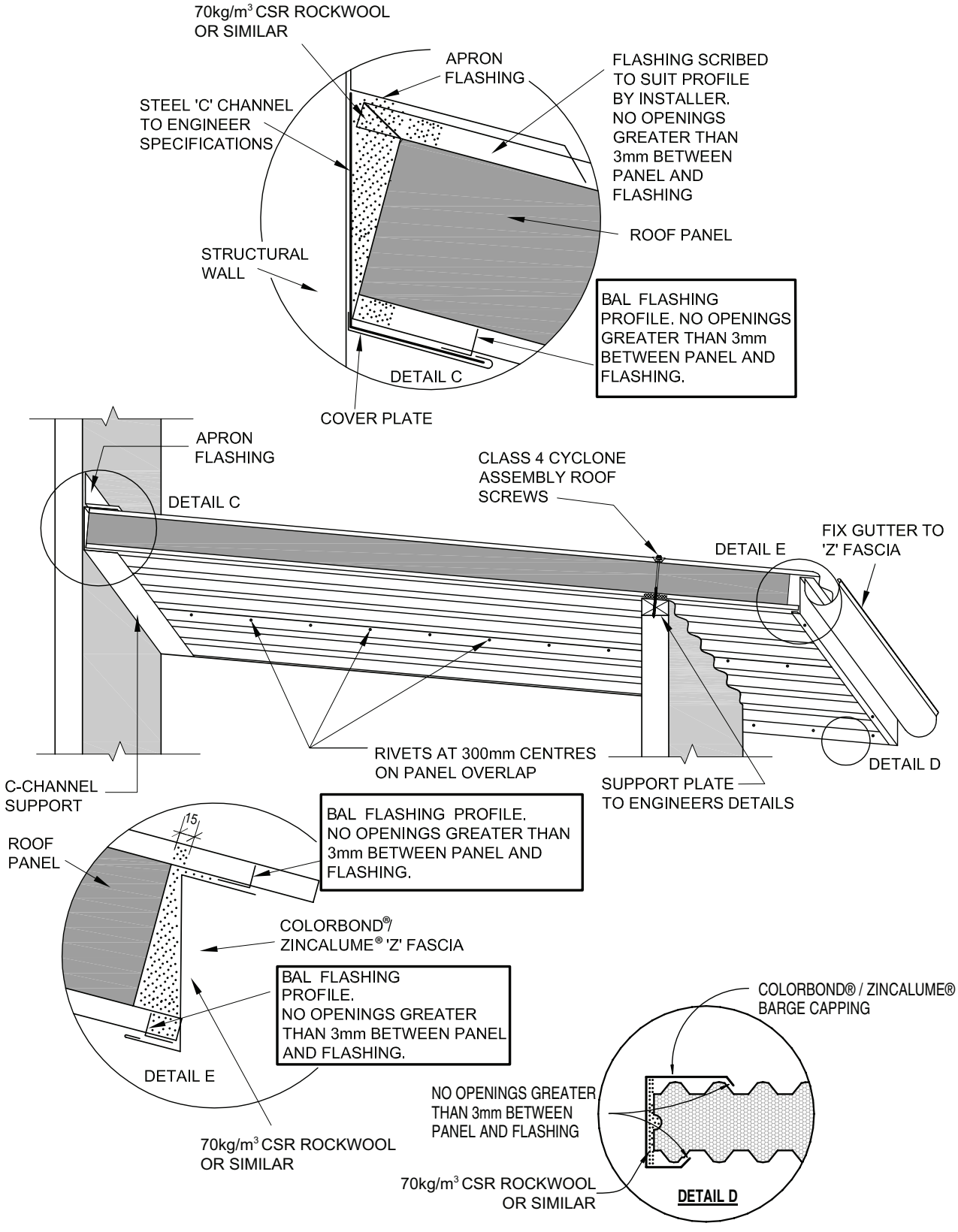
Mandatory Details For BAL-12.5 to BAL-40 Flashing Installation



NOTE:

73 AA 5-4 rivets required to install BAL flashings into place.

Mandatory Details For BAL-12.5 to BAL-29 Flashing Installation



NOTE:

73 AS 58 rivets required to install BAL flashings into place.

Version 2021. Always refer to local state building regulations and current safety requirements. Updated: 01/11/2022.

Contents

Installation

ARCPANEL Roof Panels are an innovative design, pre-fabricated with steel sheeting bonded to both sides of a profiled foam core.

Before installing ARCPANEL Roof Panels, it is recommended that the following documents be read:

- The product Design Guide

REFERENCE DOCUMENTS

- Relevant Australian Standards
- National Construction Code
- Local Building Regulations

SAFETY

Ensure the handling and installation of the ARCPANEL Roof Panels is in accordance with the current Work Place Health and Safety requirements.

- SWMS (Safe Work Method Statement)

  Installers are to provide a SWMS specific to each project.
- Terms and Conditions of Sale

  Refer' to ARCPANEL's General Terms and Conditions of Sale.
- Document Version Control

The following Section should be considered a guide only. For comprehensive information, building professionals should consult the appropriate legislation, regulations, codes of practice and technical literature.

Refer to the ARCPANEL Issued Manufacture drawing (samples below and opposite) for the following:

PANEL DETAIL

1. Panel type
2. Panel thickness
3. Sheet colour – top & bottom
4. Panel length

ROOF DETAIL

1. Roof length
2. Roof width
3. Direction of install
4. Roof fall

FIXING INFORMATION TABLE

1. Support – as noted on plan
2. Support type
3. Fixing method – type & size of fixing
4. Fixing frequency
5. Foam requirement

RAIN WATER GOODS (RWG)

1. Gutter & flashing position – as noted on plan
2. Gutter & flashing quantities – as noted on plan
3. Gutter & flashing sections – as noted on plan.

It is recommended to read the above information with the project Architectural and Structural Drawings, and the Building Designer's documentation.

ARCPANEL

GENERAL NOTES TO READ BEFORE YOU USE THIS GUIDE

This Manual has been prepared for a range of roofing and walling applications including water drainage systems, using products manufactured or supplied by ARCPANEL.

PROFESSIONAL ADVICE

All erection and connection details are to be made in accordance with the relevant standard connection details drawing contained in this guide and must be installed in accorance with SA HB39 installation code for metal roof and wall cladding.

We recommend you get professional advice to ensure your particular needs are adequately met.

Before you commence construction:

a. you should check with your local government authority to see if any form of prior permission or approval is required;

b. if you want to build or construct any attached structure, you should seek advice from a suitably qualified engineer to verify the capacity of your existing structure to withstand any additional load arising from the attached structure. You should also check with your local government authority to determine any specific requirements for the attachment to existing structures;

c. you should check with your local workplace health and safety authority to see what safety measures you need to put in place prior to and during construction. It is the responsibility of the installer/erector to ensure all local safe work practices are adhered to and the safety of the whole site is maintained at all times.

To ensure maximum lifespan of your building, consult your nearest ARCPANEL branch for information regarding maintenance, handling, storage and any other technical assistance you may require.

ENVIRONMENTAL CONDITIONS

Coated steel products can be damaged by some environmental conditions including industrial, agricultural, marine, intensive animal farming, swimming pools or other aggressive conditions. If any of our products are to be used in these conditions, or unusually corrosive environments, seek advice from ARCPANEL.

Keep the product dry and clear of the ground. If stacked or bundled product becomes wet for extended periods, separate it, wipe it with a clean cloth and stack it to dry thoroughly.

METAL AND TIMBER COMPATIBILITY

Contact with (or run-off from) some materials can damage coated steel products. Buildings can also be susceptible to condensation on inside surfaces. The materials include certain metals, treated timbers and chemicals.

- Don't allow any contact of coated steel products with incompatible materials.
- Don't allow discharge of rainwater from incompatible materials onto coated steel products.
- Ensure that supporting members are compatible with the coated steel products or, alternatively, appropriately coated.

If there are doubts about the compatibility of other products being used, seek advice from our information line.

Incompatible materials include:

- lead
- copper
- monel metal
- bare steel
- stainless steel (except with COLORBOND® stainless cladding)
- carbon (in pencils and some rubbers)
- green or some chemically-treated timber (like CCA or tanalith treatments)
- materials subject to cycles of dryness and wetness or which have excessive moisture content (such as improperly-seasoned timber)
- wet and dry concrete
- soils
- vegetable matter
- cleaning agents (e.g. brick cleaning)
- any material which will inhibit normal exposure to the atmosphere

Version 2021. Always refer to local state building regulations and current safety requirements. Updated: 01/11/2022.

SAFETY

It is commonsense to work safely, protecting yourself and workmates from accidents on the site. Safety includes the practices you use; as well as personal protection of eyes and skin from sunburn, and hearing from noise. Some sunscreens contain
titanium oxides. These have been shown to break down some paint compounds and these should be avoided.

Occupational health and safety laws enforce safe working conditions in most locations. Laws in every state require you to have fall protection which includes safety mesh, personal harnesses and perimeter guardrails. We recommend that you are fully aware of all local codes of safe practice and you adhere strictly to all laws that apply to your site.

CARE AND STORAGE BEFORE INSTALLATION

Rain or condensation is easily drawn between the surfaces of stacked sheets by capillary action, or they can be driven in by wind. This trapped moisture cannot evaporate easily, so it can cause deterioration of the coating which may lead to reduced life expectancy or poor appearance. If materials are not required for immediate use, stack them neatly and clear of the ground and minimise the duration of exposure if left for extended periods. If left in the open, protect them with waterproof covers. If stacked or bundled product becomes wet, separate it without delay, wipe it with a clean cloth and stack it to dry thoroughly.

HANDLING ON SITE

On large building projects you can reduce handling time by lifting bundles with a crane direct from the delivery truck onto the roof frame. Use a spreader bar for long sheets. For small to medium size projects, without mechanical handling facilities, you can unload sheets by hand and pass them up to the roof one at a time.

Handling Safety - our product may be sharp and heavy. It is recommended that heavy-duty cut- resistant gloves and appropriate manual handling techniques or a lifting plan be used when handling material. Handle materials carefully to avoid damage: don't drag materials over rough surfaces or each other; carry tools, don't drag them; protect from swarf.

WALKING ON ROOFS

It is important that you walk on roofing carefully, to avoid damage to either the roofing or yourself.
If there will be heavy foot traffic or where an area is to be treated as non-trafficable on a roof, provide a temporary walkway or working platform with consideration of hand rails to minimise damage.
Always take particular care when walking on wet or newly laid sheets — particularly on steeply pitched roofs.

Generally, keep your weight evenly distributed over the soles of both feet to avoid concentrating your weight on either heels or toes. Always wear smooth soft-soled shoes; avoid ribbed soles that pick up and hold small stones, swarf and other objects.

Great care should be taken when moving near roof overhang (and overlapping ends of sheets such as expansion joints). The overhang should be treated as a non-trafficable area (Refer to Section 2.3). When walking near an overhang, walk over or as close as practical to the roofing supports (usually over fastener locations). It is not recommended to walk on the overhang due to the potential for large deflections, which can result in a loss of balance and increased potential fall risk.

ZINCALUME® AND GALVANISED SHEETING

Arcpanel takes great care to ensure your panels are delivered in good condition. The manufacturing process for this specific product includes the use of roll forming oils and it is possible that there could be some residue which may lead to an inconsistent appearance or possible staining effect. This is a condition of using Zincalume and Galvanised products. Unfortunately Arcpanel cannot accept any responsibility for staining or discolouration on ZINCALUME® or Galvanised sheeting as this is a characteristic of the material.

It is very important to note that once your 'ZINCALUME®' or 'Galvanised' panels are delivered, you are required to split the panels and remove all plastic sheeting within two weeks of delivery. Failure to remove all plastic sheeting could result in the plastic being baked onto your roof/ ceiling which may not be able to be removed at a later stage and this will void any warranty.

MARKING OUT, CUTTING AND DRILLING

A pencil of any colour may be used except black or so-called lead pencils. Don't use black pencils to mark roofing or walling because the graphite content can create an electric cell when wet and thus cause deterioration of the finish. You can also use a string line with chalk dust, or a fine, felt-tipped marker.

CUTTING

Where possible, you should minimise site-work by using sheets cut to length in the factory.

For cutting thin metal on site, we recommend that you use a power saw with a metal-cutting blade because it produces fewer damaging hot metal particles and leaves less resultant burr than does a carborundum disc.

Alternative cutting tools (electric shears and nibblers) are also suitable however extra care with the straightness of the cut may be required.

Cut materials over the ground and not over other materials where hot particles can fall and cause damage to finishes—especially COLORBOND® steel pre-painted finishes. It is best to have the exterior colour finish of a COLORBOND® steel pre-painted sheet facing down, however you must then protect the paint finish from scratching by your work supports.

If you have to cut materials near sheets already installed, mask them or direct the stream of hot particles away. Reciprocating nibblers are also widely used in the roofing trade, and they produce an excellent cut.

The resulting small, sharp scraps can rust and damage finishes; and they can cause personal injury. Take special care to collect these scraps.

MAKING HOLES

Holes are often made by drilling or cutting by hole saw or jig saw. Mask the area around the hole to protect paint from damage by swarf.

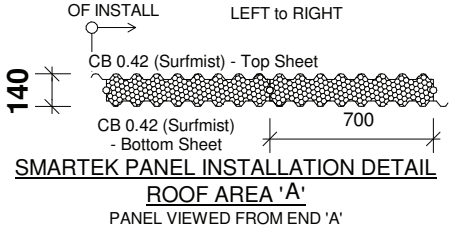
STRIPPABLE COATINGS

To provide temporary protection during production, handling and transport, some COLORBOND® steel products are coated with a plastic. This coating peels off easily when new, but it has a relatively short life, especially in sunlight. If you don't remove this coating at the time of installation, you may find it very hard to remove later on. Please dispose of the plastic in an environmentally responsible manner.

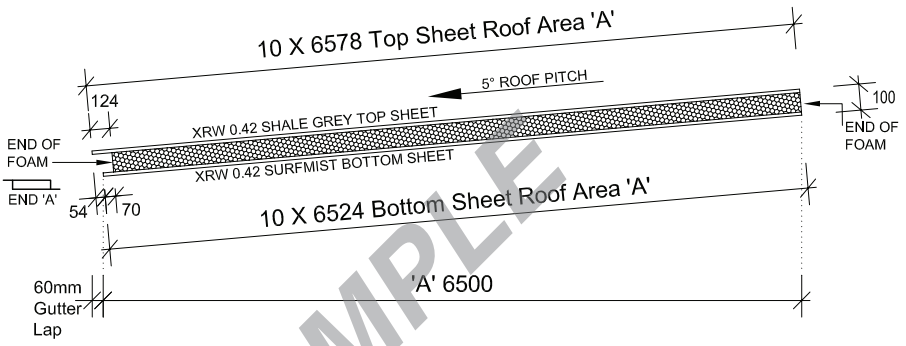
CLEAN UP

Swarf (metal scraps and/or abrasive particles resulting from cutting and drilling) left on the surfaces of materials will cause rust stains
which can lead to reduced life of the material.

- Sweep or hose all metallic swarf and other debris from roof areas and gutters at the end of each day and at the completion of the installation. Failure to do so can lead to blockages of water flow or surface staining (such as when the metal particles rust).
- If swarf has become stuck on a finish, it can be removed. Take great care not to remove the paint or the metal coatings.
- For critical applications inspect the job two weeks after completion, when rain or condensation will have caused any remaining swarf to rust, and thus highlight affected areas.



SMARTEK PANEL INSTALLATION DETAIL
ROOF AREA 'A'
PANEL VIEWED FROM END 'A'



TYPICAL SECTION FOR ROOF 'A'

ISSUED FOR MANUFACTURE

Recommended Requirements

MINIMUM HAND TOOLS REQUIRED TO INSTALL PANELS

1. Tin snips (left hand, straight, right hand)
2. Sheet turn up tool (Trapezoidal sheet only)
3. Sheet turn up pliers (corrugated sheet)
4. Vice grips
5. Drill bits
6. Pop Riveter
7. Chalk line
8. Builders string line
9. Caulking gun
10. Adjustable square
11. Tape measure
12. Hexagonal sockets
13. Pencils (lead free)
14. Safety Knife

MINIMUM POWER TOOLS REQUIRED TO INSTALL PANELS

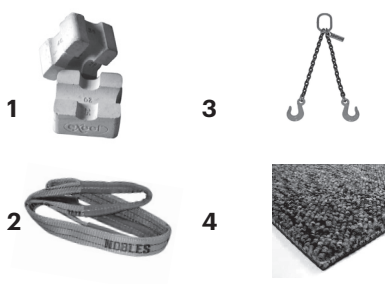
1. ELCB Safety Pack
2. Power lead
3. Electric screw gun
4. Battery drill
5. Reciprocating saw
6. Nibbler
7. Blower
8. Metal Cutter

MINIMUM SAFETY EQUIPMENT REQUIREMENTS TO INSTALL PANELS

1. Safety glasses
2. Gloves
3. Steel cap safety shoes
4. Harness
5. Hard hat
6. High visibility vest
7. Mobile scaffold
8. Signage

MINIMUM LIFTING EQUIPMENT REQUIRED TO INSTALL PANELS

1. Space blocks
2. Slings
3. Chain



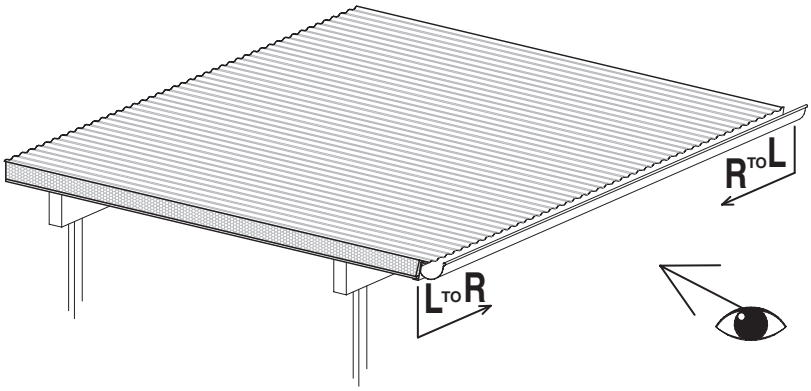
Version 2021. Always refer to local state building regulations and current safety requirements. Updated: 01/11/2022.

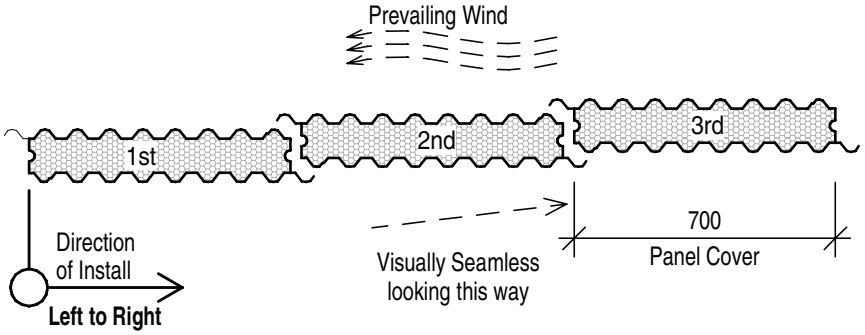
Panel Configuration

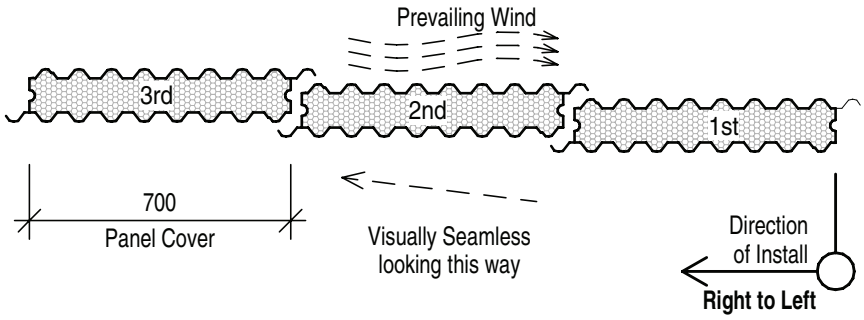
DIRECTION OF INSTALLATION

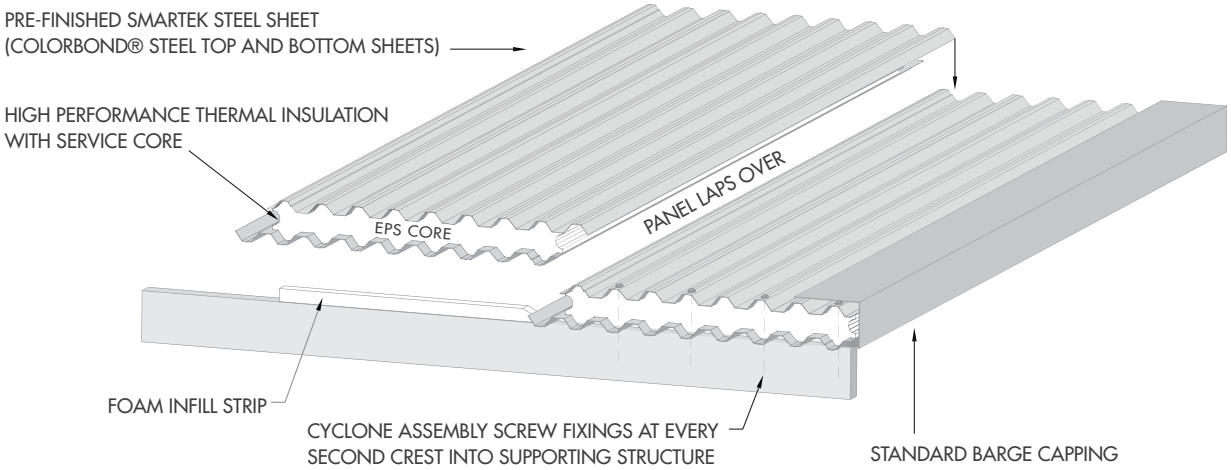
ARCPANEL's Smartek Panel can be manufactured either direction - Left to Right or Right to Left. The Direction of lay is determined by looking from the gutter end up of the roof panel, as shown on diagram beside.

Direction of the prevailing wind should be considered when deciding on the direction of install. For best weatherproofing, panels should be installed on the side opposite to the prevailing wind. Another point to consider is the ceiling side. Please see Direction of Install images below.







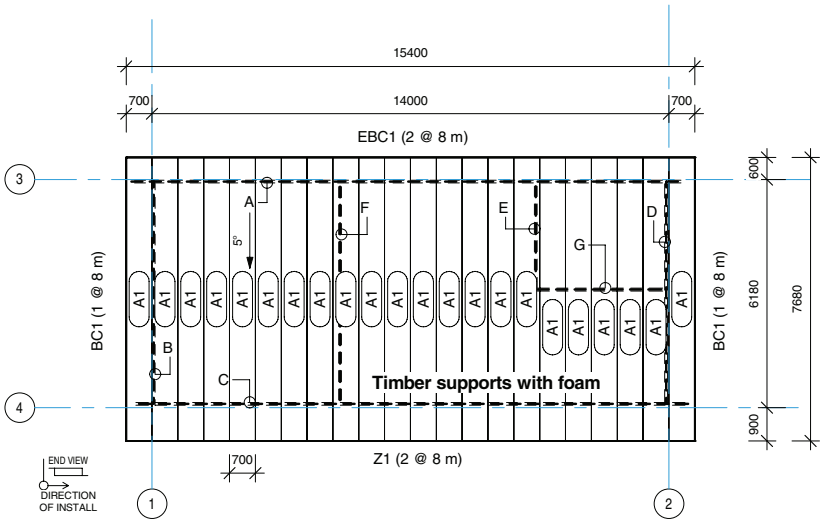


ARCPANEL Shop Drawings

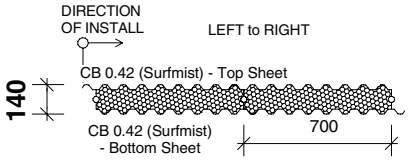
Example of Shop Drawing (when supplied for the project).

N3

Fixing Schedule - Roof A									
Beam Label	**Support Orientation**	**Support Type**	**Qty**	**Fixing Type**	**Frequency**	**Total Qty**	**Corrugated Infill Outside**	**Corrugated Infill Inside**	**Foam Infill**
A	Beam / Wall Perpendicular to Panel	Timber Support	1x	T17-14x10x200mm	Every 2nd Crest	80	No	No	Yes
B	Beam / Wall Parallel to Panel	Timber Support	1x	T17-14x10x200mm	200mm Centres	31	No	No	Yes
C	Beam / Wall Perpendicular to Panel	Timber Support	1x	T17-14x10x200mm	Every 2nd Crest	80	No	No	Yes
D	Beam / Wall Parallel to Panel	Timber Support	1x	T17-14x10x200mm	200mm Centres	31	No	No	Yes
E	Beam / Wall Parallel to Panel	Timber Support	1x	T17-14x10x200mm	200mm Centres	15	No	No	Yes
F	Beam / Wall Parallel to Panel	Timber Support	1x	T17-14x10x200mm	200mm Centres	30	No	No	Yes
G	Beam / Wall Perpendicular to Panel	Timber Support	1x	T17-14x10x200mm	Every 2nd Crest	20	No	No	Yes



Plan View - Roof A



SMARTEK PANEL INSTALLATION DETAIL
ROOF AREA 'A'
PANEL VIEWED FROM END 'A'

ISSUED FOR MANUFACTURE

ARCPANEL
'The new name for Ritek Roof Systems'

Architectural Panels Pty Ltd
ABN 85 617 264 703
42 Dacmar Rd
Coolum Beach Qld 4573
PH: 07 5335 9800
FAX: 07 53359822
E: sales@arcpanel.com.au
www.arcpanel.com.au

Receiving deliveries on site

UNLOADING INFORMATION

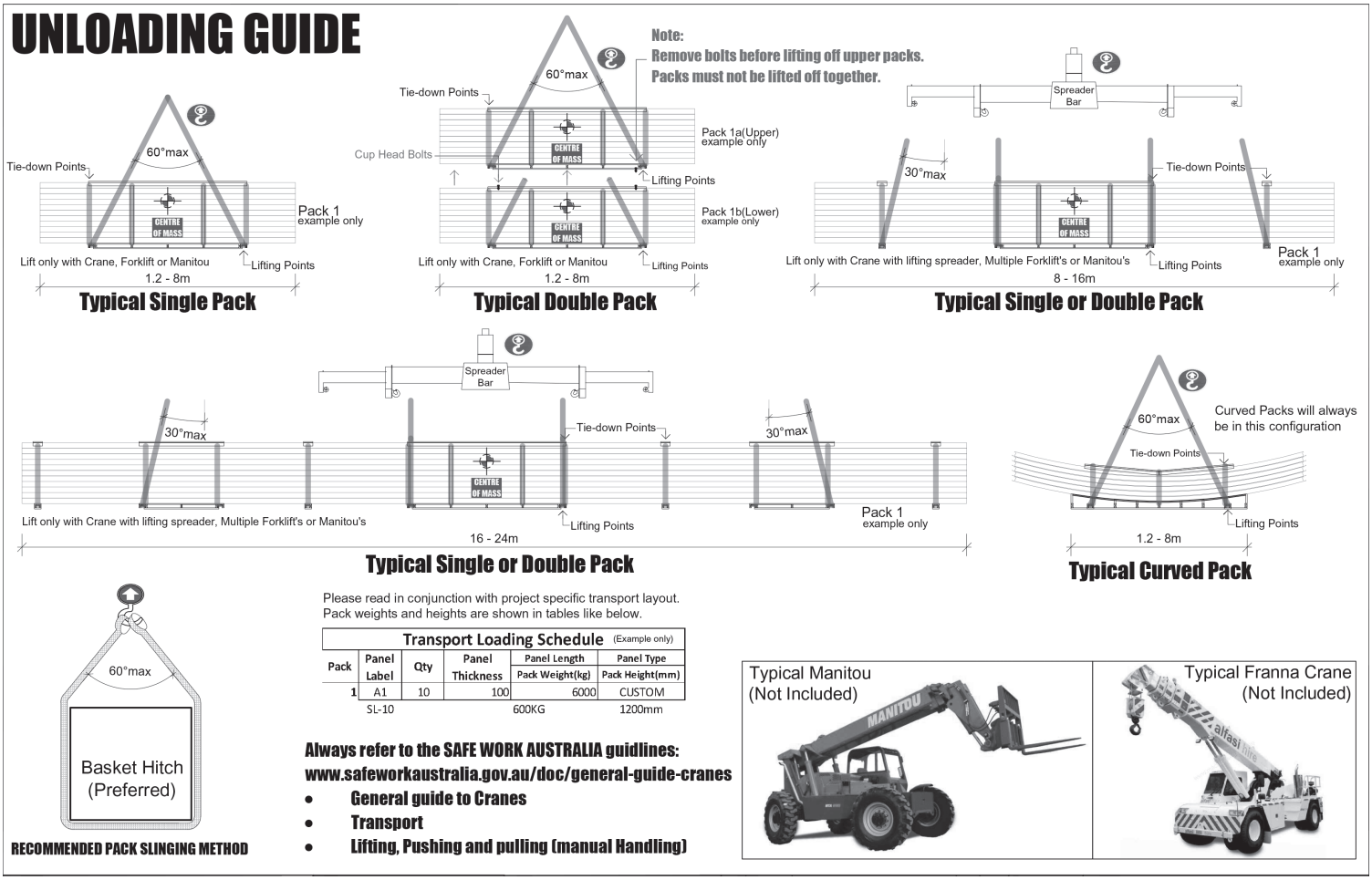
- ARCPANEL is to be advised if site access is restrictive and any issues that will affect delivery prior to orders being placed.
- Unless the customer has advised and arranged otherwise with ARCPANEL prior to delivery an unloading facility is to be provided on site by the customer e.g. crane or forklift.
- The ARCPANEL Roof Panels will typically arrive to site on a semi-trailer truck or body truck.
- All care should be used when lifting panels from the truck.
- When using lifting slings, they are to be placed through the pallet at the lifting point and be placed over the adjacent vertical timber frame.
- When using a forklift the tynes will be placed through the pallet.
- In both cases above ensure the load is well balanced before continuing the lift.
- It is the customer's responsibility to check-off the quantities against the Manufactured Drawings and delivery docket, the condition of the panels and accessories on delivery and advise ARCPANEL immediately of any discrepancy.
- Deliveries will be made to site on truck at kerb. One hour waiting time has been allowed for at the site to unload.

Always refer to ARCPANEL Terms and Conditions for deliveries and the Project Safety Plan & SWMS

LIFTING POINT (SLING)

LIFTING POINT (FORKLIFT)

UNLOADING TRUCK WITH CRANE [FROM PALLET] [REFER TO ARCPANEL UNLOADING GUIDE].



NOTE: Refer to Arcpanel unloading guide as supplied with each delivery of panels. Contact Arcpanel to request a copy on 1300 200 004 or by email info@arcpanel.com.au

Unloading of Delivery

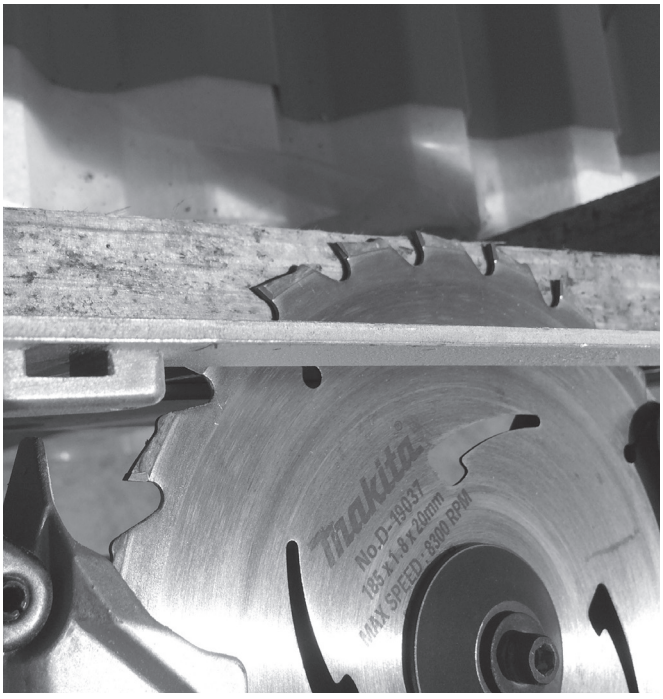
1. Panel packs are designed to be either unloaded from the delivery vehicle by crane or fork. If a crane is enlisted, slinging points are provided to ensure your panels can be unloaded free from damage, as seen on supplied transport layout. (Please see images below of ARCPANEL's typical panel packs)

SINGLE PACK

DOUBLE PACK

2. Arrange for the packs to be unloaded onto reasonably level, stable ground, allowing for enough space between each pack to allow for unpackaging (1m min between packs recommended).

3. Using 'Tin Snips', cut all steel strapping from the packs, once done, cut the vertical timbers on all four sides to allow the top timber crating material to be removed. We recommend a circular saw set to 25mm blade depth. Pile packaging away from working area, for appropriate disposal.

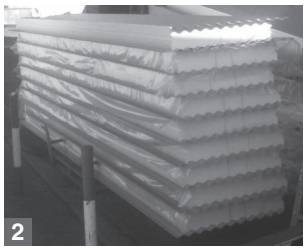


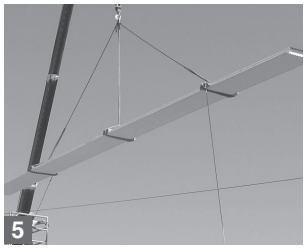
Craning Panels into Place

1. Position crane.
2. Remove packaging from panels.
3. Lift the top panel at alternate ends (not by the top sheet) and insert a packer to enable slings to slide between the panels.
4. Insert the slings around the panel using a block each side to protect the overlapping sheet when lifting.

   A safety line connecting the blocks over the panel will mitigate the risk of the blocks falling if they are dislodged at height.
5. Slings should be suitably spaced to maintain the lifting integrity of the panels.

   A guide rope will allow control of the panel at height.
6. Place the panel on supporting members where required and remove slings and blocks.



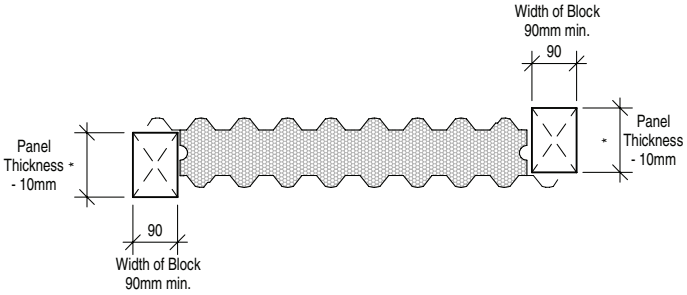


NOTE:
Refer to product specific Installation Manual for Lifting Block Diagrams.

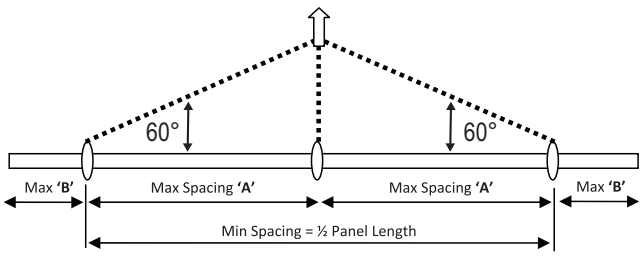
PROTECTING CEILING FINISH

It is recommended to lay carpet or similar over the support, this is to prevent any damage to the exposed ceiling sheet.

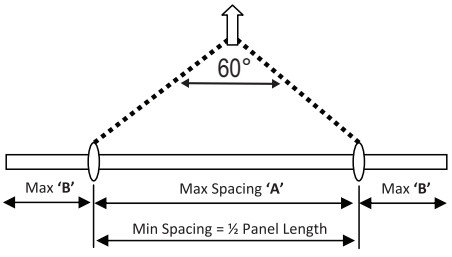
SMARTEK PANEL LIFTING BLOCK DIAGRAM



RECOMMENDED MAXIMUM SLING LIFTING SPACING							
Panel Thickness (mm)	**75/90**	**100/110**	**125/130**	**140/150**	**160/175**	**200**	**250**
Max Sling Spacing 'A' (mm)	**6000**	**7000**	**8000**	**9000**	**9000**	**10000**	
Max Panel Overhang 'B' (mm)	**1500**	**2000**	**3000**	**3000**	**3500**	**3500**	



Slings should be suitably spaced to maintain lifting integrity of the panels. Also, as shown above, a guide rope should be attached to the panel for ease of maneuverability.



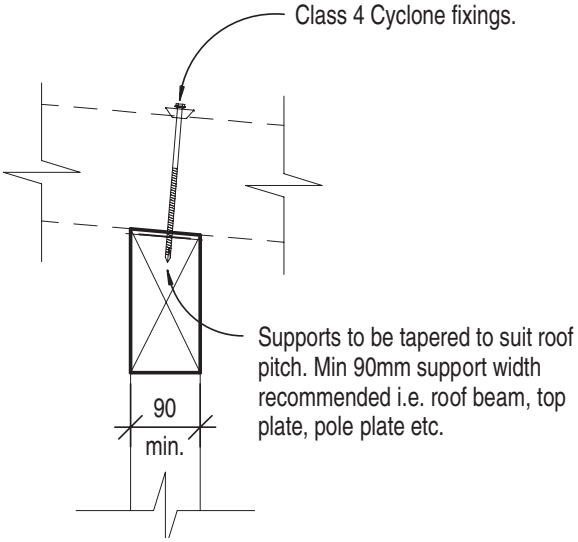
The panels are then lifted into place.
Vacuum lifting devices can be used to lift ARCPANEL Roof Panels. Please contact ARCPANEL for further information.

Preparation Supporting Structure

1. Ensure all supporting walls/members are straight, braced, parallel, and level where required. Tip: our panels, whether made straight, curved, or multi-curved, are only as good as the structure that they are connected to, any imperfection or inaccuracy in the supporting structure will be accentuated if the panels are cantilevering beyond the frame/ supporting structure.

2. Ensure the top plate or upper surface of the supporting member is tapered to suit roof pitch. This will allow the panel to expand and contract without binding on the supporting walls/structure.

3. Place the Jointfill Foam centrally on all walls and supporting members.

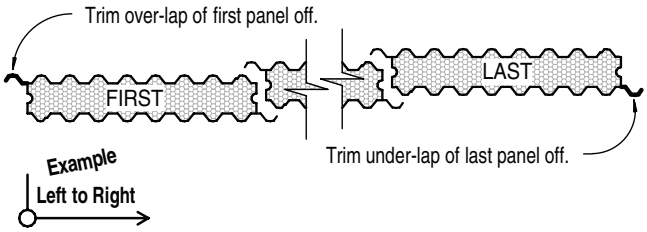


Panel Installation

1. If anything is unclear, please contact your Account Manager or ARC Panel before starting.
2. Before lifting your first panel, understand the cover of your chosen panel and the Start/ Finish point of your project. Please refer to the installation manual to understand what fixings and accessories go where. If you have had Manufacture drawings supplied, please refer to these for the panel setout, starting point, direction of installation and finishing point or cuts that may be required. Consideration needs to be given to any services (such as lighting and fans) and where cables can be run in the service-cores.
3. Panel must be installed at their designated cover for the best visual and water tight joins. Marking out of the lapping fasteners could be done prior to lifting.
4. Always mark supports on panels as they are being installed, if a wall or beam stops it should be noted as when screwing off you may penetrate a finished ceiling.
5. Panels cannot be crept as easily as single sheeting so additional care should be taken in squaring up first panel and checking this with the finishing point.
6. Flashings (if supplied) will be setout and named on your manufacture drawings.

PLACING THE FIRST PANEL

Prior to lifting the first panel in place, ensure that the foam infill strips are placed on external and internal walls as required. Check that all fixings are available. The use of the foam infill strip is generally recommended.



PLACING SUBSEQUENT PANELS

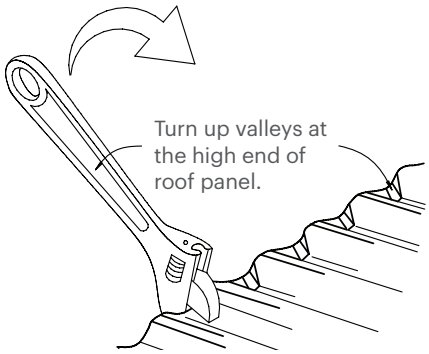
The panels are placed on the supporting member at a slight distance away from the previously secured panel, this will enable the removal of the slings. Once the slings are removed the panel is then lifted into place, at this time both the lap joins are to be checked whilst the panels are being screwed into place. On connection of two panels, the previous panels can be tacked off. As the panels are installed, all overhangs and panel layout are to be checked in accordance with the workshop drawings. Please refer to standard details on the following pages for further assistance. Once all the panels have been installed, proceed to install all of main fasteners then stitching screws are applied to the top lap and the rivets to the underside lap (refer to fixing information for details on spacings page 04).

PANEL CUTTING

Cutting of the panels may be required during installation, as with any roofing product, suitably mark the panel which is to be cut. The panel can be cut using nibblers, sabre saw etc. The ARCPANEL Roof Panels can be installed from left to right (left hand) or right to left (right hand), this is normally determined prior to undertaking of the workshop drawings.
Should a specific installation direction be required, please advise ARCPANEL at the time of order.
Direction of lap is determined by looking from the gutter end of the roofing panel.

TURN-UPS

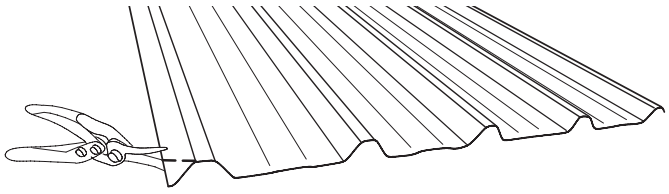
At the high end of roofing, wind can drive water uphill, under the flashing or capping, into a building. To minimise this problem, turn up the valleys (or pans) at the high end of roofing. The process is called turning-up (or stop-ending). All roofing on slopes below 25° pitch should be turned-up.



SHEET-ENDS ON LOW SLOPES

For panels laid on slopes of 5 degrees or less, the underlap lip of the under-sheet may require to be cut back on the corner at the downhill discharge end (gutter end), of the sheet, to block capillary action.

This may be required where the return lip of the under-lapping sheet nests snugly with the overlapping sheet without a gap or a nominal gap, where there is an expected high volume/depth of water discharging, where the sheet ends are exposed to the direct effect of wind, or where there is interference with the down-turning of the pan/valley.



COMPLETION

On completion of the roof installation, the entire roof surface is to be cleaned down, marks on the underside of the panel can be easily removed using detergent and water. The use of abrasive cleaners or solvents must not be used under any circumstance.

The top side of the roof should be soft broomed to remove all swarf and metal filings, the last stage is to remove all debris, filings and swarf from all the eave guttering.

Version 2021. Always refer to local state building regulations and current safety requirements. Updated: 01/11/2022.

Version 2021. Always refer to local state building regulations and current safety requirements. Updated: 01/11/2022.

Structural Warranty (sample only)

ARCPANEL Insulated Panel – Structural Warranty Period

ARCPANEL takes pride in the quality of the materials used in its products. That quality allow ARCPANEL to offer its customers, in particular circumstances, certain warranties over and above required statutory warranties. The warranty covers structural defects and delamination of the products which are caused during and as a result of the manufacturing process for the Warranty Period from the date of delivery, subject to the limitations and qualifications set out in these conditions. Whether or not those warranties apply is dependent upon factors including, without limitation, the panel materials, the project application, site location and Environmental Exposure. Those warranties can at times have extensive warranty periods up to the maximum that appear in the tables below and those warranties are otherwise limited by ARCPANEL's Terms and Conditions.

ARCPANEL PRODUCT STRUCTURAL WARRANTY FOR ROOFING APPLICATIONS (SAMPLE ONLY)
INDICATIVE & MAXIMUM STRUCTURAL WARRANTY PERIOD - SUBJECT TO PRIOR APPROVAL

Environment	(ISO Cat.1)	(ISO Cat.2)	(ISO Cat.3)	(ISO Cat.4)	(ISO Cat.5)	(Highly Corrosive)
Panel Material	Non-Coastal 5km+	Coastal 1km to 5km	Marine (calm) Industrial 500m to 1km	Severe Marine (calm) Industrial 100 to 500m	Very Severe Marine (surf) 50m to 500m Corrosive Industrial 0m to 100m	Enclosed Aquatic Centre Swimming Pools
COLORBOND® STEEL / ZINCALUME®	**20 years**	**15 years**	**10 years**	By Enquiry	No Warranty	No Warranty
COLORBOND® ULTRA STEEL	**20 years**	**20 years**	**15 years**	**10 years**	By Enquiry	By Enquiry
SUPERDURA® STAINLESS STEEL	**20 years**	**20 years**	**20 years**	**20 years**	**20 years**	**20 years**

Specific project limited warranties will be customised and determined at ARCPANEL's sole discretion on a project by project basis. In exercising that discretion ARCPANEL will consider numerous factors particularly those related to the:

- intended use of the Product; and
- location at which the Product will be used.

For example, in categorising, customising and determining warranty periods for Severe Marine or Very Severe Marine applications ARCPANEL will consider factors present such as distance from coastal locations, whether or not different marine conditions apply such as Surf, Exposed or Calm conditions where:

Surf typically means that the near vicinity or the area is exposed to breaking surf and ocean spray

Exposed typically means that there are expanses of salt or brackish water present in the near vicinity and the area or the near vicinity is exposed to onshore winds, but not typically to breaking surf

Calm typically means protected areas of salt or brackish water, including ports, harbours, bays, and river estuaries

Note: The specific project limited warranties may not be determined or pre-approved at the time of preparing a project quotation, estimate or pricing for the particular project being specified. It is the responsibility of the customer to obtain a pre-approved warranty application prior to order placement to be satisfied with the project limited warranty applicable for the project being specified. Corrosion and paint system warranty when applicable is limited to the maximum period offered by the metal sheeting manufacturer, subject to the metal sheeting manufacturer's warranty terms and conditions. Corrosion and paint system warranty is provided by the manufacturer of the metal sheeting component of the Products. The relevant manufacturer of the metal sheeting requires registration of that warranty and the Customer must comply with that registration requirement. For further information please visit:

BlueScope Steel warranty enquiry at: **https://warranties.bluescopesteel.com.au/site/**

Colorcote warranty enquiry at: **https://www.colorcote.co.nz/about-us/warranty-enquiry/**

Refer to ARCPANEL specific warranty information for full terms and conditions, including exclusions and minimum maintenance requirements. Structural product warranties for non-roofing applications are available on request.

Due to the ARCPANEL's policy of continued improvements to its Products and Systems, the specifications and detailed contained in its publications may change without notice. Please refer to ARCPANEL's Terms and Conditions which are available by contacting ARCPANEL on 1300 200 004 or by email info@arcpanel.com.au.

Smartek panel

ARCPANEL

Design, Detailing & Installation Guide

VERSION 2021

"I like the simplicity of the ARCPANEL insulated roof system. Architecturally, I was attracted to the incredible cantilevers provided with such a thin elegant profile. Structurally - it can achieve enormous spans and on an environmental note, it provides terrific thermal comfort and is re-usable."

Scott Carpenter
Scott Carpenter Architect

Fully customised insulated roofing solutions, using COLORBOND® steel

Architectural Panels Pty Ltd
P 1300 200 004 **W** www.arcpanel.com.au **E** info@arcpanel.com.au
42 Dacmar Rd | PO Box 1130 | Coolum Beach QLD 4573

Colorbond®
MADE BY AUSTRALIA