

Our Ref: 30253

January 2020

Fujian Antai New Energy Tech. Co., Ltd.

ANTAISOLAR Adjustable Tilt Legs System for use within Australia - Type VI Rail

Dome Consulting (Aust) Pty Ltd have carried out a structural design check of the Fujian Antai New Energy Tech. Co., Ltd. Adjustable Tilt Legs System for use in Australia. The design check has been based on the information provided by Fujian Antai New Energy Tech.

Australian Standards

AS 1170. 2011 – Structural Design Actions

Part 0 – General Principles

Part 1 – Permanent imposed and other actions

Part 2 – Wind Actions

Part 3 – Snow and Ice Actions

AS 1664.1 – Aluminium structures - Limit state design

Following design criteria has been used for the structural verification

Wind Region A, B, C, D

Wind Terrain Category 2 & 3

Wind average recurrence interval of 100 years

Maximum Building height 20 m

Max. Solar Panel Dimensions 2200×1100

The design and documentation has determined that all supporting componentry in the above mentioned documentation was found to be acceptable.

Refer to attached summary table for interface spacing.

Construction is to be carried out strictly in accordance with the manufacturers instructions. This work was designed in accordance with the provisions of Australian Building Regulations and in accordance with sound, widely accepted engineering principles

Yours faithfully,

FOR & ON BEHALF OF DOME CONSULTING PTY LTD



Robert Cilia
BE (Civil) RBP RPEQ TBP

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January 2020

Fujian Antai New Energy Tech. Co., Ltd.

Structural Design Summary Table

Adjustable Tilt Legs System with Type VI Rail

For

Fujian Antai New Energy Tech. Co., Ltd.
in accordance to AS1170.2 2011 Amdt 5 - June 2017

Terrain Category 3

Tin Roof

$10^\circ < a < 15^\circ$
Terrain category 3
Roof Angle $< 10^\circ$

Adjustable Tilt Leg
Type VI Rail

For Up To 2200m Long Panels (2 Rails)									
Max. Support Spacing (mm)									
Installation Height (m)	Region A		Region B			Region C		Region D	
	Center	Edge	Center	Edge		Center	Edge	Center	Edge
10 m	1848	1586	1796	1560		1598	1386	1352	932
15 m	1751	1515	1702	1490		1527	1270	1260	815
20 m	1680	1467	1654	1441		1456	1152	1120	722

Tin Roof

$15^\circ \leq a < 30^\circ$
Terrain category 3
Roof Angle $< 10^\circ$

Adjustable Tilt Leg
Type VI Rail

For Up To 2200m Long Panels (2 Rails)									
Max. Support Spacing (mm)									
Installation Height (m)	Region A		Region B			Region C		Region D	
	Center	Edge	Center	Edge		Center	Edge	Center	Edge
10 m	1493	1325	1464	1229		1222	799	770	512
15 m	1444	1279	1419	1064		1058	680	675	442
20 m	1396	1231	945	1370		869	610	605	395

Tin Roof

$30^\circ \leq a < 60^\circ$
Terrain category 3
Roof Angle $< 10^\circ$

Adjustable Tilt Leg
Type VI Rail

For Up To 2200m Long Panels (2 Rails)									
Max. Support Spacing (mm)									
Installation Height (m)	Region A		Region B			Region C		Region D	
	Center	Edge	Center	Edge		Center	Edge	Center	Edge
10 m	1422	1254	1393	993		988	635	630	420
15 m	1350	1208	1299	851		847	565	535	350
20 m	1302	1066	1180	755		751	494	490	325

Notes

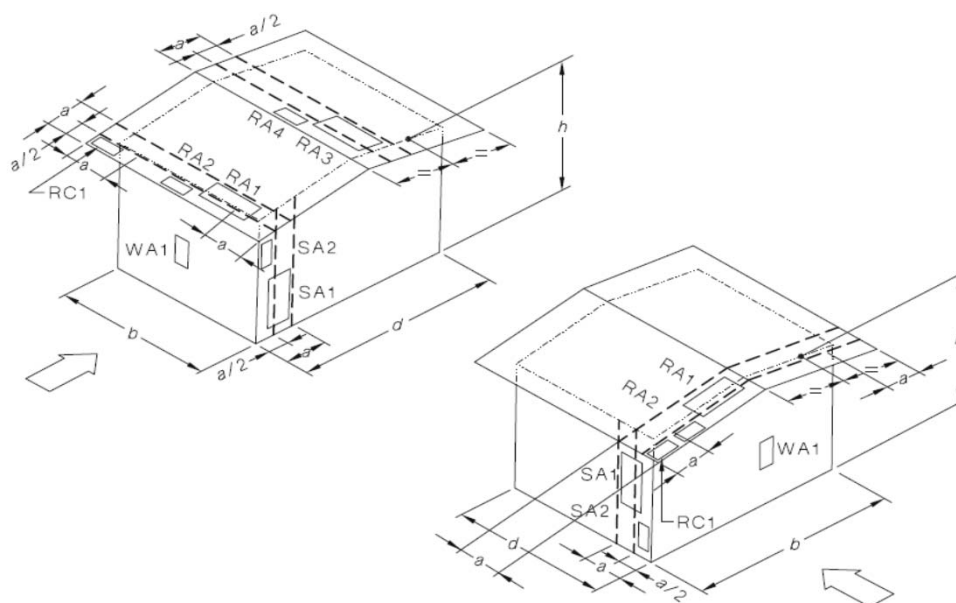
- * Minimum 35mm embedment length into timber
- * Please note that the screws provided with our products are designed for mounting in to wooden and metal structures. ANTAI Solar recommend using 13-11x50 RoofStars - Self Drilling Screws from ICONS® to fix to steel purlins.
- * Above spacing based on 1.9mm steel purlin or F17 Hardwood - Following reductions shall be applied

Material	Wind region C			Wind region C	
	Centre	Edge		Centre	Edge
0.55mm steel batten	22%	25%		30%	42%
0.75mm steel batten	n/a	n/a		10%	5%

- * Please consult ANTAI Solar for installing PV modules with a greater length than 2200mm.

Terrain Category 2 (TC2) Open terrain, including grassland, with well-scattered obstructions having heights generally from 1.5 m to 5 m, with no more than two obstructions per hectare, e.g. farmland and cleared subdivisions with isolated trees and uncut grass.

Terrain Category 3 (TC3) Terrain with numerous closely spaced obstructions having heights generally from 3 m to 10 m. The minimum density of obstructions shall be at least the equivalent of 10 house-size obstructions per hectare, e.g. suburban housing, light industrial estates or dense forests.



Refer Figure 5.3 of AS/NZS 1170.2:2012 for definition of roof edge and middle zones.

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Terrain Category 2

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Terrain category 2
Roof Angle $< 10^\circ$

Adjustable Tilt Leg
Type VI Rail

For Up To 2200m Long Panels (2 Rails)									
Max. Support Spacing (mm)									
Installation Height (m)	Region A		Region B			Region C		Region D	
	Center	Edge	Center	Edge		Center	Edge	Center	Edge
10 m	1609	1422	1583	1393		1411	1011	980	630
15 m	1564	1373	1535	1348		1341	892	885	582
20 m	1538	1350	1512	1299		1293	847	840	535

Tin Roof

$15^\circ \leq a < 30^\circ$
Terrain category 2
Roof Angle $< 10^\circ$

Adjustable Tilt Leg
Type VI Rail

For Up To 2200m Long Panels (2 Rails)									
Max. Support Spacing (mm)									
Installation Height (m)	Region A		Region B			Region C		Region D	
	Center	Edge	Center	Edge		Center	Edge	Center	Edge
10 m	1350	1097	1277	826		821	539	535	350
15 m	1302	1041	1158	755		751	494	465	302
20 m	1279	995	1087	709		706	469	442	302

Tin Roof

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Terrain category 2
Roof Angle $< 10^\circ$

Adjustable Tilt Leg
Type VI Rail

For Up To 2200m Long Panels (2 Rails)									
Max. Support Spacing (mm)									
Installation Height (m)	Region A		Region B			Region C		Region D	
	Center	Edge	Center	Edge		Center	Edge	Center	Edge
10 m	1279	947	1038	661		658	446	420	280
15 m	1231	853	922	613		610	398	395	255
20 m	1208	805	874	567		565	375	372	232

Notes

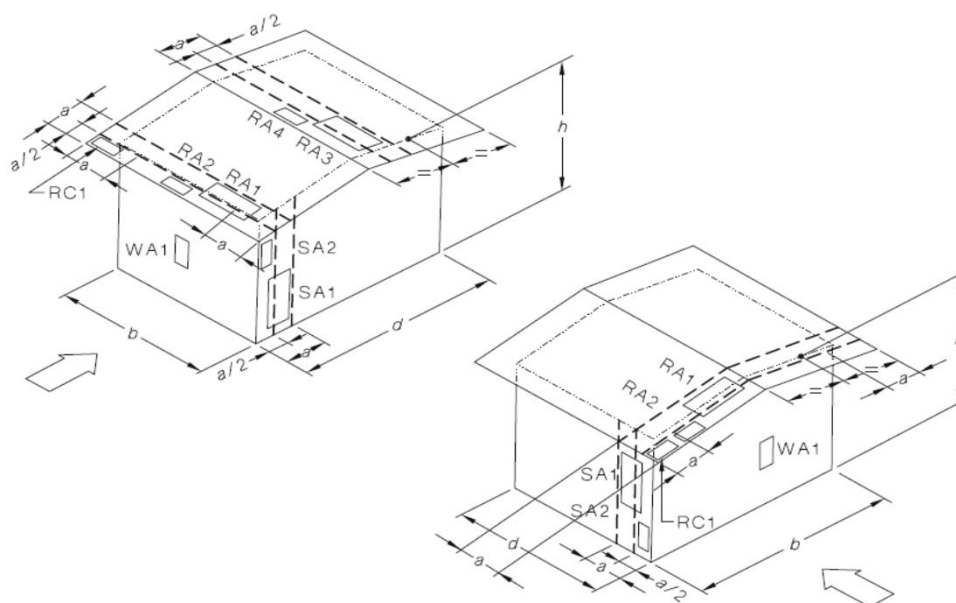
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