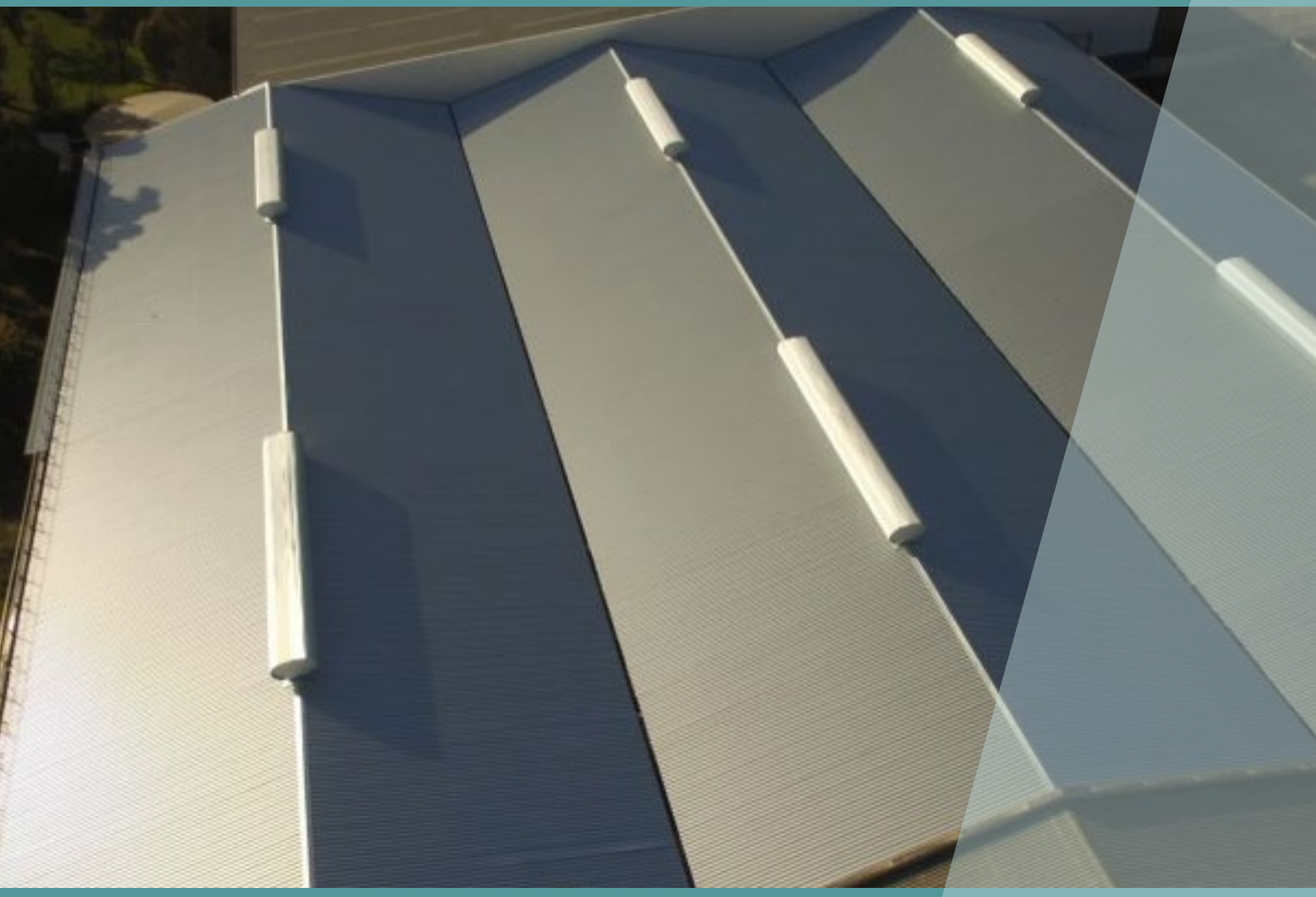
HI-DECK 650®

CONTINUOUS ROOF & WALL CLADDING



A Met-TECH™ GUIDE

SEPTEMBER 2021

Metroll®

BETTER SERVICE • BETTER BUILDING SOLUTIONS

HI-DECK 650®

Sheet Width: 725mm Cover: 650mm Height: 50mm

Hi-Deck 650® is custom length, high tensile steel roofing and wall sheeting manufactured from 0.42mm and 0.48mm BMT COLORBOND® and ZINCALUME® steels. Hi-Deck 650® is ideal for new and renovated commercial and industrial applications.

FEATURES & BENEFITS

- Custom lengths
- Long lengths
- Lightweight
- Ideal for commercial and industrial

HI-DECK 650® - ROOFING

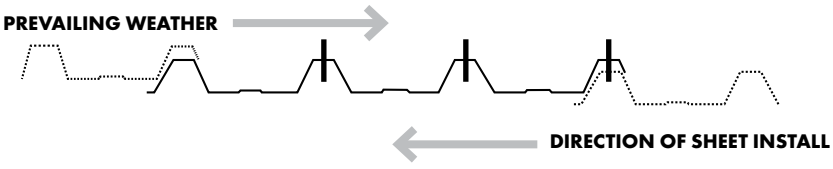
BMT mm	Steel Base Mpa	Mass Colorbond® kg/m²	Mass Zinc kg/m²	Min. Pitch°	Max Spans mm**	
					End	Internal
0.42	G550	5.04	4.96	1 (1 in 50)	2550	3200
0.48	G550	5.72	5.64	1 (1 in 50)	3100	3900
HI-DECK 650® - WALLING						
0.42	G550	5.04	4.96		3300	4150
0.48	G550	5.72	5.64		3600	4500

** Max. Spans are based on N2 Wind Category and 1.5mm substrate

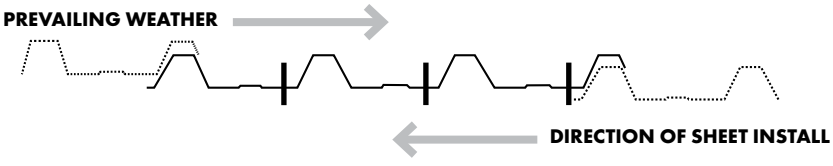
FASTENERS

Hi-Deck 650® may be fastened to timber or steel supports by conventional crest and pan fixing. There should be 3 fasteners per sheet at every support. Do not locate fasteners less than 50mm from sheet ends. Always face side laps away from the prevailing weather.

ROOFING



WALLING



TIMBER SUPPORTS OR METAL SUPPORTS ≤ 1.0mm THICK	**ROOFING**	12 x 95mm Hex Head Type 17 with seal
	WALLING	M6 x 25mm Roof Zips Hex Head with seal
METAL SUPPORTS 1.2 TO 3.0mm THICK	**ROOFING**	12 x 80mm Hex Head Self Drilling screw with seal
	WALLING	M6 x 25mm Roof Zips Hex Head with seal
SIDE LAPS		10 x 16mm Hex Head Self Drilling screw with seal

What is Met-TECH™?

Met-TECH™ is Metroll's Technical Resource Centre. It is the one stop shop for all of Metroll's product and technical information. Perfect for builders, contractors and specifiers to source all the information they may require. You can find other Met-TECH™ items on our website **www.metroll.com.au/resources**

ROOF PITCH & END LAPS

For roofs with continuous sheets and no end laps the minimum roof pitch is 1° (1 in 50). This minimum pitch must be adhered to at all points of the roof to prevent ponding. For roofs with end laps the minimum lap is 200mm for pitches between 5° and 15°, and 150mm above 15°.

SIDE LAPS

It is considered good practice to use fasteners on side laps, although these are generally not necessary when the sheeting is supported as indicated in the maximum span tables or for roof spans under 900mm and wall cladding spans under 1200mm. Side lap fastening should be considered if the weather resistance joint is questionable for any reason.

THERMAL EXPANSION

Change in temperature will cause all metals to expand and contract. There is minimal effect with steel roofing however care must be taken when long sheet runs and used and high temperature variations occur. Metroll recommends the following maximum runs:

	Dark Colours	Light Colours
Hi-Deck 650®	Up to 17m	Up to 24m

DRAINAGE & OVERFLOW

Max Roof Run (m) for Slopes & Rainfall Intensity

Rainfall Intensity mm/hr.	Hi-Deck 650® Roof Slope					
	1°	2°	3°	4°	5°	10°
100	143	180	209	234	256	348
150	95	120	139	156	171	232
200	71	90	104	117	128	174
250	57	72	83	93	102	139
300	47	60	69	78	85	116
400	35	45	52	58	64	87

- Rainwater run-off and drainage capacity may place some limitations on the total length of a sheet run and must be considered during the design and construction phase of a project.
- The total length of roof sheeting; which shall include end laps, expansion joints or steps and draining the roof in one direction, shall be considered as a single roof run.
- Thermal expansion must also be considered.
- Maximum production and transport lengths may limit availability.

WALKING ON HI-DECK 650®

When walking on Hi-Deck 650® roof sheeting always wear flat rubber soled shoes and walk in the pans of the sheet.

HI-DECK 650® FOOT TRAFFIC

BMT (mm)	Internal (mm)	Equal (mm)	Double (mm)
0.42	3400	2800	2800
0.48	4000	3400	3400

- Foot traffic limits are based on AS/NZS 1170.1 for R2 - Other roofs.
- All traffic must use the designated foot traffic paths and,at all times, follow safe practices.

HI-DECK 650® OVERHANGS

The overhangs on Hi-Deck 650® are limited to the values in the following table. Overhangs have a minimum length of 50mm. Stiffened overhangs incorporate an angle or gutter attached to the sheet end.

ROOFING		
BMT (mm)	**Plain (mm)**	**Stiffened (mm)**
0.42	200	500
0.48	250	550
WALLING		
0.42	250	500
0.48	300	550

- Plain overhangs are limited to 20% of the adjacent end span.
- Stiffened overhangs are limited to 33% of the adjacent end span.

LENGTH

Metroll supplies Hi-Deck 650® cut to order as required; depending on load limit regulations set by local transport authorities. Lengths for manufacture need to be site measurements and not taken off plans. Length tolerance for Hi-Deck 650® is + 0mm, - 15mm.

MATERIAL SPECIFICATION & SCOPE

All roofing should be specified on drawings as Hi-Deck 650®, manufactured by Metroll and installed in accordance with the manufacturers recommendations. Base sheet steel is G550 with specified finish.

AVAILABILITY & DELIVERY

Hi-Deck 650® is available from Metroll WA and VIC. Contact your local Metroll branch for lead times, colours and availability.

Ensuring suitable arrangements are made to assist the unloading of Metroll trucks will help supply material in good order. When lifting long lengths by crane please ensure the load is evenly spread. Where a crane cannot be made available it is the customers responsibility to provide sufficient labour to assist the driver in unloading.

0.42mm HI-DECK 650® LIMIT STATE CAPACITY TABLES

Tables and values must be used in conjunction with the Design Notes to Limit State Capacity Tables.

0.42mm HI-DECK 650® WITH 3 FASTENERS PER SHEET

LIMIT STATE	SPAN TYPE	SUPPORT THICKNESS (mm)	PRESSURE (kPa) FOR SPAN (mm)													
			600	900	1200	1500	1800	2100	2400	2700	3000	3300	3600	3900	4200	4500
SERVICEABILITY	Internal	All	4.49	3.82	3.24	2.74	2.31	1.93	1.63	1.38	1.17	0.99	0.85	0.76	0.68	0.63
	End	All	4.08	3.47	2.95	2.49	2.10	1.76	1.49	1.25	1.06	0.90	0.78	0.69	0.62	0.57
	Double	All	3.59	3.06	2.60	2.19	1.84	1.54	1.31	1.11	0.93	0.79	0.69	0.61	0.54	0.50
STRENGTH	Internal	1.50+	8.86	5.64	4.15	3.55	3.27	2.94	2.41	2.13	1.89	1.68	1.52	1.39	1.29	1.23
		1.20	8.86	5.64	4.15	3.55	3.27	2.94	2.41	2.13	1.89	1.68	1.52	1.39	1.29	1.23
		1.00	8.86	5.64	4.15	3.55	3.27	2.86	2.41	2.13	1.89	1.68	1.52	1.39	1.29	1.23
		0.75	8.46	5.64	4.15	3.38	2.81	2.42	2.12	1.88	1.69	1.54	1.41	1.30	1.21	1.13
		0.55	6.15	4.10	3.08	2.46	2.05	1.76	1.54	1.37	1.23	1.12	1.03	0.95	0.88	0.82
		0.48	5.38	3.59	2.69	2.15	1.79	1.54	1.35	1.20	1.08	0.98	0.90	0.83	0.77	0.72
	End	1.50+	8.05	5.13	3.77	3.23	2.97	2.67	2.19	1.94	1.72	1.53	1.38	1.26	1.17	1.12
		1.20	8.05	5.13	3.77	3.23	2.97	2.67	2.19	1.94	1.72	1.53	1.38	1.26	1.17	1.12
		1.00	8.05	5.13	3.77	3.23	2.97	2.57	2.19	1.94	1.72	1.53	1.38	1.26	1.17	1.12
		0.75	7.62	5.08	3.77	3.05	2.54	2.18	1.90	1.69	1.52	1.38	1.27	1.17	1.09	1.02
		0.55	5.54	3.69	2.77	2.22	1.85	1.58	1.38	1.23	1.11	1.01	0.92	0.85	0.79	0.74
		0.48	4.85	3.23	2.42	1.94	1.62	1.38	1.21	1.08	0.97	0.88	0.81	0.75	0.69	0.65
	Double	1.50+	7.08	4.51	3.32	2.84	2.61	2.35	1.93	1.71	1.51	1.35	1.21	1.11	1.03	0.99
		1.20	7.08	4.51	3.32	2.84	2.61	2.31	1.93	1.71	1.51	1.35	1.21	1.11	1.03	0.99
		1.00	7.08	4.51	3.32	2.84	2.50	2.14	1.88	1.67	1.50	1.35	1.21	1.11	1.03	0.99
		0.75	6.35	4.23	3.17	2.54	2.12	1.81	1.59	1.41	1.27	1.15	1.06	0.98	0.91	0.85
		0.55	4.62	3.08	2.31	1.85	1.51	1.32	1.15	1.03	0.92	0.84	0.77	0.71	0.66	0.62
		0.48	4.04	2.69	2.02	1.62	1.35	1.15	1.01	0.90	0.81	0.73	0.67	0.62	0.58	0.54

DESIGN NOTES

- For timber battens/purlins, use 1.50+ support thickness values.
- Type 17 screws must penetrate more than 25mm into hardwood or 35mm into softwood.
- Metal supports are produced from hi-tensile steel.
- For most economic results use longer internal spans than end spans (in a ratio of 10:8).
- Equal span systems must be designed using end span values.

0.48mm HI-DECK 650® LIMIT STATE CAPACITY TABLES

Tables and values must be used in conjunction with the Design Notes to Limit State Capacity Tables

0.48mm HI-DECK 650 WITH 3 FASTENERS PER SHEET

LIMIT STATE	SPAN TYPE	SUPPORT THICKNESS (mm)	PRESSURE (kPa) FOR SPAN (mm)													
			600	900	1200	1500	1800	2100	2400	2700	3000	3300	3600	3900	4200	4500
SERVICEABILITY	Internal	All	7.41	5.38	4.12	3.39	2.96	2.44	2.02	1.69	1.43	1.25	1.08	0.95	0.83	0.71
	End	All	6.73	4.89	3.74	3.08	2.69	2.22	1.84	1.54	1.30	1.13	0.98	0.86	0.76	0.64
	Double	All	5.92	4.30	3.29	2.71	2.37	1.95	1.61	1.35	1.15	0.99	0.86	0.76	0.67	0.56
STRENGTH	Internal	1.50+	9.21	6.68	5.18	4.30	3.76	3.38	3.05	2.73	2.40	2.11	1.88	1.73	1.64	1.56
		1.20	9.21	6.68	5.18	4.30	3.59	3.08	2.69	2.39	2.15	1.96	1.79	1.66	1.54	1.44
		1.00	9.21	6.67	5.00	4.00	3.33	2.86	2.50	2.22	2.00	1.82	1.67	1.54	1.43	1.33
		0.75	8.46	5.64	4.23	3.38	2.82	2.42	2.12	1.88	1.69	1.54	1.41	1.30	1.21	1.13
		0.55	6.15	4.10	3.08	2.46	2.05	1.76	1.54	1.37	1.23	1.12	1.03	0.95	0.88	0.82
		0.48	5.38	3.59	2.69	2.15	1.79	1.54	1.35	1.20	1.08	0.98	0.90	0.83	0.77	0.72
	End	1.50+	8.37	6.07	4.71	3.91	3.42	3.07	2.77	2.48	2.18	1.92	1.71	1.57	1.49	1.42
		1.20	8..37	6.07	4.71	3.88	3.23	2.77	2.42	2.15	1.94	1.76	1.62	1.49	1.38	1.29
		1.00	8.37	6.00	4.50	3.60	3.00	2.57	2.25	2.00	1.80	1.64	1.50	1.38	1.29	1.20
		0.75	7.62	5.08	3.81	3.05	2.54	2.18	1.90	1.69	1.52	1.38	1.27	1.17	1.09	1.02
		0.55	5.54	3.69	2.77	2.22	1.85	1.58	1.38	1.23	1.11	1.01	0.92	0.85	0.79	0.74
		0.48	4.85	3.23	2.42	1.94	1.62	1.38	1.21	1.08	0.97	0.88	0.81	0.75	0.69	0.65
	Double	1.50+	7.37	5.34	4.14	3.44	3.01	2.70	2.44	2.18	1.92	1.69	1.50	1.38	1.31	1.25
		1.20	7.37	5.34	4.04	3.23	2.69	2.31	2.02	1.79	1.62	1.47	1.35	1.24	1.15	1.08
		1.00	7..37	5.00	3.75	3.00	2.50	2.14	1.88	1.67	1.50	1.36	1.25	1.15	1.07	1.00
		0.75	6.35	4.23	3.17	2.54	2.12	1.81	1.59	1.41	1.27	1.15	1.06	0.98	0.91	0.85
		0.55	4.62	3.08	2.31	1.85	1.54	1.32	1.15	1.03	0.92	0.84	0.77	0.71	0.66	0.62
		0.48	4.04	2.69	2.02	1.62	1.35	1.15	1.01	0.90	0.81	0.73	0.67	0.62	0.58	0.54

DESIGN NOTES

- For timber battens/purlins, use 1.50+ support thickness values.
- Type 17 screws must penetrate more than 25mm into hardwood or 35mm into softwood.
- Metal supports are produced from hi-tensile steel.
- For most economic results use longer internal spans than end spans (in a ratio of 10:8).
- Equal span systems must be designed using end span values.

0.42mm HI-DECK 650® SPAN CHART

Tables and values must be used in conjunction with the Design Notes

SPAN TYPE	SUPPORT THICKNESS (mm)	ROOF SPANS (mm) FOR WIND CATEGORY						WALL SPANS (mm) FOR WIND CATEGORY					
		N1	N2	N3	N4	N5	N6	N1	N2	N3	N4	N5	N6
Internal	1.50+	3400	3200	2200	1250	850	650	4500	4150	2800	2000	1100	850
	1.20	3400	3200	2200	1250	850	650	4500	4150	2800	2000	1100	850
	1.00	3400	3200	2200	1250	850	650	4500	4150	2800	1950	1100	850
	0.75	3400	2900	1850	1250	850	600	4500	3900	2500	1650	1100	800
	0.55	2950	2100	1350	900	600		3900	2800	1800	1200	800	600
	0.48	2550	1850	1150	800			3400	2450	1550	1050	700	600
End	1.50+	2800	2550	1750	1000	650		3600	3300	2200	1600	850	650
	1.20	2800	2550	1750	1000	650		3600	3300	2200	1600	850	650
	1.00	2800	2550	1750	1000	650		3600	3300	2200	1550	850	650
	0.75	2800	2300	1450	1000	650		3600	3100	2000	1300	850	650
	0.55	2350	1650	1050	700			3100	2200	1400	950	600	600
	0.48	2000	1450	900	600			2700	1950	1200	800	600	600
Double	1.50+	2800	2650	1650	1000	700		4150	3400	2300	1350	900	700
	1.20	2800	2650	1650	1000	700		4150	3400	2300	1350	900	700
	1.00	2800	2550	1650	1000	700		4150	3400	2200	1350	900	700
	0.75	2800	2150	1350	900	600		4050	2900	1850	1250	850	600
	0.55	2200	1550	1000	650			2900	2100	1350	900	600	
	0.48	1900	1350	850	600			2550	1800	1150	750		

DESIGN NOTES

- Spans shown reflect the minimum value of the Serviceability, Strength and Foot Traffic tables.
- The Wind Category is based on AS 4055 and results include an allowance for local pressure factors.
- If roof pitch is less than 10 degrees, then increase the Wind Category upwards by 1, e.g. lift N2 to N3, and apply to an area not less than 1.2m from all corners.
- For timber battens/purlins use 1.5+ support thickness values.
- Fasteners must penetrate more than 25mm into hardwood or 35mm into softwood.
- Refer to the fastener location guide for correct fastener locations.
- Metal supports are produced from hi-tensile steel.
- For most economic results use longer internal spans than end spans (in a ratio of 10:8).
- Equal span systems must be designed using end span values.

0.48mm HI-DECK 650® SPAN CHART

Tables and values must be used in conjunction with the Design Notes

SPAN TYPE	SUPPORT THICKNESS (mm)	ROOF SPANS (mm) FOR WIND CATEGORY						WALL SPANS (mm) FOR WIND CATEGORY					
		N1	N2	N3	N4	N5	N6	N1	N2	N3	N4	N5	N6
Internal	1.50+	4000	3900	2700	1650	1050	700	4500	4500	3400	2400	1450	1000
	1.20	4000	3700	2350	1600	1050	700	4500	4500	3150	2100	1450	1000
	1.00	4000	3450	2200	1450	1000	700	4500	4500	2950	1950	1350	1000
	0.75	4000	2900	1850	1250	850	600	4500	3900	2500	1650	1100	800
	0.55	2950	2100	1350	900	600		3900	2800	1800	1200	800	600
	0.48	2550	1850	1150	800			3400	2450	1550	1050	700	
End	1.50+	3400	3100	2150	1300	800		3600	3600	2700	1900	1150	800
	1.20	3400	2950	1900	1250	800		3600	3600	2500	1700	1150	800
	1.00	3400	2750	1750	1150	800		3600	3600	2350	1550	1050	800
	0.75	3200	2300	1500	1000	650		3600	3100	2000	1300	900	650
	0.55	2350	1700	1050	700			3100	2250	1450	950	650	
	0.48	2050	1450	950	600			2700	1950	1250	850		
Double	1.50+	3400	3200	2100	1250	800		4500	4250	2850	1800	1100	800
	1.20	3400	2800	1750	1200	800		4500	3700	2350	1600	1050	800
	1.00	3400	2600	1650	1100	750		4500	3450	2200	1450	1000	750
	0.75	3000	2200	1400	900	600		4050	2900	1850	1250	850	600
	0.55	2200	1600	1000	650			2900	2100	1350	900	600	
	0.48	1900	1400	850	600			2550	1850	1150	800		

DESIGN NOTES

- Spans shown reflect the minimum value of the Serviceability, Strength and Foot Traffic tables.
- The Wind Category is based on AS 4055 and results include an allowance for local pressure factors.
- If roof pitch is less than 10 degrees, then increase the Wind Category upwards by 1, e.g. lift N2 to N3, and apply to an area not less than 1.2m from all corners.
- For timber battens/purlins use 1.5+ support thickness values.
- Fasteners must penetrate more than 25mm into hardwood or 35mm into softwood.
- Refer to the fastener location guide for correct fastener locations.
- Metal supports are produced from hi-tensile steel.
- For most economic results use longer internal spans than end spans (in a ratio of 10:8).
- Equal span systems must be designed using end span values.

MATERIAL COMPATIBILITY

Never use lead flashings with Hi-Deck 650® sheeting made from COLORBOND® and ZINCALUME®steels. Avoid drainage from copper roofs onto COLORBOND®, ZINCALUME® or galvanised steel roofing or rainwater products. Lead, copper, bare metal and some chemically treated timbers are not compatible with Hi-Deck 650®.

ADVERSE CONDITIONS

Localised environmental conditions can impact the corrosive nature of a site which may impact on material choice. Conditions that may impact on material choice include; direction of prevailing winds, rainfall intensity, duration of exposure, temperature, shelter and areas not washed by rainfall. Contact your local Metroll branch if you intend to use Hi-Deck 650® within 1 km of industrial, chemical, marine or corrosive environments.

CARE, HANDLING & STORAGE

Care should be taken at all times when handling sheets to preserve the quality of the finish. Keep packs dry, stored clear of the ground and protected from rain and moisture. Any sheets which become wet should be separated, wiped and placed in the open air to dry.

CUTTING

Cut sheets with a method and in a location so that damage is avoided to sheets and other building products. Material should be cut on the ground and not above other materials. Remove all swarf and debris from the work and installation area. Sheets may be cut using a power saw with a steel cutting blade, a power nibbler or with tin snips. Avoid using abrasive discs as these can cause edge and coating damage.

CLEAN UP

Prior to departing the work site remove all foreign debris, screws, rivets and especially any swarf created by drilling or cutting from the roof surface and/or inside gutters. Failure to do so may result in premature corrosion of the roof or gutters.

QLD

Cairns	07 4054 0888
Townsville	07 4779 8266
Mackay	07 4968 1255
Rockhampton	07 4920 0900
Bundaberg	07 4155 5999
Toowoomba	07 4634 6144
Sunshine Coast	07 5493 7872
Brisbane	07 3375 0100

NSW

Lismore	02 6622 6677
Tamworth	02 6765 4799
Newcastle	02 4954 5799
Sydney	1300 766 346
Dubbo	02 6883 4800
Wagga Wagga	02 5924 4500
Canberra	02 6298 2777

VIC

Preston	03 9480 3744
Laverton	03 8369 8300
Geelong	03 5248 2006
Ballarat	03 5335 6416
Pakenham	03 8710 9300

SA

Adelaide	08 8282 3300

TAS

Hobart	03 6335 8555
Launceston	03 6335 8555

NT

Darwin	08 8935 9555

WA

Perth	08 9365 5444
Bunbury	08 9796 9796
Albany	08 9841 6966

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