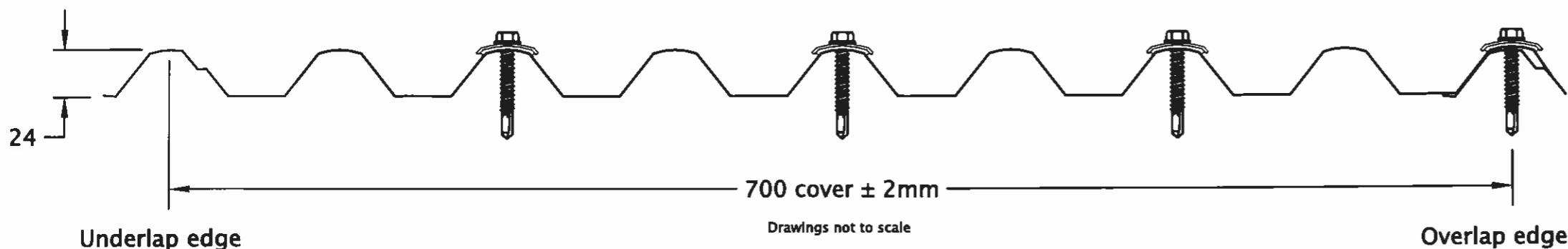




SMARTSPAN® ROOF CLADDING PERFORMANCE IN CYCLONIC REGION C

0.42mm and 0.48mm BMT ASI397/G550 AZ150



Maximum Allowable Spans (mm) for Region C

Terrain Category	KI	5m Building Height						10m Building Height							
		Pz (kPa)	0.42mm BMT			0.48mm BMT			Pz (kPa)	0.42mm BMT			0.48mm BMT		
			Single	End	Internal	Single	End	Internal		Single	End	Internal	Single	End	Internal
1 & 2	1	4.16	1350	1500	1590	1610	1610	1700	4.61	1350	1390	1480	1500	1500	1590
	1.5	5.33	1240	1240	1330	1350	1350	1440	5.91	1120	1120	1220	1240	1240	1340
	2	6.50	1020	1020	1120	1130	1130	1230	7.20	910	910	1000	1020	1020	1120
2.5	1	3.53	1350	1660	1750	1770	1770	1860	4.12	1350	1510	1600	1620	1620	1710
	1.5	4.52	1350	1410	1500	1520	1520	1610	5.28	1250	1250	1340	1360	1360	1450
	2	5.52	1200	1200	1300	1310	1310	1410	6.43	1030	1030	1130	1150	1150	1240
3 & 4	1	2.95	1350	1800	1930	1960	1960	2050	3.65	1350	1630	1720	1740	1740	1830
	1.5	3.78	1350	1590	1680	1700	1700	1790	4.68	1350	1380	1470	1490	1490	1580
	2	4.61	1350	1390	1480	1500	1500	1590	5.71	1160	1160	1260	1280	1280	1370

Design Pressures Pz - Ult. Limit State (kPa)

Span (mm)	0.42mm BMT			0.48mm BMT		
	Single	End	Internal	Single	End	Internal
1000	6.62	6.62	7.24	7.35	7.35	8.04
1300	5.05	5.05	5.53	5.61	5.61	6.13
1600	3.78	3.78	4.13	4.20	4.20	4.60
1900	2.79	2.79	3.05	3.13	3.13	3.42
2200	2.09	2.09	2.29	2.39	2.39	2.61
2500	1.68	1.68	1.84	1.99	1.99	2.17
2700	1.57	1.57	1.72	1.90	1.90	2.08

Fastener Details in Region C

Steel	1.5 - 4.0mm	Minimum 13 gauge x 50mm hex head screw with cyclonic washer assembly
Timber	Hardwood (F11)	Minimum 13 gauge hex head screw embedded at least 35mm into timber
	Softwood (F5)	Minimum 13 gauge hex head screw embedded at least 35mm into timber

Fixing Recommendations:

Smartspan sheets should be laid into the prevailing wind and sit neatly on the preceding roof sheet. They should be fixed within the recommended support spacings. Avoid 'stretching' the width of the sheet when installing, as this could allow wind and rain to enter. If the spans exceed 900mm, it is recommended that side lap fasteners are used at mid-span. Side lap fixing will help maintain a weather proof seal and will secure the overlap especially when the roof is walked on occasionally. This is best done with either 8 x 12mm self drilling screws or a 3.2mm blind rivet (rivets should be sealed to prevent water penetration). On roofing, at the end of the sheets, turn the pans up at the roof ridge and down into the gutter using a turn up/down tool.

Walking on Smartspan

When walking on Smartspan roofing, it is recommended you walk over the purlins to avoid any damage. Wear flat, rubber soled shoes and walk flat footed, spreading your weight over as many crests as possible. For carport and verandah applications, crawl boards should be used to avoid damage during installation and maintenance.

Maintenance Requirements:

The performance of Smartspan over time depends on its correct application and maintenance. Maintenance should be performed as often as is required to remove any dirt, salt and pollutants. Where Smartspan is used in severely corrosive environments, cleaning should be performed more often. It is important that screws have the same life expectancy as the Smartspan cladding you have specified. Packs of Smartspan should always be kept dry and stored above ground level on site. If the sheets have become wet, they should be separated, wiped and placed in the open to dry. Refer to the Stratco "Selection, Use and Maintenance" Brochure, for more detailed information about the correct use and maintenance of this product.

Carport / Verandah Spans in Region C

Terrain Category	Base Metal Thickness	
	0.42mm BMT	0.48mm BMT
1 & 2	1670	1780
2.5	1830	1950
3 & 4	2000	2150

JULY 2009

Design Criteria

The following criteria was used in the development of the tables:

1. Region C with a design return period of 500 yrs.
2. $V_r = F_d$ 66m/s (limit state), with $F_d = 1.05$
3. $M_s/M_t/M_d = 1.00$

Height (m)	Terrain/height Multiplier (M_z, cat)		
	1&2	2.5	3&4
≤ 5	0.95	0.88	0.80
≤ 10	1.0	0.95	0.89

Pressure coefficients:

Internal $C_{pi} = +0.7$

External $C_{pe} = -0.9$

Carport and Verandah Spans

The carport and verandah spans only apply to structures not enclosed by peripheral walls. Spans are based on height $\leq 5m$, $C_{pn} = -0.9$ and $KI = 1.5$ applied over the entire span, and are suitable for all span types. Loads on supporting purlins may limit these spans.

Stratco can provide additional engineering advice if any design parameters vary from those above.

Limitations

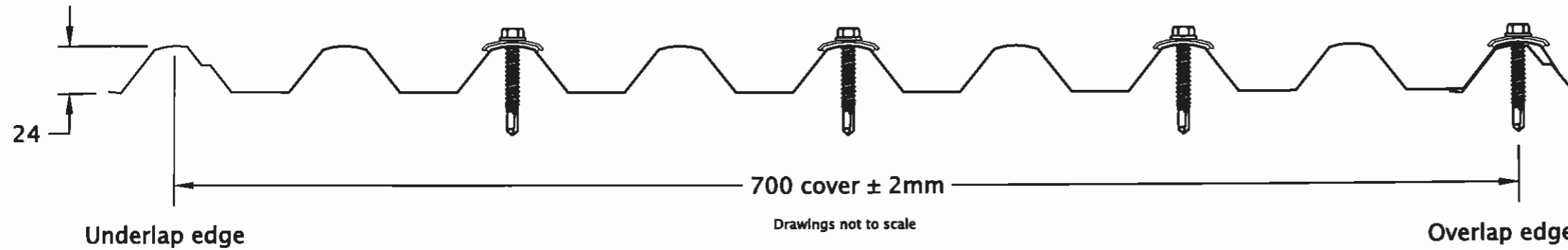
1. Design pressures and maximum allowable spans are based on five fasteners per sheet per support.
2. When fixing over insulation, screw length should be increased to ensure sufficient penetration of the fastener.
3. Maximum allowable overhang is 200mm for roof cladding.

Notes

1. Cyclonic Testing In accordance with Building Code of Australia (BCA) - Low-High-Low Pressure Testing.
2. Design Criteria are determined in accordance with AS/NZS1170.2 2002 Wind Actions.

SMARTSPAN® ROOF CLADDING PERFORMANCE IN CYCLONIC REGION D

0.42mm and 0.48mm BMT AS1397/G550 AZ150



Maximum Allowable Spans (mm) for Region D

Terrain Category	KI	5m Building Height						10m Building Height							
		Pz (kPa)	0.42mm BMT			0.48mm BMT			Pz (kPa)	0.42mm BMT			0.48mm BMT		
			Single	End	Internal	Single	End	Internal		Single	End	Internal	Single	End	Internal
1 & 2	1	6.71	980	980	1080	1100	1100	1200	7.43	890	890	970	980	980	1080
	1.5	8.60	770	770	840	850	850	930	9.53	690	690	760	770	770	840
	2	10.48	630	630	690	700	700	760	11.62	560	560	620	630	630	690
2.5	1	5.69	1170	1170	1260	1280	1280	1370	6.64	990	990	1090	1110	1110	1210
	1.5	7.29	900	900	990	1000	1000	1110	8.51	770	770	850	860	860	940
	2	8.89	740	740	810	820	820	900	10.37	630	630	690	700	700	770
3 & 4	1	4.76	1350	1360	1450	1470	1470	1560	5.89	1130	1130	1230	1240	1240	1340
	1.5	6.10	1090	1090	1190	1210	1210	1300	7.54	870	870	950	970	970	1070
	2	7.43	890	890	970	980	980	1080	9.20	710	710	780	790	790	870

Design Pressures Pz - Ult. Limit State (kPa)

Span (mm)	0.42mm BMT			0.48mm BMT		
	Single	End	Internal	Single	End	Internal
1000	6.62	6.62	7.24	7.35	7.35	8.04
1300	5.05	5.05	5.53	5.61	5.61	6.13
1600	3.78	3.78	4.13	4.20	4.20	4.60
1900	2.79	2.79	3.05	3.13	3.13	3.42
2200	2.09	2.09	2.29	2.39	2.39	2.61
2500	1.68	1.68	1.84	1.99	1.99	2.17
2700	1.57	1.57	1.72	1.90	1.90	2.08

Fastener Details in Region D

Steel	1.5 - 4.0mm	Minimum 13 gauge x 50mm hex head screw with cyclonic washer assembly
Timber	Hardwood (F11)	Minimum 13 gauge hex head screw embedded at least 35mm into timber
	Softwood (F5)	Minimum 13 gauge hex head screw embedded at least 35mm into timber

Fixing Recommendations:

Smartspan sheets should be laid into the prevailing wind and sit neatly on the preceding roof sheet. They should be fixed within the recommended support spacings. Avoid 'stretching' the width of the sheet when installing, as this could allow wind and rain to enter. If the spans exceed 900mm, it is recommended that side lap fasteners are used at mid-span. Side lap fixing will help maintain a weather proof seal and will secure the overlap especially when the roof is walked on occasionally. This is best done either 8 x 12mm self drilling stitching screws or a 3.2mm blind rivet (rivets should be sealed to prevent water penetration). On roofing, at the end of the sheets, turn the pans up at the roof ridge and down into the gutter using a turn up/down tool.

Walking on Smartspan

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Maintenance Requirements:

The performance of Smartspan over time depends on its correct application and maintenance. Maintenance should be performed as often as is required to remove any dirt, salt and pollutants. Where Smartspan is used in severely corrosive environments, cleaning should be performed more often. It is important that screws have the same life expectancy as the Smartspan cladding you have specified. Packs of Smartspan should always be kept dry and stored above ground level on site. If the sheets have become wet, they should be separated, wiped and placed in the open to dry. Refer to the Stratco "Selection, Use and Maintenance" Brochure, for more detailed information about the correct use and maintenance of this product.

Carport / Verandah Spans in Region D

Terrain Category	Base Metal Thickness	
	0.42mm BMT	0.48mm BMT
1 & 2	1170	1290
2.5	1350	1460
3 & 4	1530	1640

JULY 2009

Design Criteria

The following criteria was used in the development of the tables:

1. Region D with a design return period of 500 yrs.
2. $V_r = F_d$ 80m/s (limit state), with $F_d = 1.1$
3. $M_s/M_t/M_d = 1.00$

Height (m)	Terrain/height Multiplier (Mz,cat)		
	1&2	2.5	3&4
≤5	0.95	0.88	0.80
≤10	1.0	0.95	0.89

Pressure coefficients:

Internal C_{pi} = +0.7

External C_{pe} = -0.9

Carport and Verandah Spans

The carport and verandah spans only apply to structures not enclosed by peripheral walls. Spans are based on height ≤5m, C_{pn} = -0.9 and KI = 1.5 applied over the entire span, and are suitable for all span types. Loads on supporting purlins may limit these spans.

Stratco can provide additional engineering advice if any design parameters vary from those above.

Limitations

1. Design pressures and maximum allowable spans are based on five fasteners per sheet per support.
2. When fixing over insulation, screw length should be increased to ensure sufficient penetration of the fastener.
3. Maximum allowable overhang is 200mm for roof cladding.

Notes

1. Cyclonic Testing in accordance with Building Code of Australia (BCA) - Low-High-Low Pressure Testing.
2. Design Criteria are determined in accordance with AS/NZS1170.2 2002 Wind Actions.