

**ROOF DESIGN CAPACITY TABLES**

CLADDING CREST FASTENED WITH CYCLONIC WASHERS  
 - ULTIMATE LIMIT STATE PRESSURE (kPa)

SPAN (mm)	0.42 BMT			0.48 BMT		
	SINGLE	END	INTERNAL	SINGLE	END	INTERNAL
450	-	-	-	-	13.05	13.05
600	8.64	8.10	10.13	10.80	11.7	11.7
900	6.19	5.18	7.34	6.98	6.54	8.65
1200	4.05	3.01	5.05	4.05	5.05	6.68
1500	2.23	1.58	3.27	2.02	3.69	4.88
1800	0.72	0.90	1.99	0.88	2.46	3.25
2100	N/A	N/A	N/A	N/A	1.36	1.80

**MAXIMUM SUPPORT SPACING (mm)**

SPAN TYPE	0.42 BMT	0.48 BMT
SINGLE	700	800
END	900	1300
INTERNAL	1200	1700
EAVE UNSTIFFENED	200	250
OVERHANG STIFFENED	300	350

THE MAXIMUM SUPPORT SPACING CONSIDERS LIGHT ROOF TRAFFIC FROM INCIDENTAL MAINTENANCE.

NOTE: CLADDING SPAN SHALL NOT EXCEED THE MAXIMUM SPAN FOR CLADDING (SHEET 1) OR THE MAXIMUM BATTEN SPACING (SHEET 2)

**MAXIMUM SPAN TABLES FOR TIMBER & STEEL SUPPORT >=1.5 (mm)**

BUILDING HEIGHT	TERRAIN CATEGORY	K1	Pz (kPa)	CREST FASTENED WITH CYCLONIC WASHERS, 0.42BMT			CREST FASTENED WITH CYCLONIC WASHERS, 0.48BMT		
				SINGLE	END	INTERNAL	SINGLE	END	INTERNAL
				<b>UP TO 5M</b>					
UP TO 5M	1	1	4.57	1120	980	1280	1140	1300	1550
		1.5	5.86	940	830	1090	1010	1030	1330
		2	7.15	780	690	920	880	860	1120
	2	1	3.44	1300	1140	1470	1280	1560	1760
		1.5	4.40	1150	1000	1300	1160	1340	1580
		2	5.37	1010	880	1150	1060	1130	1410
	2.5	1	3.49	1290	1130	1460	1280	1540	1750
		1.5	4.02	1200	1060	1370	1200	1420	1650
		2	4.91	1070	930	1220	1110	1230	1490
	3	1	2.86	1390	1230	1590	1370	1700	1880
		1.5	3.66	1260	1110	1430	1250	1500	1720
		2	4.47	1140	990	1290	1150	1320	1570
4	1	2.33	1480	1340	1710	1450	1830	1990	
	1.5	2.99	1370	1200	1560	1350	1670	1850	
	2	3.65	1260	1110	1430	1250	1500	1720	
UP TO 10M	1	1	5.2	1030	890	1180	1080	1160	1440
		1.5	6.67	840	740	980	930	890	1200
		2	8.13	660	N/A	810	800	800	970
	2	1	4.15	1180	1040	1350	1180	1390	1630
		1.5	5.32	1020	880	1160	1060	1140	1420
		2	6.48	860	760	1010	950	910	1230
	2.5	1	3.51	1280	1130	1450	1270	1540	1750
		1.5	4.5	1130	990	1290	1150	1320	1560
		2	5.49	990	860	1140	1050	1110	1390
	3	1	2.86	1390	1230	1590	1370	1700	1880
		1.5	3.66	1260	1110	1430	1250	1500	1720
		2	4.47	1140	990	1290	1150	1320	1570
4	1	2.33	1480	1340	1710	1450	1830	1990	
	1.5	2.99	1370	1200	1560	1350	1670	1850	
	2	3.65	1260	1110	1430	1250	1500	1720	
UP TO 10M	4	3	4.96	1070	930	1210	1100	1210	1480

**RECOMMENDED ROOF FASTENERS FOR STEEL SUPPORTS** ONLY FASTENERS NOTED CAN BE USED IN THIS DTCM SHEET.

SCREW NOTATION CODE:	STEEL THICKNESS	CLASS 4 : SELF DRILLING & TAPPING HEX HEAD SCREW WITH EPDM SEAL
HH DENOTED - HEX. HEAD T17 " - TYPE 17	SINGLE: 1.0mm UP TO 3.0mm bmt	#14 - 10 x 42 HH (CREST FIX)
HG " - HIGH GRIP	SINGLE/LAPPED: 0.75mm UP TO 1.0mm bmt (total 2.0mm)	M6.5 (#14) - 12 x 55 CYCLONIC ROOFZIP (CREST FIX)
TG " - TOP GRIP	LAPPED: 1.0mm UP TO 1.9mm bmt (total 3.8mm)	#14 - 10 x 42 HH (CREST FIX)

**RECOMMENDED ROOF FASTENERS FOR TIMBER SUPPORTS**

STRENGTH GROUP	CLASS 4 : SELF DRILLING HEX HEAD SCREW WITH EPDM SEAL
HARDWOOD J1-J3	#12 - 11 x 50 T17 HG/TG HH (CREST FIX)
SOFTWOOD J4	M6 - 11 x 50 ROOFZIPS (CREST FIX) #14 - 10 x 50 T17 HH (CREST FIX)

Notes covering basis of DTC (Relevant test reports etc)  
 1. CUSTOM ORB 0.42 + 0.48 BMT CYCLONIC ROOF & WALL PRESSURE TESTS. PROJECT #501282. JUNE 2008. BLUESCOPE STEEL LYSAGHT No 7 FERNGROVE PLACE, CHESTER HILL 2162 NSW - AUSTRALIA.  
 2. STATIC & CYCLIC FATIGUE WITHDRAWAL CAPACITIES OF SELF DRILLING SCREWS IN TIMBER SUPPORTS. REPORT: 5.1.2-REPORT 05. DECEMBER 2010. LYSAGHT No 27 STERLING RD, MINCHINBURY 2770 NSW - AUSTRALIA.  
 3. CYCLIC PULLOUT CAPACITIES OF BUILDEX M6.5-12X55 CYCLONIC ZIP SCREWS. REPORT: 5.1.3 - REPORT 05. JUNE 2010. BLUESCOPE LYSAGHT No 27 STERLING RD, MINCHINBURY 2770 NSW - AUSTRALIA.  
 4. SCREW PULLOUT CAPACITIES TO BUILDING CODES OF AUSTRALIA'S LOW-HIGH-LOW CYCLONIC TEST REGIME. REPORT: 5.1.2 - REPORT 02. SEPTEMBER 2009. LYSAGHT No 27 STERLING RD, MINCHINBURY 2770 NSW - AUSTRALIA.

Checking Engineer  
 Name: SANDEEP SHARMA  
 Registration Number: MIE AUST. 3101165  
 Date: 06/12/2021  
 Signature:   
 Must be an Australian registered structural engineer

Certifying Engineer  
 Name: STEPHEN HEALEY  
 NT Registration Number: 34856ES  
 Date: 08/12/2021  
 Signature:   
 Must be a registered structural engineer in the Northern Territory

**Product Name**  
 CUSTOM ORB - ROOFING FOR CYCLONIC REGIONS - SHEET 1 OF 2

**Product Description**  
 CUSTOM ORB ROOFING IS MANUFACTURED FROM 0.42mm & 0.48mm BMT G550, AM125 ZINCALUME, AM100 COLORBOND/COLORBOND METALLIC, AM150 COLORBOND ULTRA. Z450 GALVASPAN MATERIAL IS AVAILABLE IN SOME LOCATIONS.

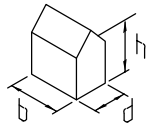
**Manufacturer's Name**  
 LYSAGHT  
 BlueScope Steel Limited  
 A.B.N. 16 000 011 058  
 Trading as Lysaght



**Design Criteria**

- A. THE FOLLOWING CRITERIA FROM AS/NZS 1170.2:2011 STRUCTURAL DESIGN ACTIONS PART 2: WIND ACTIONS (INCORPORATING AMENDMENT No. 1, 2, 3, 4 & 5) HAVE BEEN USED TO GENERATE THE TABLES.
1. IMPORTANCE LEVEL 2 WITH RETURN PERIOD OF 500 YEARS
  2. VR = 66xFc = 66x1.05 = 69.3 m/sec
  3. Ms = Mt = Md = 1.0
  4. Cpe = -0.9; Cpi = +0.7 Kce & Kci = 0.9
  5. HEIGHT MULTIPLIERS FROM TABLE 4.1 OF AS/NZS 1170.2:2011 STRUCTURAL DESIGN ACTIONS PART 2: WIND ACTIONS (INCORPORATING AMENDMENT No. 1, 2, 3, 4 & 5) HAVE BEEN USED TO GENERATE THE TABLES.

HEIGHT (m)	TERRAIN / HEIGHT MULTIPLIER (Mz,cat)				
	1	2	2.5	3	4
<=5	1.05	0.91	0.87	0.83	0.75
<=10	1.12	1.00	0.92	0.83	0.75



- B. CUSTOM ORB COMPLIES WITH AUSTRALIAN STANDARDS FOR THE FOLLOWING REQUIREMENTS:
1. SERVICEABILITY: AS/NZS 1170.0: 2002 STRUCTURAL DESIGN ACTIONS PART 0: GENERAL PRINCIPLES (INCORPORATING AMENDMENT 1,2,3,4&5)
  2. WIND LOADING: AS/NZS 1170.2: 2011 STRUCTURAL DESIGN ACTIONS PART 2: WIND ACTION (INCORPORATING AMENDMENT No. 1, 2, 3, 4 & 5)
  3. CONCENTRATED LOAD AT MAXIMUM SPAN: AS 4040.0-1992: METHODS OF TESTING SHEET ROOF AND WALL CLADDING - INTRODUCTION, LIST OF METHODS AND GENERAL REQUIREMENTS; AS 4040.1-1992: METHODS OF TESTING SHEET ROOF AND WALL CLADDING - RESISTANCE TO CONCENTRATED LOADS
- C. DESIGN TABLES ARE BASED ON TEST RESULTS IN ACCORDANCE TO NCC-2019, BUILDING CODE OF AUSTRALIA REQUIREMENTS FOR "LHL" CYCLONIC TEST FOR METAL ROOFS AND RELEVANT CLAUSES OF AS4600:2018 COLD-FORMED STEEL STRUCTURES
- D. PRODUCT METALLIC COATING COMPLIES WITH AS 1397-2021: CONTINUOUS HOT-DIP METALLIC COATED STEEL SHEET AND STRIP - COATINGS OF ZINC AND ZINC ALLOYED WITH ALUMINIUM AND MAGNESIUM & AS/NZS 2728: 2013 PREFINISHED/PREPAINTED SHEET METAL PRODUCTS FOR INTERIOR/EXTERIOR BUILDING APPLICATIONS - PERFORMANCE REQUIREMENTS

**Limitations**

1. THE DATA IN THIS SHEET SHALL BE APPLICABLE TO CUSTOM ORB ROOFING ONLY. PROFILE DIMENSIONS OF CUSTOM ORB AS SUPPLIED FOR INSTALLATION SHALL COMPLY WITH CUSTOM ORB PRODUCT DRAWINGS AS DEVELOPED BY LYSAGHT.
2. WALL DESIGN CAPACITY TABLES & MAXIMUM SPAN TABLES HAVE BEEN DEVELOPED FOR TIMBER SUPPORTS & STEEL SUPPORTS 1.5mm BMT OR THICKER. FOR STEEL SUPPORT LESS THAN 1.50mm BMT, REFER TO APPROPRIATE DTCM SHEET FOR MAXIMUM BATTEN SPACING.
3. INSTALLATION SHALL BE IN ACCORDANCE WITH LYSAGHT CYCLONIC AREA DESIGN MANUAL AND CUSTOM ORB MANUAL.  
<https://cdn.dcs.lysaght.com/download/lysaght-cyclonic-design-manual-steel-roofing-walling-topspan>
4. MAXIMUM SPAN TABLES ARE BASED ON MAXIMUM ROOF HEIGHT = 10M.
5. MAXIMUM OVERHANG SHALL BE DETAILED ACCORDING TO CURRENT LYSAGHT ROOFING & WALLING INSTALLATION MANUAL.
6. Pz (PRESSURE) IN THE TABLES SHALL BE INCREASED ACCORDING TO AS/NZS 1170.2:2011, STRUCTURAL DESIGN ACTIONS PART 2: WIND ACTIONS (INCORPORATING AMENDMENT. No 1,2,3,4& 5) AS/NZS 1170.2: 2011 CLAUSE 5.4.1 IN THE CASE OF: ELEVATED BUILDING ALLOWING FOR AIR FLOW UNDER h/d > 0.5\*
7. NO PRE-BORED HOLES PERMITTED.
8. ALWAYS WALK OVER SUPPORTS IF POSSIBLE. GENERALLY KEEP YOUR WEIGHT DISTRIBUTED EVENLY OVER THE SOLES OF YOUR SHOES.
9. MAX. CUSTOM ORB ROOF LENGTHS AS RELATED TO ROOF CARRYING CAPACITY & ROOF PITCH SHALL BE DETERMINED USING THE CUSTOM ORB DESIGN & INSTALLATION GUIDE:  
<https://cdn.dcs.lysaght.com/download/lysaght-roofing-walling-installation-manual>
10. INCREASE SCREW LENGTH IF FIXING OVER INSULATION TO MAINTAIN A MIN. OF 3 SCREW THREADS PROTRUDING ON THE FAR SIDE STEEL SUPPORT.
11. FOR STRENGTH GROUPS OF TIMBER, REFER TO AS 1720.2: 2006 TIMBER STRUCTURES PART 2: TIMBER PROPERTIES (INCORPORATING AMENDMENT No. 1).

Accepted for Inclusion in Deemed to Comply Manual

DTCM drawing number: M/193/01-02

Chairperson Signature:

Chairperson Name: Paul Nowland

Date of Approval: 20/12/2021 Expiry Date: 20/12/2026

**MAXIMUM BATTEN SPACING TABLES FOR 0.75mm & 1.0mm BMT STEEL BATTENS (mm)**

BUILDING HEIGHT	TERRAIN CATEGORY	Kt	pz (kPa)	TS4075					TS6175					TS6110						
				BATTEN SPAN (SUPPORT SPACING), mm					BATTEN SPAN (SUPPORT SPACING), mm					BATTEN SPAN (SUPPORT SPACING), mm						
				≤600	900	1200	1500	1800	≤1500	2000	2500	3000	3500	4000	≤1500	2000	2500	3000	3500	4000
UP TO 5M	1	1	4.57	1135	805	525	400	270	785	585	320	245	205	N/A	785	585	470	360	260	205
		1.5	5.86	885	625	410	310	210	610	455	250	N/A	N/A	N/A	610	455	365	280	200	N/A
		3	9.72	535	375	245	N/A	N/A	500	370	205	N/A	N/A	N/A	500	375	300	230	N/A	N/A
	2	1	3.44	1510	1065	700	530	360	1040	775	430	325	270	215	1040	780	625	480	345	270
		1.5	4.40	1180	835	545	415	280	815	605	335	255	210	N/A	815	610	490	375	270	210
		3	7.30	710	500	330	250	N/A	490	365	200	N/A	N/A	N/A	490	365	295	225	N/A	N/A
	2.5	1	3.49	1490	1050	690	520	355	1025	765	420	320	265	210	1025	770	615	475	340	265
		1.5	4.02	1295	915	595	455	310	890	665	365	280	230	N/A	890	665	535	410	295	230
		3	6.67	780	550	360	270	N/A	535	400	220	N/A	N/A	N/A	535	400	320	245	N/A	N/A
	3	1	2.86	1820	1285	840	635	435	1255	935	515	395	325	255	1255	940	755	580	415	325
		1.5	3.66	1420	1005	655	500	340	980	730	400	305	255	200	980	730	590	450	325	255
		3	6.07	855	605	395	300	205	590	440	240	N/A	N/A	N/A	590	440	355	270	N/A	N/A
4	1	2.33	2230	1575	1030	785	535	1540	1150	635	480	400	315	1540	1150	925	710	515	400	
	1.5	2.99	1740	1230	805	610	415	1200	895	490	375	310	245	1200	895	720	555	400	310	
	3	4.96	1045	740	485	365	250	720	540	295	225	N/A	N/A	720	540	435	330	240	N/A	
UP TO 10M	1	1	5.20	1000	705	460	350	240	690	515	280	215	N/A	N/A	690	515	415	315	230	N/A
		1.5	6.67	780	550	360	270	N/A	535	400	220	N/A	N/A	N/A	535	400	320	245	N/A	N/A
		3	11.06	470	330	215	N/A	N/A	320	240	N/A	N/A	N/A	N/A	320	240	N/A	N/A	N/A	N/A
	2	1	4.15	1250	885	580	440	300	865	645	355	270	225	N/A	865	645	520	400	285	225
		1.5	5.32	975	690	450	340	230	670	500	275	210	N/A	N/A	670	505	405	310	225	N/A
		3	8.82	590	415	270	200	N/A	405	300	N/A	N/A	N/A	N/A	405	300	240	N/A	N/A	N/A
	2.5	1	3.51	1480	1045	685	520	355	1020	760	420	320	265	210	1020	765	615	470	340	265
		1.5	4.50	1155	815	535	405	275	795	595	325	250	205	N/A	795	595	480	365	265	205
		3	7.46	695	490	320	245	N/A	480	355	N/A	N/A	N/A	N/A	480	360	285	220	N/A	N/A
	3	1	2.86	1820	1285	840	635	435	1255	935	515	395	325	255	1255	940	755	580	415	325
		1.5	3.66	1420	1005	655	500	340	980	730	400	305	255	200	980	730	590	450	325	255
		3	6.07	855	605	395	300	205	590	440	240	N/A	N/A	N/A	590	440	355	270	N/A	N/A
4	1	2.33	2230	1575	1030	785	535	1540	1150	635	480	400	315	1540	1150	925	710	515	400	
	1.5	2.99	1740	1230	805	610	415	1200	895	490	375	310	245	1200	895	720	555	400	310	
	3	4.96	1045	740	485	365	250	720	540	295	225	N/A	N/A	720	540	435	330	240	N/A	

**BATTEN SPACING TABLE NOTES:**

- MAXIMUM SPACING COULD BE GOVERNED BY CAPACITY OF BATTENS AND THEIR CONNECTIONS TO SUPPORTING RAFTERS/TRUSSES AS WELL AS PULL-OUT CAPACITIES OF FASTENERS CONNECTING CLADDINGS TO BATTEN.
- SPACING OF BATTENS SHALL NOT EXCEED BOTH MAXIMUM SPAN AND MAXIMUM SUPPORT SPACING OF CLADDING AS GIVEN IN SHEET 1.
- FASTENER REQUIREMENTS FOR FIXING **TS4075** TO SUPPORTS IN BATTEN SPACING TABLE:  
**STEEL SUPPORTS:**  
 - 1.00mm BMT: 2x #14(M6.5)-12X30 CYCLONIC ROOF ZIPS@  
 - 1.20~1.9mm BMT: 2x #14-10X25 HEX. HEAD SELF DRILLING SELF TAPPING TEKS@  
**TIMBER SUPPORTS:**  
 - 'BUILDEX' M6.5-12X30 CYCLONIC ROOF ZIPS = #14-12X30 CYCLONIC ROOF ZIPS
- FASTENER REQUIREMENTS FOR FIXING **TS6175** OR **TS6110** TO SUPPORTS IN BATTEN SPACING TABLE:  
**STEEL SUPPORTS:**  
 - 1.00mm BMT: 4x #14-10X25 HEX. HEAD SELF DRILLING SELF TAPPING TEKS@  
**TIMBER SUPPORTS:**  
 - 4x 'BUILDEX' #12(M5.5)-11x40 BATTENZIPS

**DESIGN CAPACITY TABLE NOTES:**

- STEEL SUPPORT FASTENER SPECIFICATION:  
 - 1.00mm BMT: #14(M6.5)-12X30 CYCLONIC ROOF ZIPS@  
 - 1.20~1.9mm BMT: #14-10X25 HEX. HEAD SELF DRILLING SELF TAPPING TEKS@  
 - 'BUILDEX' M6.5-12X30 CYCLONIC ROOF ZIPS = #14-12X30 CYCLONIC ROOF ZIPS
- TIMBER SUPPORT FASTENER SPECIFICATION: 'BUILDEX' #12(M5.5)-11x40 BATTENZIPS
- DESIGN CAPACITY TABLE CAN BE USED TO DESIGN TS4075, TS6175 & TS6110 WITH TIMBER SUPPORTS:  
 - 2 FASTENER CONNECTION: SOFTWOOD TIMBER = 1.5mm bmt STEEL SUPPORT, HARDWOOD TIMBER = 1.9mm bmt STEEL SUPPORT.  
 - 4 FASTENER CONNECTION: HARDWOOD/SOFTWOOD TIMBER SUPPORT = 1.9bmt STEEL SUPPORT.
- OUTWARD CAPACITY SHALL BE LIMITED BY THE MINIMUM VALUE BETWEEN MEMBER STRENGTH AND FASTENERS CAPACITY.
- TS4075** BATTEN SHALL BE CONTINUOUS OVER AT LEAST 2 SPANS, LAPPED 40mm MINIMUM AT THE SUPPORT (TRUSS OR RAFTER) LOCATIONS.
- TS6175** AND **TS6110** BATTENS SHALL BE CONTINUOUS OVER AT LEAST 2 SPANS, STRUCTURAL LAPPING DISTANCE AT SUPPORT IS MINIMUM 15% OF THE LONGER SPAN. NON STRUCTURAL LAPPING DISTANCE IS 40mm MINIMUM AT THE SUPPORT (TRUSS OR RAFTER) LOCATIONS.

**TS6175, TS6110 DESIGN CAPACITY TABLE - OUTWARD, CONTINUOUS/LAPPED SPAN**

ULTIMATE LIMIT STATE LOAD (kN/m)

SPAN (mm)	MEMBER STRENGTH (kN/m)		2 FASTENER CAPACITY (kN/m) SUPPORT THICKNESS (mm/bmt)				4 FASTENER CAPACITY (kN/m) SUPPORT THICKNESS (mm/bmt)			
	TS6175	TS6110	#14(M6.5)-12x30		#14-10x25		#14(M6.5)-12x30		#14-10x25	
			1.0mm	1.2mm	1.5mm	1.9mm	1.0mm	1.2mm	1.5mm	1.9mm
≤1500	4.31	5.88	1.90	2.48	3.10	4.12	2.67	3.59	4.52	5.41
2000	2.68	2.91	1.43	1.86	2.33	3.09	2.01	2.69	3.39	4.06
2500	1.48	2.17	1.14	1.49	1.86	2.47	1.60	2.16	2.71	3.25
3000	1.13	1.66	0.95	1.24	1.55	2.06	1.34	1.80	2.26	2.71
3500	0.94	1.20	0.82	1.06	1.33	1.76	1.15	1.54	1.94	2.32
4000	0.74	0.94	0.71	0.93	1.16	1.54	1.00	1.35	1.69	2.03

**TS4075 DESIGN CAPACITY TABLE - OUTWARD, CONTINUOUS SPAN**

ULTIMATE LIMIT STATE LOAD (kN/m)

SPAN (mm)	MEMBER STRENGTH (kN/m)	2 FASTENER CAPACITY (kN/m) SUPPORT THICKNESS (mm/bmt)				4 FASTENER CAPACITY (kN/m) SUPPORT THICKNESS (mm/bmt)			
		#14(M6.5)-12x30		#14-10x25		#14(M6.5)-12x30		#14-10x25	
	TS4075	1.0mm	1.2mm	1.5mm	1.9mm	1.0mm	1.2mm	1.5mm	1.9mm
≤600	7.98	5.51	7.19	8.99	11.93	7.75	10.41	13.09	15.69
900	4.72	3.68	4.79	5.99	7.95	5.16	6.94	8.73	10.46
1200	2.41	2.76	3.59	4.49	5.96	3.87	5.21	6.54	7.84
1500	1.83	2.21	2.88	3.60	4.77	3.10	4.16	5.24	6.27
1800	1.25	1.84	2.40	3.00	3.98	2.58	3.47	4.36	5.23

**NOTES:**

- REFER TO "TOPSPAN 61 ROOFING BATTENS FOR CYCLONIC REGIONS" & "TOPSPAN 4075 ROOFING BATTENS FOR CYCLONIC REGION FOR BATTEN" DTCM DRAWINGS FOR DIMENSIONS, SPACING, SPANS, CONNECTIONS DETAILS AND TEST REPORTS.
- 'FULL SCALE TOPSPAN 4075,6175,6110 ROOFING BATTENS TESTING TO BUILDING CODES OF AUSTRALIA'S LOW-HIGH-LOW CYCLONIC TEST', REGIME. INDEX No. 5.1.2 - REPORT 04, AUGUST 2010, BLUESCOPE LYSAGHT No. 27 STERLING RD, MINCHINBURY 2770 AUSTRALIA.
- 'WITHDRAWAL CAPACITIES OF TOPSPAN BATTEN TO TIMBER SUPPORT CONNECTIONS USING BUILDEX BATTENZIPS M5.5 - 11 x 40 FASTENERS', INDEX No. 5.1.2 - REPORT 06, DECEMBER 2010, BLUESCOPE LYSAGHT No. 27 STERLING RD, MINCHINBURY 2770 AUSTRALIA.
- 'PULLOUT CAPACITIES OF SCREW FASTENED CONNECTIONS THROUGH LYSAGHT TOPSPAN BATTENS TO STEEL PURLINS', INDEX No. 5.4.3 - REPORT 01, NOVEMBER 2010, BLUESCOPE LYSAGHT No. 27 STERLING RD, MINCHINBURY 2770 AUSTRALIA.

Checking Engineer

Name: SANDEEP SHARMA

Rego. Number: MIE AUST. 3101165

Date: 06/12/2021

Signature:

Must be an Australian registered structural engineer

Certifying Engineer

Name: STEPHEN HEALEY

NT Rego. Number: 34856ES

Date: 08/12/2021

Signature:

Must be a registered structural engineer in the Northern Territory

**Product Name**

CUSTOM ORB - ROOFING FOR CYCLONIC REGIONS - SHEET 2 OF 2

**Product Description**

CUSTOM ORB ROOFING IS MANUFACTURED FROM 0.42mm & 0.48mm BMT G550, AM125 ZINCALUME, AM100 COLORBOND/COLORBOND METALLIC, AM150 COLORBOND ULTRA. Z450 GALVASPAN MATERIAL IS AVAILABLE IN SOME LOCATIONS.

**Manufacturer's Name**

LYSAGHT

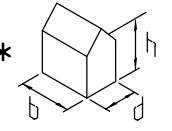
BlueScope Steel Limited  
 A.B.N. 16 000 011 058  
 Trading as Lysaght



**Design Criteria**

- A. THE FOLLOWING CRITERIA FROM AS/NZS 1170.2:2011 STRUCTURAL DESIGN ACTIONS PART 2: WIND ACTIONS (INCORPORATING AMENDMENT No. 1, 2, 3, 4 & 5) HAVE BEEN USED TO GENERATE THE TABLES.
- IMPORTANCE LEVEL 2 WITH RETURN PERIOD OF 500 YEARS
  - $VR = 66xFc = 66x1.05 = 69.3$  m/sec
  - $Ms = Mt = Md = 1.0$
  - $Cpe = -0.9$ ;  $Cpi = +0.7$   $Kce$  &  $Kci = 0.9$
  - HEIGHT MULTIPLIERS FROM TABLE 4.1 OF AS/NZS 1170.2:2011 STRUCTURAL DESIGN ACTIONS PART 2: WIND ACTIONS (INCORPORATING AMENDMENT No. 1, 2, 3, 4 & 5) HAVE BEEN USED TO GENERATE THE TABLES.

HEIGHT (m)	TERRAIN / HEIGHT MULTIPLIER (Mz,cat)				
	1	2	2.5	3	4
≤5	1.05	0.91	0.87	0.83	0.75
≤10	1.12	1.00	0.92	0.83	0.75



- B. CUSTOM ORB COMPLIES WITH AUSTRALIAN STANDARDS FOR THE FOLLOWING REQUIREMENTS:
- SERVICEABILITY: AS/NZS 1170.0: 2002 STRUCTURAL DESIGN ACTIONS PART 0: GENERAL PRINCIPLES (INCORPORATING AMENDMENT 1,2,3,4&5)
  - WIND LOADING: AS/NZS 1170.2: 2011 STRUCTURAL DESIGN ACTIONS PART 2: WIND ACTION (INCORPORATING AMENDMENT No. 1, 2, 3, 4 & 5)
  - CONCENTRATED LOAD AT MAXIMUM SPAN: AS 4040.0-1992: METHODS OF TESTING SHEET ROOF AND WALL CLADDING - INTRODUCTION, LIST OF METHODS AND GENERAL REQUIREMENTS; AS 4040.1-1992: METHODS OF TESTING SHEET ROOF AND WALL CLADDING - RESISTANCE TO CONCENTRATED LOADS
  - DESIGN TABLES ARE BASED ON TEST RESULTS IN ACCORDANCE TO NCC-2019, BUILDING CODE OF AUSTRALIA REQUIREMENTS FOR "LHL" CYCLONIC TEST FOR METAL ROOFS AND RELEVANT CLAUSES OF AS4600:2018 COLD-FORMED STEEL STRUCTURES
  - PRODUCT METALLIC COATING COMPLIES WITH AS 1397-2021: CONTINUOUS HOT-DIP METALLIC COATED STEEL SHEET AND STRIP - COATINGS OF ZINC AND ZINC ALLOYED WITH ALUMINIUM AND MAGNESIUM & AS/NZS 2728: 2013 PREFINISHED/PREPAINTED SHEET METAL PRODUCTS FOR INTERIOR/EXTERIOR BUILDING APPLICATIONS - PERFORMANCE REQUIREMENTS

**Limitations**

- THE DATA IN THIS SHEET SHALL BE APPLICABLE TO CUSTOM ORB ROOFING ONLY. PROFILE DIMENSIONS OF CUSTOM ORB AS SUPPLIED FOR INSTALLATION SHALL COMPLY WITH CUSTOM ORB PRODUCT DRAWINGS AS DEVELOPED BY LYSAGHT.
- WALL DESIGN CAPACITY TABLES & MAXIMUM SPAN TABLES HAVE BEEN DEVELOPED FOR TIMBER SUPPORTS & STEEL SUPPORTS 1.5mm BMT OR THICKER. FOR STEEL SUPPORT LESS THAN 1.5mm BMT, REFER TO APPROPRIATE DTCM SHEET FOR MAXIMUM BATTEN SPACING.
- INSTALLATION SHALL BE IN ACCORDANCE WITH LYSAGHT CYCLONIC AREA DESIGN MANUAL AND CUSTOM ORB MANUAL.  
<https://cdn.dcs.lysaght.com/download/lysaght-cyclonic-design-manual-steel-roofing-walling-topspan>
- MAXIMUM SPAN TABLES ARE BASED ON MAXIMUM ROOF HEIGHT = 10M.
- MAXIMUM OVERHANG SHALL BE DETAILED ACCORDING TO CURRENT LYSAGHT ROOFING & WALLING INSTALLATION MANUAL.
- Pz (PRESSURE) IN THE TABLES SHALL BE INCREASED ACCORDING TO AS/NZS 1170.2:2011, STRUCTURAL DESIGN ACTIONS PART 2: WIND ACTIONS (INCORPORATING AMENDMENT No. 1,2,3,4 & 5) AS/NZS 1170.2: 2011 CLAUSE 5.4.1 IN THE CASE OF: ELEVATED BUILDING ALLOWING FOR AIR FLOW UNDER h/d > 0.5\*
- NO PRE-BORED HOLES PERMITTED.
- ALWAYS WALK OVER SUPPORTS IF POSSIBLE. GENERALLY KEEP YOUR WEIGHT DISTRIBUTED EVENLY OVER THE SOLES OF YOUR SHOES.
- MAX. CUSTOM ORB ROOF LENGTHS AS RELATED TO ROOF CARRYING CAPACITY & ROOF PITCH SHALL BE DETERMINED USING THE CUSTOM ORB DESIGN & INSTALLATION GUIDE.