

Our Ref: 21170

January 2019

Fujian Antai New Energy Tech. Co., Ltd.

NEWAY Adjustable Tilt Legs System for use within Australia - Type V 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 Mortec Industries

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 2000×1000

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

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Fujian Antai New Energy Tech. Co., Ltd.

Structural Design Summary Table

Adjustable Tilt Legs System with Type V 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 V Rail

For Up To 2000m 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	1897	1629	1844	1602		1640	1423	1388	957
15 m	1798	1556	1748	1529		1568	1304	1293	836
20 m	1725	1506	1698	1480		1495	1182	1150	741

Tin Roof

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

Adjustable Tilt Leg
Type V Rail

For Up To 2000m 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	1532	1360	1503	1261		1255	820	790	526
15 m	1483	1314	1457	1092		1087	698	693	454
20 m	1433	1264	970	1407		893	626	621	405

Tin Roof

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

Adjustable Tilt Leg
Type V Rail

For Up To 2000m 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	1460	1287	1430	1020		1014	652	647	431
15 m	1387	1241	1334	874		869	580	549	359
20 m	1337	1095	1212	775		771	507	503	333

Notes

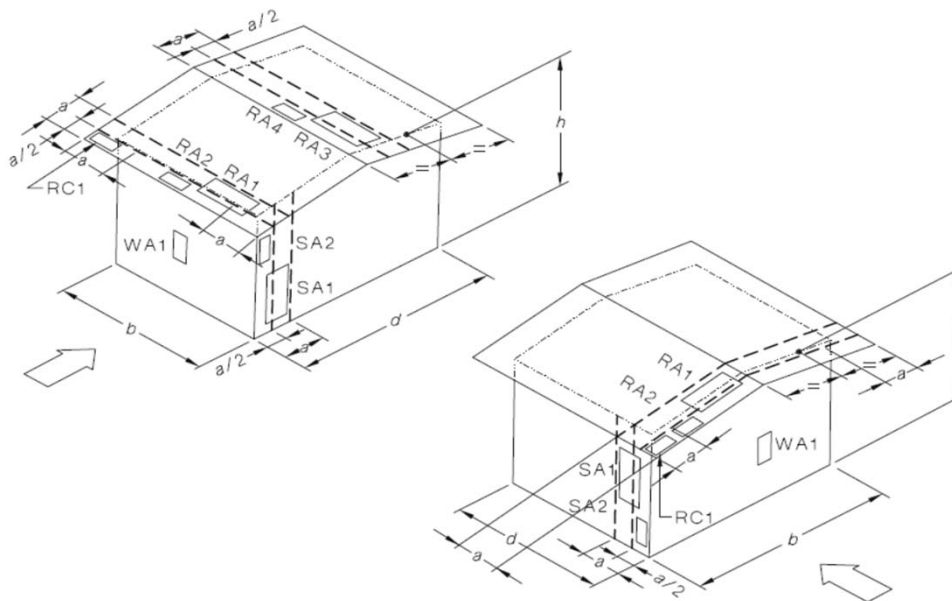
- * Minimum 35mm embedment length into timber
- * Please note that the screws provided with our products are designed for mounting in to wooden and metal structures. ANTAI Solar recommend using 13-11x50 RoofStars - Self Drilling Screws from ICONS® to fix to steel purlins.
- * Above spacing based on 1.9mm 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 2000mm.
- * For PV panels with length of 1700mm, increase the spacing by 15%.

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.



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in accordance to AS1170.2 2011 Amdt 5 - June 2017

Terrain Category 2

Tin Roof

10° < a < 15°
Terrain category 2
Roof Angle < 10°

Adjustable Tilt Leg
Type V Rail

For Up To 2000m 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	1652	1460	1625	1430		1449	1037	1006	647
15 m	1605	1410	1576	1384		1377	916	908	598
20 m	1579	1387	1553	1334		1327	869	862	549

Tin Roof

15° < a < 30°
Terrain category 2
Roof Angle < 10°

Adjustable Tilt Leg
Type V Rail

For Up To 2000m 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	1387	995	1311	848		843	554	549	359
15 m	1337	1068	1189	775		771	507	477	310
20 m	1314	1022	1116	728		725	481	454	310

Tin Roof

30° < a < 60°
Terrain category 2
Roof Angle < 10°

Adjustable Tilt Leg
Type V Rail

For Up To 2000m 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	1314	972	1066	679		675	458	431	287
15 m	1264	876	947	629		626	409	405	262
20 m	1241	826	897	583		580	385	382	239

Notes

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