



CERTIFICATE OF COMPLIANCE

Date: February 22, 2019

Certificate no. FAC-881 Rev. 1

ACE GUTTERS PTY LTD – ACEDEK ROOF AND WALL CLADDING

Specification of items certified: Refer to drawing FA-AG-881 Rev. 1

Aspects of cladding certified: Spans for roofing and walling applications in residential building

BASIS OF CERTIFICATION

The following documents were referred to in making this certification:

- a. NCC2016 Volume 2
- b. AS 4100:1998 (R2016) Steel structures
- c. AS/NZS 4600:2018 Cold-formed steel structures
- d. AS 4055:2012 Wind loads for housing
- e. AS 1170.1:2002 (R2016) Structural design actions. Permanent, imposed and other actions

CERTIFICATION

I certify that the spans in drawing FA-AG-881 Rev. 1 comply with the requirements of the Codes and Standards listed above.

CONDITIONS OF CERTIFICATION

The spans are valid for:

- a. Residential buildings. (Refer to AS4055 for definition of residential building)
- b. Maximum roof pitch of 35° (minimum roof pitch is 2° for water drainage purposes)
- c. Minimum screw size of 12g and G550, 1.0mm (BMT) support material (check screw capacity if using smaller screws or thinner/weaker support material)


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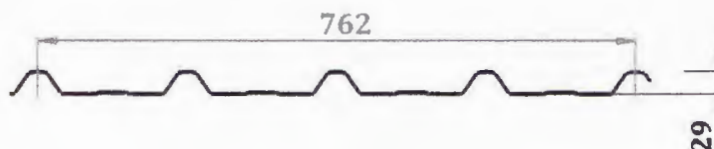
ACE GUTTERS – RESIDENTIAL BUILDING SPAN TABLES

ACEDEK ROOF AND WALL CLADDING – SPAN TABLES FOR NON-CYCLONIC AREAS

ACEDEK SPECIFICATIONS

Material	High tensile steel, G550
Base metal thickness (B.M.T.)	Available in 0.42 or 0.48mm
Cover	762mm (width)
Profile height	29mm
Finish	Available in ZINCALUME® or DURAKOTE
Minimum roof pitch	2°

SHEET PROFILE



BMT (mm)	APPLICATION	SPAN TYPE	AS4055 Wind Classification			
			N1	N2	N3	N4 (Note 2)
0.42	Roof	Single	1100	1100	1100	1100
		End	1300	1300	1300	1300
		Internal	1700	1700	1700	1500
	Wall	Single	2400	2100	1800	1700
		End	2900	2500	2250	1700
		Internal	3000	3000	2600	1900
0.48	Roof	Single	1600	1600	1600	1500
		End	1850	1850	1850	1500
		Internal	2600	2600	2300	1800
	Wall	Single	2700	2400	2000	1900
		End	3000	2900	2500	2000
		Internal	3000	3000	2900	2200

Notes: 1. All spans are in mm and are valid for 4 screws per sheet at each support, using 12g screws and G550, 1.0mm BMT support material. (Check screw capacity for smaller or thinner/weaker support material)

2. Refer to AS4055 for definition of residential building

TABLE 1. ACEDEK SPANS FOR RESIDENTIAL BUILDING

BMT (mm)	Application	Span type	Maximum recommended span* – (mm)
0.42	Roof	Single	1100
		End	1300
		Internal	1700
		Overhang	150
	Wall	Single	2400
		End	2900
		Internal	3000
0.48	Roof	Single	1600
		End	1850
		Internal	2600
		Overhang	200
	Wall	Single	2700
		End	3000
		Internal	3000
		Overhang	200

* Max. spans are based on N1 wind classification


TABLE 2. MAXIMUM RECOMMENDED SPANS

	Fixed to steel		Fixed to timber	
	≥0.55 to 1.0mm BMT	≥1.0 to 3.0mm BMT	Hardwood	Softwood
Crest fixed	Roof Zips M6-11x50	12-14x45, HH Tekes	12-11x65, Type 17, HH	12-11x65, Type 17, HH; or Roof Zips M6-11x65
Pan fixed	10-16x16, HH Tekes; or Roof Zips M6-11x25	10-16x16, HH Tekes	10-12x25, Type 17, HH; or 12-11x25, Type 17, HH	10-12x30, Type 17, HH; or 12-11x25, Type 17, HH; or Roof Zips M6-11x25

Notes:

1. HH stands for Hex Head
2. All screws should be used with neoprene sealing washers
3. Longer screws may be required if roof insulation is used under the sheets

TABLE 3. RECOMMENDED FASTENERS

	CONSULTING ENGINEERS: Fernandes & Associates Pty Ltd www.fernandes.net.au	CLIENT: Ace Gutters Pty. Ltd. www.acegutters.com.au	ACEDEK ROOFING AND WALL CLADDING SPAN TABLES FOR RESIDENTIAL BUILDINGS DWG: FA-AG-881 Rev. 1



CERTIFICATE OF COMPLIANCE

Date: October 27, 2020

Certificate no. FAC-953 Rev. 1

ACE GUTTERS PTY LTD - ACEDEK ROOF AND WALL CLADDING

ITEM CERTIFIED Design data and information in report no. FA-AG-953, Revision date – 27 October 2020.

BASIS OF CERTIFICATION

The following documents were referred to in making this certification:

CTS Report No. TS1192	Concentrated Load Testing, Serviceability and Static Simulated Wind Load Strength Testing of Acedek Roof Cladding
AS 4100:1998 (R2016)	Steel structures
AS/NZS 4600:2018	Cold-formed steel structures
AS 4055:2012	Wind loads for housing
AS 1170.1:2002 (R2016)	Structural design actions. Permanent, imposed and other actions
AS1562.1:2018	Design and installation of sheet roof and wall cladding
AS4040.0:1992 (R2016)	Methods of testing sheet roof and wall cladding. Introduction, list of methods and general requirements
AS4040.1:1992 (R2016)	Methods of testing sheet roof and wall cladding. Resistance to concentrated loads
AS4040.2:1992 (R2016)	Methods of testing sheet roof and wall cladding. Resistance to wind pressures for non-cyclonic regions)
NCC2019	National Construction Code 2019 (Volumes 1, 2 and 3)

CERTIFICATION

I certify that the design data and information in report number FA-AG-953 comply with the requirements of the Codes and Standards listed above.


Regards

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Fernandes & Associates
Consulting Mechanical & Structural Engineers

REPORT NO. FA-AG-953

27 October 2020

DESIGN CAPACITY OF ACEDEK CLADDING

PREPARED FOR

ACE GUTTERS PTY LTD

BY

FERNANDES & ASSOCIATES PTY LTD
(www.fernandes.net.au)





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IMPORTANT NOTES

This manual has been prepared for Acedek roof and wall cladding manufactured and distributed by Ace Gutters Pty Ltd.

DISCLAIMER

The design capacity tables presented in this manual have been obtained from results of tests carried out by the Cyclone Testing Station at James Cook University, Townsville, Qld, Australia. This manual is intended to be an aid for building professionals and designers and is only valid for Acedek cladding manufactured and distributed by Ace Gutters Pty Ltd. It is not a substitute for professional advice - please seek professional advice regarding the use of this product.



INTRODUCTION

This report has been prepared for building designers and specifiers who wish to use Acedek roof and wall cladding in non-cyclonic regions of Australia. The design capacity tables for the panels in this report have been prepared from results of load tests carried out by the Cyclone Testing Station (CTS) at James Cook University (JCU).

ACEDEK SPECIFICATIONS

The properties of the Acedek roof and wall claddings manufactured and distributed by Ace Gutters Pty Ltd are given in Table 1.

TABLE 1. ACEDEK PROPERTIES

Product	Base metal thickness (BMT) (mm)	Cladding application	Nominal profile height (mm)	Crest centres/pitch (mm)	Cover (mm)	Weight (kg/m ²)	
						ALUZINC	DURAKOTE®
Acedek	0.42	Roof and Wall	29	190.5	762	4.28	4.35
	0.48					4.86	4.93

FIGURE 1. ACEDEK PROFILE



Profile/Rib height – 29mm; Rib centres/pitch – 190.5mm; Cover – 762mm



MATERIAL

Acedek panels are manufactured from G550 high tensile steel (complying with AS1397:2011) with a minimum yield stress of 550MPa and coating mass of 125g/m². The panels are available in Aluzinc finish or in a variety of pre-painted DURAKOTE® colour coatings complying with AS/NZS2728:2013. They are available in thicknesses of 0.42 or 0.48mm base metal thickness (BMT).

FASTENERS

Acedek panels can be fixed directly to steel or timber supports using a screw at every crest. The capacity tables presented in this manual were prepared from results of tests carried out using a screw at every crest. The recommended fasteners are given in the Table 2 below.

TABLE 2. RECOMMENDED FASTENERS

Crest fixed to	Steel supports, 0.55mm to 1.0mm BMT	Steel supports, 1.0mm to 3.0mm BMT	Timber hardwood or softwood supports	Stitching screws/side lap screws
Recommended fastener	M6-13x65mm, Roof Zips® M6-11x65mm or equivalent	M6-13x65mm, 12- 14x65mm or equivalent	M6-13x65mm, 12- 11x65mm Type 17 or equivalent	10-16x16mm or M6- 11x25mm Roof Zips®

Notes:

1. Adjust screw length to allow for insulation
2. All screws should be used with neoprene sealing washers
3. Use stitching or side lap screws at mid-span for spans over 900mm.

INSTALLATION OF ACEDEK PANELS

Details on installing Acedek panels are given in the Acedek Installation Guide. Visit www.acegutters.com.au or contact Ace Gutters Pty Ltd to get a copy of the guide.

DESIGN CAPACITY TABLES

Limit state design wind pressures (for uplift) and concentrated loads for foot traffic are given in the tables below. Span types in the tables are as shown in Figure 2.



FIGURE 2. SPAN TYPES IN TABLES

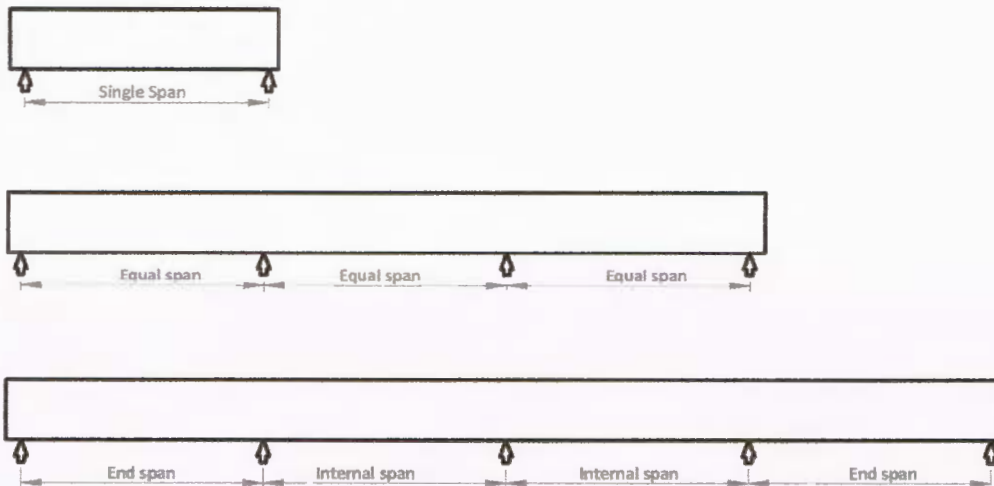


TABLE 3. ACEDEK SERVICEABILITY LIMIT STATE DESIGN WIND PRESSURE CAPACITY (UPLIFT) (kPa)

BMT (mm)	Span type	Span (mm)						
		900	1200	1500	1800	2100	2400	2700
0.42	Equal	4.25	2.71	1.89	1.45	1.09	0.88	0.71
	Internal	4.66	2.97	2.07	1.59	1.20	0.97	0.78
	End	3.74	2.38	1.66	1.28	0.96	0.77	0.62
0.48	Equal	5.08	3.35	2.35	1.99	1.37	1.11	0.85
	Internal	5.57	3.68	2.58	2.18	1.50	1.22	0.93
	End	4.47	2.95	2.07	1.75	1.21	0.98	0.75

Note: Design capacity tables are for panels fixed to supports with a screw at every crest



TABLE 4. ACEDEK ULTIMATE STRENGTH LIMIT STATE DESIGN WIND PRESSURE CAPACITY (UPLIFT) (kPa)

BMT (mm)	Span type	Span (mm)						
		900	1200	1500	1800	2100	2400	2700
0.42	Equal	6.12	4.44	3.49	2.81	2.42	2.10	1.88
	Internal	6.71	4.87	3.83	3.08	2.65	2.30	2.06
	End	5.39	3.91	3.07	2.47	2.13	1.85	1.65
0.48	Equal	6.94	5.80	4.82	3.93	3.34	2.84	2.31
	Internal	7.61	6.36	5.29	4.31	3.66	3.12	2.53
	End	6.11	5.10	4.24	3.46	2.94	2.50	2.03

Note: Design capacity tables are for panels fixed to supports with a screw at every crest

TABLE 5. SINGLE SPAN CAPACITY (kPa)

BMT (mm)	Span type	Limit state	Span (mm)
			1100
0.42	Single	Serviceability	2.80
		Strength	3.83
0.48	Single	Serviceability	4.06
		Strength	5.07

Note: Design capacity tables are for panels fixed to supports with a screw at every crest



TABLE 6. RECOMMENDED SPANS FOR FOOT TRAFFIC


BMT (mm)	Span type	Maximum span length ¹ (mm)
0.42	Triple Equal Span	1800
0.48	Triple Equal Span	2100

¹ Maximum span for foot traffic is based on applying a concentrated (downwards) load of 1.1kN in any position on the roof. (A person may walk anywhere on the roof cladding)

REFERENCES

CTS Report No. TS1192	Concentrated Load Testing, Serviceability and Static Simulated Wind Load Strength Testing of Acedek Roof Cladding
AS1562.1:2018	Design and installation of sheet roof and wall cladding
AS1397:2011	Continuous hot-dip metallic coated steel sheet and strip – Coatings of zinc and zinc alloyed with aluminium and magnesium
AS/NZS2728:2013	Prefinished/prepainted sheet metal products for interior/exterior building applications. Performance requirements
AS4040.0:1992 (R2016)	Methods of testing sheet roof and wall cladding. Introduction, list of methods and general requirements
AS4040.1:1992 (R2016)	Methods of testing sheet roof and wall cladding. Resistance to concentrated loads
AS4040.2:1992 (R2016)	Methods of testing sheet roof and wall cladding. Resistance to wind pressures for non-cyclonic regions)
NCC2019	National Construction Code 2019 (Volumes 1, 2 and 3)

Approved by:


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