ARCPANEL

Product Colours & Span Tables

VERSION 2021

Refer to Design, Detailing & Installation Guide for full product information

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 & General Notes

ARCPANEL

Smartek Panel

FULLY INTEGRATED ROOF SYSTEM

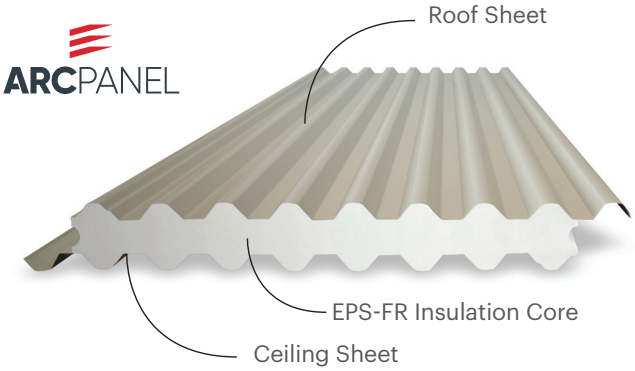
ARCPANEL Smartek roof panel combines aesthetic, innovative design, with high strength, durability and excellent thermal insulation. The ARCPANEL Smartek roof panel can achieve significant cantilevers, in some applications up to half the actual back span and this unique system eliminates the need for 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.

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

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® is a registered trademark of Bluescope Steel. Magnaflow is a registered trademark of Fletcher Steel Ltd.

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.

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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.

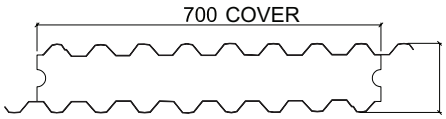
PANEL CONFIGURATIONS

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

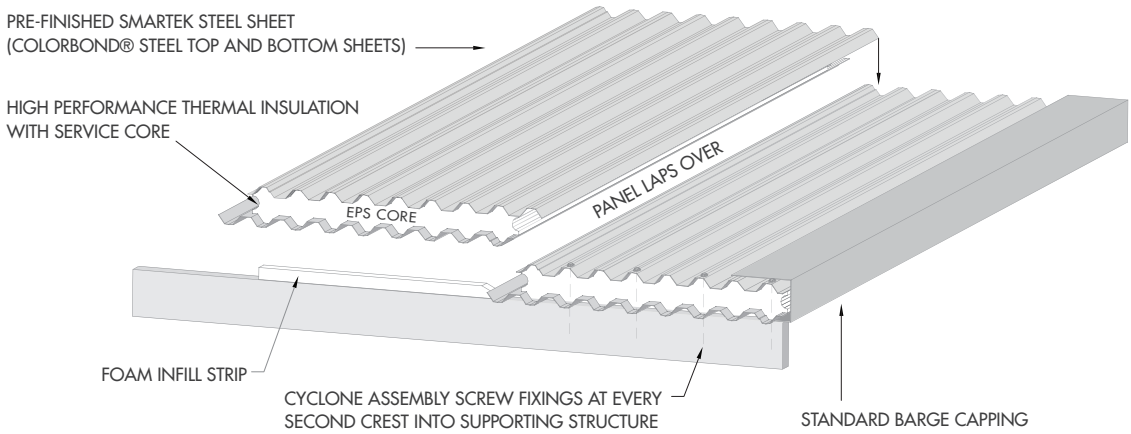
PANEL FINISH

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



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	Expanded Polystyrene with Flame Retardant	Ordered to Size	0.038 W/mK	COLORBOND® Steel COLORBOND® Ultra ZINCALUME®	COLORBOND® Steel COLORBOND® Ultra ZINCALUME®	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

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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.

NOTE: ABOVE SPAN TABLES ARE APPLICABLE TO ARCPANEL SMARTEK PANEL ONLY AND ARE ACHIEVABLE BY USING PROVEN MANUFACTURING METHODS AND PRODUCT TESTING. STRUCTURAL ADEQUACY OF THE PANEL IS CERTIFIED BY ARCPANEL CONSULTING ENGINEERS.

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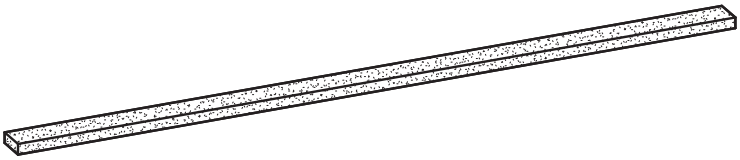
Accessory Information

OPEN-CELL FOAM INFILL STRIP (STANDARD)

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

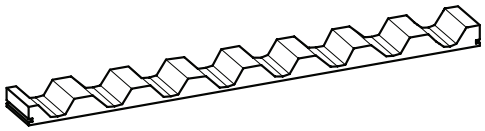


Where to use:

- 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

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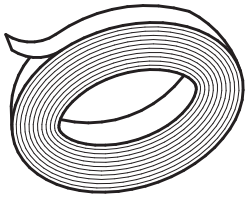
CLOSED-CELL FOAM TAPE

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

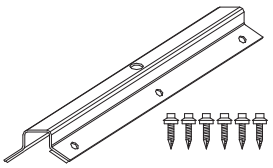


Where to use:

- 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

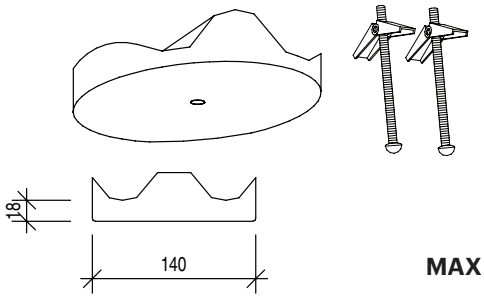
A profiled circular timber block is available to mount low voltage lights, pendant lights, ceiling fans etc. The timber block is supplied natural (unpainted), it will need to be painted or oiled on site to suit the ceiling colour. The mounting of the timber block is to be undertaken in the following 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



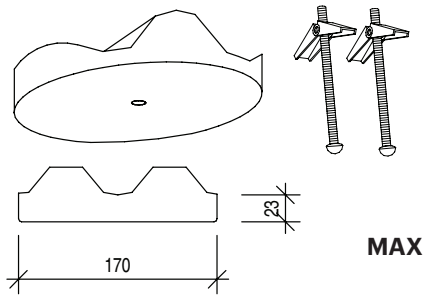
MAX LOAD = 20KG

CEILING MOUNTING KIT - 170MM

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

Where to use:

- Ideal for large fan installation
- Large light fittings



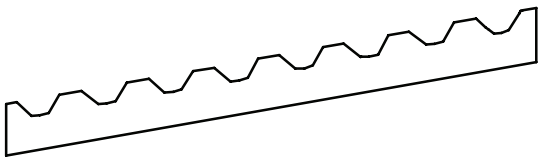
MAX LOAD = 20KG

CORRUGATED INFILL

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

Where to use:

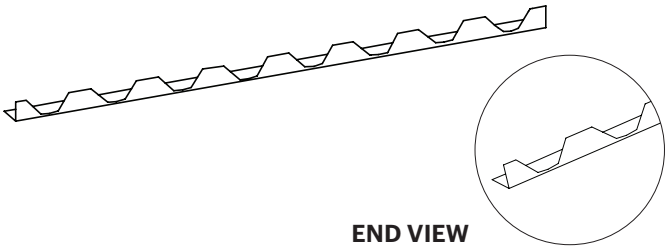
- The use of Corrugated Infill is required to fully seal wall/ soffit junctions.
- On internal / external walls or both. It is attached to the wall prior to installing the lining. It is used as a permanent barrier between the inside and outside. It is used on walls that run at 90 degrees to the run of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

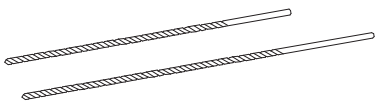
For all BAL-12.5, BAL-19 & BAL-29 applications refer to BAL detailing on pages 47-48.



END VIEW

DRILL BITS

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



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