

General Certification

Tilt Mounted System on Concealed Fix Roof
with Titan Solar TTV2 Rail

For: JIANGYIN TITANERGY CO. LTD
No.11 Wuxiang Road
Yunting Street, Jiangyin
China 214422

Job No.: 14690-RM08
Date: 30/05/2024

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Report Title		General Certification for Titanergy Tilt Mounted System on Concealed Fix Roof with Titan Solar TTV2 Rail				
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Client		JIANGYIN TITANERGY CO. LTD		Client Contact	Tina Nie	
Rev	Date	Revision Details	Prepared By	Author	Verifier	Approver
0	30/05/2024	Certificate date updated of 11323 - RM08	BL	BL	LvS	LvS
Current Revision		0				

Approval			
Author Signature	<i>biancaliu</i>	Approver Signature	
Name	Bianca Liu	Name	L. Van Spaandonk
Title	Structural Engineer	Title	Principal Engineer

Our Ref: 14690-RM08/BL
30 May 2024

JIANGYIN TITANERGY CO. LTD

No.11 Wuxiang Road
Yunting Street, Jiangyin
China 214422

RE: General Certification for Titanergy Tilt Mounted System on Concealed Fix Roof (Lysaght Klip Lok 406, Lysaght Klip Lok 700 Classic, Lysaght Klip Lok 700 Hi-Strength, Stramit Speed Deck Ultra 700) with Titan Solar TTV2 Rail

Gamcorp Pty Ltd, being Structural Engineers within the meaning of Australian Building Regulations, have carried out a structural design check of Titanergy Tilt Mounted System on Concealed Fix Roof with Titan Solar TTV2 rail within Australia. The design check has been based on the information and test reports provided by JIANGYIN TITANERGY CO. LTD.

Components of the system covered in this certificate shown in the table below:

Component	Part No.
Rail	Titan Solar TTV2 Rail
Roof Clamp	Titan Solar Cliplok 406 & 700
Mid Clamp	Titan Solar Mid Clamp Kit 40mm
End Clamp	Titan Solar End Clamp Kit 40mm
Tilt Roof System	Titan Solar Tilt Roof System

This certificate is **only valid** for Titanergy Tilt Mounted System on the Concealed Fix Roof (Lysaght Klip Lok 406, Lysaght Klip Lok 700 Classic, Lysaght Klip Lok 700 Hi-Strength, Stramit Speed Deck Ultra 700) with Titan Solar TTV2 rail. The roof structure or the building structure shall be assessed separately and accordingly.

This certificate is **only valid** when roof clamp fixing to the full rib of roof sheeting on the top of the purlins. If the fixing condition is different from those conditions, interface spacing shall be reviewed and validated. For the indicative location of **full rib** in the roof sheeting, please see **Figure 1**.

This certificate is **only valid** as a whole. Any information extracted from this certificate is not valid if standing alone.

We find the Installation of Tilt Mounted System on the Concealed Fix Roof (Lysaght Klip Lok 406, Lysaght Klip Lok 700 Classic, Lysaght Klip Lok 700 Hi-Strength, Stramit Speed Deck Ultra 700) for Australian use to be structurally sufficient based on the following conditions:

- Wind loads to **AS/NZS1170.2:2021**
- Wind region **A, B1, B2, C & D**
- Wind terrain category **2 & 3**
- Wind average recurrence interval of **200 years**

- Maximum building height **20m**
- The PV panel dimensions to be **1800mm x 1100mm, 2000mm x 1100mm, 2200mm x 1200mm, 2400mm x 1200mm**
- Maximum weight of the PV panel and array frame to be **15 kg/m²**
- Rails to be **Titan Solar TTV2** rails
- Roof clamp to be **Cliplok 406** and **700**
- Material of rails and other components to be **AL/6005-T5 UNO**
- Each PV panel to be installed using **2 rails** minimum in all circumstances
- No PV panel to be installed within 2xs from edges and ridge. "s" is the maximum gap between the underside of the panel and the roof surface when installed on the roof ($50\text{mm} \leq s \leq 300\text{mm}$)
- Installation of PV panels to be done in accordance with the PV panels installation manual
- The certification **excludes** assessment of roof structure and PV panels

Refer to attached summary table for interface spacing (unit: mm)

NOTES:

- The recommended spacing nominated in this certification is based on the capacity of the array frame and the fixing of array frames to the roof, not the roof structure and PV panels. It is the responsibility of the installer to adopt the most critical spacing.
- If any of the above conditions cannot be met, the structural engineer must be notified immediately.
- The capacity of roof clamp was obtained from test report no. 10038/Acha, dated 16th July 2020 and provided by Gamcorp (Melbourne) Pty Ltd.
- The capacities of tilt legs were obtained from test report no. 21-0685, dated 12th August 2021 and provided by Melbourne Testing Service(MTS).
- The spacing shown in the interface tables shall be adjusted based on the assessment and requirement of the roof structures.

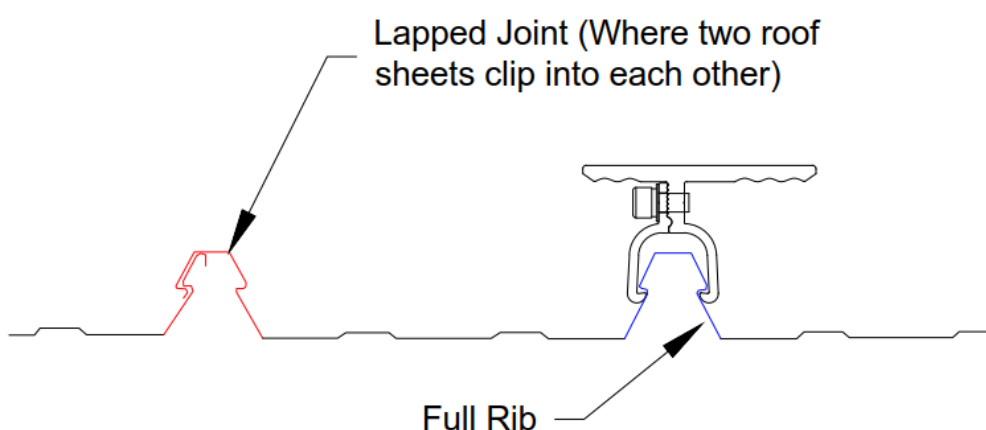


Figure 1 – Full Rib Location For Indicative

Construction is to be carried out strictly in accordance with the manufacturer's instructions. This work was designed by **Bianca Liu** in accordance with the provisions of Australian Building Regulations and in accordance with sound, widely accepted engineering principles.

This certification is only valid till **30/06/2026**. Gamcorp should be contacted for future validation. Contact Gamcorp for a customised system or if the site conditions are not covered by this assessment.

Yours faithfully,
Gamcorp Pty Ltd



L. Van Spaandonk

Principal Engineer
FIEAust CPEng NER 5038980
NT Registration: 244137ES
QLD Registration: 18703
VIC Registration: PE0001956
TAS Registration: CC7366

Attachments:

- Summary table for interface spacing - tilt mount installation on Lysaght Klip Lok 406 roof with Titan Solar TTV2 rail
- Summary table for interface spacing - tilt mount installation on Lysaght Klip Lok 700 Classic roof with Titan Solar TTV2 rail
- Summary table for interface spacing - tilt mount installation on Lysaght Klip Lok 700 Hi-Strength roof with Titan Solar TTV2 rail
- Summary table for interface spacing - tilt mount installation on Stramit Speed Deck Ultra 700 roof with Titan Solar TTV2 rail

Structural Design Documentation

Tilt Array Frame System Spacing Table

According to AS/NZS 1170.2-2021

with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok 406 Roof
within Australia
Terrain Category 2 & 3

For: Jiangyin Titanergy Co. Ltd
No.11 Wuxiang Road
Yunting Street, Jiangyin
China 214422

Job Number: 14690 - RM08
Date: 30 May 2024



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Job No: 14690 - RM08a
Client: Jiangyin Titanergy Co. Ltd
Project: Tilt Array Frame System Spacing Table
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok 406 Roof
Address: within Australia
Wind Terrain Category: Terrain Category 2 & 3

Australian/New Zealand Standards

AS/NZS 1170.0:2002	Structural design actions Part 0: General principles
AS/NZS 1170.1:2002 (R2016)	Structural design actions Part 1: Permanent, imposed and other actions
AS/NZS 1170.2:2021	Structural design actions Part 2: Wind actions
AS/NZS 1664.1:1997 (R2020)	Aluminium structures Part 1: Limit state design
AS/NZS 4600:2018	Cold-formed steel structures
AS 4100:2020	Steel structures

Designed: BL
Checked: LvS
Date: May-24

Relationships built on trust

Client: **Jiangyin Titanergy Co. Ltd**
 Project: **Tilt Array Frame System Spacing Table**
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok 406 Roof
 Address: **within Australia**

Job: **14690 - RM08a**
 Date: **May-24**
 Designed: **BL**
 Checked: **LvS**

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok 406 Roof (mm)

Type of Rail: Titan Solar TTV2 Rail
 Type of Interface: Cliplok 406
 Solar Panel Dimension: 1.8mx1.1m
 Terrain category: 3

Tilt angle to roof surface (α), $\alpha \leq 15^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	430	660	900	1415	430	660	900	1415	370	565	770	1205	--	505	685	1070
B1	--	490	665	1035	--	490	665	1035	--	420	570	885	--	380	510	790
B2	--	395	540	830	--	395	540	830	--	--	465	715	--	--	415	635
C	--	--	385	590	--	--	385	590	--	--	--	510	--	--	--	455
D	--	--	--	415	--	--	--	415	--	--	--	335	--	--	--	--

Tilt angle to roof surface (α), $15^\circ < \alpha \leq 30^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	400	545	840	--	400	545	840	--	--	470	720	--	--	420	645
B1	--	--	405	625	--	--	405	625	--	--	--	535	--	--	--	480
B2	--	--	--	505	--	--	--	505	--	--	--	435	--	--	--	390
C	--	--	--	355	--	--	--	355	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $30^\circ < \alpha \leq 60^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	460	705	--	--	460	705	--	--	395	605	--	--	--	540
B1	--	--	--	525	--	--	--	525	--	--	--	450	--	--	--	405
B2	--	--	--	425	--	--	--	425	--	--	--	365	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



Client: **Jiangyin Titanergy Co. Ltd**
Project: **Tilt Array Frame System Spacing Table**
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok 406 Roof
Address: **within Australia**

Job: **14690 - RM08a**
Date: **May-24**
Designed: **BL**
Checked: **LvS**

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok 406 Roof (mm)

Type of Rail: Titan Solar TTV2 Rail
Type of Interface: Cliplok 406
Solar Panel Dimension: 1.8mx1.1m
Terrain category: 2

Tilt angle to roof surface (α), $\alpha \leq 15^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermediate	Internal	Corner	Edge	Intermediate	Internal	Corner	Edge	Intermediate	Internal	Corner	Edge	Intermediate	Internal
A	--	540	735	1150	--	445	600	930	--	400	540	835	--	380	510	790
B1	--	405	545	845	--	--	450	690	--	--	405	620	--	--	380	585
B2	--	--	440	680	--	--	360	555	--	--	--	500	--	--	--	470
C	--	--	--	485	--	--	--	395	--	--	--	335	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $15^\circ < \alpha \leq 30^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermediate	Internal	Corner	Edge	Intermediate	Internal	Corner	Edge	Intermediate	Internal	Corner	Edge	Intermediate	Internal
A	--	--	450	690	--	--	370	565	--	--	--	505	--	--	--	480
B1	--	--	--	510	--	--	--	420	--	--	--	380	--	--	--	--
B2	--	--	--	415	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $30^\circ < \alpha \leq 60^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermediate	Internal	Corner	Edge	Intermediate	Internal	Corner	Edge	Intermediate	Internal	Corner	Edge	Intermediate	Internal
A	--	--	380	580	--	--	--	475	--	--	--	425	--	--	--	405
B1	--	--	--	430	--	--	--	--	--	--	--	--	--	--	--	--
B2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



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Relationships built on trust

Client: **Jiangyin Titanergy Co. Ltd**
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Address: **within Australia**

Job: **14690 – RM08a**
Date: **May-24**
Designed: **BL**
Checked: **LvS**

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok 406 Roof (mm)

Type of Rail: Titan Solar TTV2 Rail
Type of Interface: Cliplok 406
Solar Panel Dimension: 2mx1.1m
Terrain category: 3

Tilt angle to roof surface (α), $\alpha \leq 15^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	385	590	810	1275	385	590	810	1275	--	510	695	1085	--	455	620	960
B1	--	440	600	930	--	440	600	930	--	380	515	795	--	--	460	710
B2	--	310	485	750	--	310	485	750	--	--	415	640	--	--	370	570
C	--	--	--	530	--	--	--	530	--	--	--	455	--	--	--	405
D	--	--	--	375	--	--	--	375	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $15^\circ < \alpha \leq 30^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	360	490	755	--	360	490	755	--	--	420	650	--	--	375	580
B1	--	--	360	560	--	--	360	560	--	--	--	480	--	--	--	430
B2	--	--	--	455	--	--	--	455	--	--	--	390	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $30^\circ < \alpha \leq 60^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	410	635	--	--	410	635	--	--	--	545	--	--	--	485
B1	--	--	--	470	--	--	--	470	--	--	--	405	--	--	--	360
B2	--	--	--	380	--	--	--	380	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



Client: **Jiangyin Titanergy Co. Ltd**
Project: **Tilt Array Frame System Spacing Table**
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok 406 Roof
Address: **within Australia**

Job: **14690 - RM08a**
Date: **May-24**
Designed: **BL**
Checked: **LvS**

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok 406 Roof (mm)

Type of Rail: Titan Solar TTV2 Rail
Type of Interface: Cliplik 406
Solar Panel Dimension: 2mx1.1m
Terrain category: 2

Tilt angle to roof surface (α), $\alpha \leq 15^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	485	665	1035	--	400	540	840	--	355	485	750	--	--	460	710
B1	--	360	490	760	--	--	405	620	--	--	360	560	--	--	--	525
B2	--	--	400	610	--	--	--	500	--	--	--	450	--	--	--	425
C	--	--	--	435	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $15^\circ < \alpha \leq 30^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	405	620	--	--	--	505	--	--	--	455	--	--	--	430
B1	--	--	--	460	--	--	--	380	--	--	--	--	--	--	--	--
B2	--	--	--	375	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $30^\circ < \alpha \leq 60^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	--	520	--	--	--	425	--	--	--	385	--	--	--	360
B1	--	--	--	385	--	--	--	--	--	--	--	--	--	--	--	--
B2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



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Relationships built on trust

Client: **Jiangyin Titanergy Co. Ltd**
Project: **Tilt Array Frame System Spacing Table**
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Address: **within Australia**

Job: **14690 – RM08a**
Date: **May-24**
Designed: **BL**
Checked: **LvS**

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok 406 Roof (mm)

Type of Rail: Titan Solar TTV2 Rail
Type of Interface: Cliplok 406
Solar Panel Dimension: 2.2mx1.2m
Terrain category: 3

Tilt angle to roof surface (α), $\alpha \leq 15^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	535	735	1155	--	535	735	1155	--	465	630	985	--	415	560	875
B1	--	400	545	845	--	400	545	845	--	--	470	725	--	--	420	645
B2	--	--	440	680	--	--	440	680	--	--	--	585	--	--	--	520
C	--	--	--	480	--	--	--	480	--	--	--	415	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $15^\circ < \alpha \leq 30^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	445	685	--	--	445	685	--	--	--	590	--	--	--	525
B1	--	--	--	510	--	--	--	510	--	--	--	440	--	--	--	390
B2	--	--	--	410	--	--	--	410	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $30^\circ < \alpha \leq 60^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	--	575	--	--	--	575	--	--	--	495	--	--	--	440
B1	--	--	--	430	--	--	--	430	--	--	--	--	--	--	--	--
B2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



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Job: **14690 - RM08a**
Date: **May-24**
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Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok 406 Roof (mm)

Type of Rail: Titan Solar TTV2 Rail
Type of Interface: Cliplok 406
Solar Panel Dimension: 2.2mx1.2m
Terrain category: 2

Tilt angle to roof surface (α), $\alpha \leq 15^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	445	600	940	--	--	490	760	--	--	440	685	--	--	420	645
B1	--	--	445	690	--	--	--	565	--	--	--	505	--	--	--	475
B2	--	--	--	555	--	--	--	455	--	--	--	410	--	--	--	--
C	--	--	--	390	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $15^\circ < \alpha \leq 30^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	--	565	--	--	--	460	--	--	--	415	--	--	--	390
B1	--	--	--	420	--	--	--	--	--	--	--	--	--	--	--	--
B2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $30^\circ < \alpha \leq 60^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	--	475	--	--	--	--	--	--	--	--	--	--	--	--
B1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Relationships built on trust

Client: **Jiangyin Titanergy Co. Ltd**
 Project: **Tilt Array Frame System Spacing Table**
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok 406 Roof
 Address: **within Australia**

Job: **14690 - RM08a**
 Date: **May-24**
 Designed: **BL**
 Checked: **LVS**

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok 406 Roof (mm)

Type of Rail: Titan Solar TTV2 Rail
 Type of Interface: Cliplok 406
 Solar Panel Dimension: 2.4mx1.2m
 Terrain category: 3

Tilt angle to roof surface (α), $\alpha \leq 15^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	495	675	1060	--	495	675	1060	--	425	575	905	--	--	515	800
B1	--	--	500	775	--	--	500	775	--	--	430	665	--	--	--	590
B2	--	--	405	625	--	--	405	625	--	--	--	535	--	--	--	475
C	--	--	--	440	--	--	--	440	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $15^\circ < \alpha \leq 30^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	405	630	--	--	405	630	--	--	--	540	--	--	--	480
B1	--	--	--	465	--	--	--	465	--	--	--	400	--	--	--	--
B2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $30^\circ < \alpha \leq 60^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	--	525	--	--	--	525	--	--	--	455	--	--	--	405
B1	--	--	--	390	--	--	--	390	--	--	--	--	--	--	--	--
B2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



Client: **Jiangyin Titanergy Co. Ltd**
Project: **Tilt Array Frame System Spacing Table
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok 406 Roof**
Address: **within Australia**

Job: **14690 - RM08a**
Date: **May-24**
Designed: **BL**
Checked: **LvS**

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok 406 Roof (mm)

Type of Rail: Titan Solar TTV2 Rail
Type of Interface: Cliplok 406
Solar Panel Dimension: 2.4mx1.2m
Terrain category: 2

Tilt angle to roof surface (α), $\alpha \leq 15^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	405	550	860	--	--	450	700	--	--	405	625	--	--	--	590
B1	--	--	410	630	--	--	--	515	--	--	--	465	--	--	--	435
B2	--	--	--	510	--	--	--	415	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $15^\circ < \alpha \leq 30^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	--	515	--	--	--	420	--	--	--	--	--	--	--	--
B1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $30^\circ < \alpha \leq 60^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	--	435	--	--	--	--	--	--	--	--	--	--	--	--
B1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



Relationships built on trust

Client: **Jiangyin Titanergy Co. Ltd**
Project: **Tilt Array Frame System Spacing Table**
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok 406 Roof
Address: **within Australia**

Job: **14690 - RM08a**
Date: **May-24**
Designed: **BL**
Checked: **LvS**

General Notes

Note 1 Following components are satisfied to use according to AS/NZS 1170.2:2021

Components	Part Number	Description
Rail	Titan Solar TTV2 Rail	As per drawing or test report provided by client
Mid Clamp	Mid Clamp Kit 40mm	
End Clamp	End Clamp Kit 40mm	
Roof Clamp	Titan Solar Cliplok 406	
Tilt Roof System	Titan Solar Tilt Roof System	

Note 2 Spacing calculated based on the roof clamp test results.

Note 3 Maximum uplift wind pressure is limited to 5kPa.

Note 4 Deflection is limited to Minimum of L/120 and 15mm.

Note 5 Tilt angle is measured from roof surface.

Note 6 "--" states NOT SUITABLE FOR INSTALLATION.

Note 7 Refer section 4.2.1 of AS/NZS 1170.2:2021 for terrain category definition.

Note 8 Wind regions are shown in Figure 3.1(A) of AS/NZS 1170.2:2021.

Note 9 Building height is average roof height of structure above ground. Refer Figure 1 for definition of h, d and b.

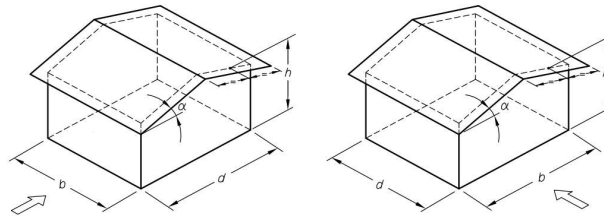
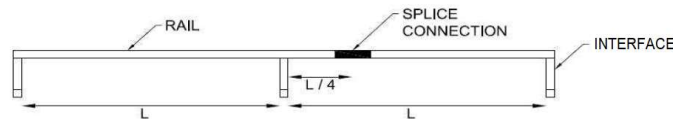


Figure 1 – h, d and b definition

Note 10 Rail splice connection must be placed a quarter length of the spacing of interface. No Splice connection should be placed at the centre of spacing or over the interface.



Note 11 Refer Figure 2 for definition of roof zones.

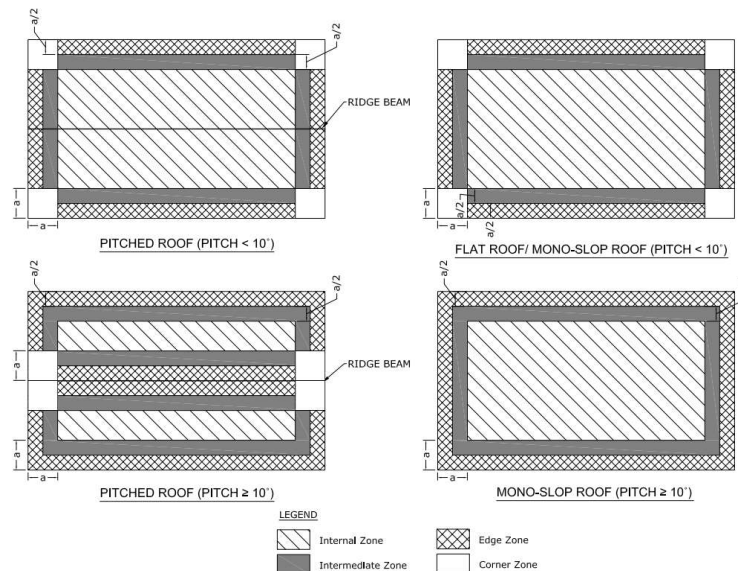


Figure2- Roof Zones Definition

In Figure 2, the value of dimension "a" is the minimum of 0.2b or 0.2d, if (h/b) or (h/d) ≥ 0.2; or 2h if both (h/b) and (h/d) < 0.2 (b & d are building dimensions and h is average roof height, see Figure 1)

Structural Design Documentation

Tilt Array Frame System Spacing Table

According to AS/NZS 1170.2-2021

with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok Classic 700 Roof
within Australia
Terrain Category 2 & 3

For: Jiangyin Titanergy Co. Ltd
No.11 Wuxiang Road
Yunting Street, Jiangyin
China 214422

Job Number: 14690 - RM08
Date: 30 May 2024



Job No: 14690 - RM08b
Client: Jiangyin Titanergy Co. Ltd
Project: Tilt Array Frame System Spacing Table
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok Classic 700 Roof
Address: within Australia
Wind Terrain Category: Terrain Category 2 & 3

Australian/New Zealand Standards

AS/NZS 1170.0:2002	Structural design actions Part 0: General principles
AS/NZS 1170.1:2002 (R2016)	Structural design actions Part 1: Permanent, imposed and other actions
AS/NZS 1170.2:2021	Structural design actions Part 2: Wind actions
AS/NZS 1664.1:1997 (R2020)	Aluminium structures Part 1: Limit state design
AS/NZS 4600:2018	Cold-formed steel structures
AS 4100:2020	Steel structures

Designed: BL
Checked: LvS
Date: May-24



Relationships built on trust

Client: **Jiangyin Titanergy Co. Ltd**
Project: **Tilt Array Frame System Spacing Table**
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok Classic 700 Roof
Address: **within Australia**

Job: **14690 - RM08b**
Date: **May-24**
Designed: **BL**
Checked: **LvS**

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok Classic 700 Roof (mm)

Type of Rail: Titan Solar TTV2 Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 1.8mx1.1m
Terrain category: 3

Tilt angle to roof surface (α), $\alpha \leq 15^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	605	925	1265	1555	605	925	1265	1555	520	795	1085	1470	465	710	965	1405
B1	450	690	935	1460	450	690	935	1460	390	595	805	1250	--	535	720	1110
B2	--	560	760	1170	--	560	760	1170	--	485	655	1005	--	430	585	895
C	--	400	540	830	--	400	540	830	--	--	470	715	--	--	420	640
D	--	--	385	585	--	--	385	585	--	--	--	505	--	--	--	450

Tilt angle to roof surface (α), $15^\circ < \alpha \leq 30^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	540	735	1135	--	540	735	1135	--	470	635	975	--	420	565	870
B1	--	405	550	840	--	405	550	840	--	--	475	725	--	--	425	645
B2	--	--	445	680	--	--	445	680	--	--	385	585	--	--	--	525
C	--	--	--	485	--	--	--	485	--	--	--	420	--	--	--	375
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $30^\circ < \alpha \leq 60^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	415	560	865	--	415	560	865	--	335	485	740	--	--	435	665
B1	--	--	420	640	--	--	420	640	--	--	360	555	--	--	--	495
B2	--	--	--	520	--	--	--	520	--	--	--	450	--	--	--	400
C	--	--	--	370	--	--	--	370	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



Client: **Jiangyin Titanergy Co. Ltd**
Project: **Tilt Array Frame System Spacing Table**
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok Classic 700 Roof
Address: **within Australia**

Job: **14690 - RM08b**
Date: **May-24**
Designed: **BL**
Checked: **LvS**

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok Classic 700 Roof (mm)

Type of Rail: Titan Solar TTV2 Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 1.8mx1.1m
Terrain category: 2

Tilt angle to roof surface (α), $\alpha \leq 15^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	500	765	1040	1445	410	625	845	1310	--	565	760	1175	--	535	720	1110
B1	--	570	770	1185	--	470	630	970	--	420	570	875	--	400	535	820
B2	--	460	625	960	--	380	510	785	--	--	465	710	--	--	435	665
C	--	--	445	685	--	--	--	560	--	--	--	505	--	--	--	475
D	--	--	--	485	--	--	--	395	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $15^\circ < \alpha \leq 30^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	450	605	930	--	370	495	760	--	--	450	685	--	--	425	645
B1	--	--	450	690	--	--	370	570	--	--	--	510	--	--	--	480
B2	--	--	370	560	--	--	--	460	--	--	--	415	--	--	--	390
C	--	--	--	400	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $30^\circ < \alpha \leq 60^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	465	710	--	--	380	580	--	--	--	525	--	--	--	495
B1	--	--	--	530	--	--	--	435	--	--	--	390	--	--	--	370
B2	--	--	--	430	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



Relationships built on trust

Client: **Jiangyin Titanergy Co. Ltd**
Project: **Tilt Array Frame System Spacing Table**
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok Classic 700 Roof
Address: **within Australia**

Job: **14690 - RM08b**
Date: **May-24**
Designed: **BL**
Checked: **LvS**

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok Classic 700 Roof (mm)

Type of Rail: Titan Solar TTV2 Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 2mx1.1m
Terrain category: 3

Tilt angle to roof surface (α), $\alpha \leq 15^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	545	835	1140	1505	545	835	1140	1505	470	720	975	1420	420	640	870	1355
B1	405	620	845	1310	405	620	845	1310	--	535	725	1125	--	480	650	1000
B2	--	505	680	1055	--	505	680	1055	--	435	590	905	--	390	525	805
C	--	355	485	745	--	355	485	745	--	--	420	645	--	--	375	575
D	--	--	--	525	--	--	--	525	--	--	--	455	--	--	--	405

Tilt angle to roof surface (α), $15^\circ < \alpha \leq 30^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	490	660	1020	--	490	660	1020	--	420	570	875	--	375	510	780
B1	--	360	495	755	--	360	495	755	--	--	425	650	--	--	380	580
B2	--	--	400	615	--	--	400	615	--	--	--	530	--	--	--	470
C	--	--	--	435	--	--	--	435	--	--	--	380	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $30^\circ < \alpha \leq 60^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	375	505	775	--	375	505	775	--	--	435	670	--	--	390	595
B1	--	--	380	580	--	--	380	580	--	--	--	500	--	--	--	445
B2	--	--	--	470	--	--	--	470	--	--	--	405	--	--	--	360
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



Relationships built on trust

Client: **Jiangyin Titanergy Co. Ltd**
Project: **Tilt Array Frame System Spacing Table**
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok Classic 700 Roof
Address: **within Australia**

Job: **14690 - RM08b**
Date: **May-24**
Designed: **BL**
Checked: **LvS**

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok Classic 700 Roof (mm)

Type of Rail: Titan Solar TTV2 Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 2mx1.1m
Terrain category: 2

Tilt angle to roof surface (α), $\alpha \leq 15^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	450	685	935	1395	370	560	760	1180	--	505	685	1060	--	480	650	1000
B1	--	510	690	1070	--	420	570	875	--	380	510	785	--	335	485	740
B2	--	415	560	860	--	--	460	705	--	--	415	635	--	--	390	600
C	--	--	400	615	--	--	--	505	--	--	--	455	--	--	--	430
D	--	--	--	435	--	--	--	310	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $15^\circ < \alpha \leq 30^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	405	545	840	--	--	445	685	--	--	405	615	--	--	380	580
B1	--	--	405	620	--	--	--	510	--	--	--	460	--	--	--	435
B2	--	--	--	505	--	--	--	415	--	--	--	375	--	--	--	--
C	--	--	--	360	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $30^\circ < \alpha \leq 60^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	415	640	--	--	--	525	--	--	--	470	--	--	--	445
B1	--	--	--	475	--	--	--	390	--	--	--	--	--	--	--	--
B2	--	--	--	385	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



Relationships built on trust

Client: **Jiangyin Titanergy Co. Ltd**
Project: **Tilt Array Frame System Spacing Table**
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok Classic 700 Roof
Address: **within Australia**

Job: **14690 - RM08b**
Date: **May-24**
Designed: **BL**
Checked: **LvS**

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok Classic 700 Roof (mm)

Type of Rail: Titan Solar TTV2 Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 2.2mx1.2m
Terrain category: 3

Tilt angle to roof surface (α), $\alpha \leq 15^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	495	755	1035	1455	495	755	1035	1455	425	650	885	1375	--	580	790	1230
B1	--	565	765	1190	--	565	765	1190	--	485	660	1020	--	435	590	910
B2	--	460	620	960	--	460	620	960	--	390	535	820	--	--	475	730
C	--	--	440	680	--	--	440	680	--	--	--	585	--	--	--	520
D	--	--	--	480	--	--	--	480	--	--	--	415	--	--	--	--

Tilt angle to roof surface (α), $15^\circ < \alpha \leq 30^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	445	600	925	--	445	600	925	--	--	515	795	--	--	460	710
B1	--	--	450	690	--	--	450	690	--	--	--	590	--	--	--	530
B2	--	--	--	555	--	--	--	555	--	--	--	480	--	--	--	430
C	--	--	--	395	--	--	--	395	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $30^\circ < \alpha \leq 60^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	460	705	--	--	460	705	--	--	390	605	--	--	--	540
B1	--	--	--	525	--	--	--	525	--	--	--	450	--	--	--	405
B2	--	--	--	425	--	--	--	425	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



Relationships built on trust

Client: **Jiangyin Titanergy Co. Ltd**
Project: **Tilt Array Frame System Spacing Table**
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok Classic 700 Roof
Address: **within Australia**

Job: **14690 - RM08b**
Date: **May-24**
Designed: **BL**
Checked: **LvS**

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok Classic 700 Roof (mm)

Type of Rail: Titan Solar TTV2 Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 2.2mx1.2m
Terrain category: 2

Tilt angle to roof surface (α), $\alpha \leq 15^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	410	625	850	1325	--	510	695	1075	--	460	625	960	--	435	590	910
B1	--	465	630	970	--	--	515	795	--	--	465	715	--	--	440	670
B2	--	--	510	785	--	--	420	640	--	--	--	580	--	--	--	545
C	--	--	--	560	--	--	--	455	--	--	--	415	--	--	--	340
D	--	--	--	390	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $15^\circ < \alpha \leq 30^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	495	760	--	--	405	620	--	--	--	560	--	--	--	530
B1	--	--	--	565	--	--	--	465	--	--	--	420	--	--	--	390
B2	--	--	--	460	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $30^\circ < \alpha \leq 60^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	--	580	--	--	--	475	--	--	--	430	--	--	--	405
B1	--	--	--	430	--	--	--	--	--	--	--	--	--	--	--	--
B2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



Client: **Jiangyin Titanergy Co. Ltd**
Project: **Tilt Array Frame System Spacing Table**
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok Classic 700 Roof
Address: **within Australia**

Job: **14690 - RM08b**
Date: **May-24**
Designed: **BL**
Checked: **LvS**

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok Classic 700 Roof (mm)

Type of Rail: Titan Solar TTV2 Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 2.4mx1.2m
Terrain category: 3

Tilt angle to roof surface (α), $\alpha \leq 15^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	450	695	950	1415	450	695	950	1415	340	600	815	1270	--	535	725	1130
B1	--	515	700	1095	--	515	700	1095	--	445	605	935	--	395	540	835
B2	--	420	570	880	--	420	570	880	--	--	490	755	--	--	435	670
C	--	--	405	620	--	--	405	620	--	--	--	535	--	--	--	480
D	--	--	--	440	--	--	--	440	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $15^\circ < \alpha \leq 30^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	405	550	850	--	405	550	850	--	--	475	730	--	--	425	650
B1	--	--	410	630	--	--	410	630	--	--	--	545	--	--	--	485
B2	--	--	--	510	--	--	--	510	--	--	--	440	--	--	--	390
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $30^\circ < \alpha \leq 60^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	420	645	--	--	420	645	--	--	--	555	--	--	--	495
B1	--	--	--	480	--	--	--	480	--	--	--	415	--	--	--	--
B2	--	--	--	340	--	--	--	340	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



Client: **Jiangyin Titanergy Co. Ltd**
Project: **Tilt Array Frame System Spacing Table**
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok Classic 700 Roof
Address: **within Australia**

Job: **14690 - RM08b**
Date: **May-24**
Designed: **BL**
Checked: **LvS**

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok Classic 700 Roof (mm)

Type of Rail: Titan Solar TTV2 Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 2.4mx1.2m
Terrain category: 2

Tilt angle to roof surface (α), $\alpha \leq 15^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	570	780	1215	--	470	635	985	--	420	570	880	--	395	540	835
B1	--	425	575	890	--	--	475	730	--	--	425	655	--	--	400	615
B2	--	--	465	720	--	--	--	590	--	--	--	530	--	--	--	500
C	--	--	--	510	--	--	--	420	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $15^\circ < \alpha \leq 30^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	455	700	--	--	--	570	--	--	--	515	--	--	--	485
B1	--	--	--	515	--	--	--	425	--	--	--	--	--	--	--	--
B2	--	--	--	420	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $30^\circ < \alpha \leq 60^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	--	530	--	--	--	435	--	--	--	390	--	--	--	--
B1	--	--	--	390	--	--	--	--	--	--	--	--	--	--	--	--
B2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



Relationships built on trust

Client: **Jiangyin Titanergy Co. Ltd**
Project: **Tilt Array Frame System Spacing Table**
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok Classic 700 Roof
within Australia

Job: **14690 - RM08b**
Date: **May-24**
Designed: **BL**
Checked: **LvS**

General Notes

Note 1 Following components are satisfied to use according to AS/NZS 1170.2:2021

Components	Part Number	Description
Rail	Titan Solar TTV2 Rail	As per drawing or test report provided by client
Mid Clamp	Mid Clamp Kit 40mm	
End Clamp	End Clamp Kit 40mm	
Roof Clamp	Titan Solar Cliplok 700	
Tilt Roof System	Titan Solar Tilt Roof System	

Note 2 Spacing calculated based on the roof clamp test results.

Note 3 Maximum uplift wind pressure is limited to 5kPa.

Note 4 Deflection is limited to Minimum of L/120 and 15mm.

Note 5 Tilt angle is measured from roof surface.

Note 6 "--" states NOT SUITABLE FOR INSTALLATION.

Note 7 Refer section 4.2.1 of AS/NZS 1170.2:2021 for terrain category definition.

Note 8 Wind regions are shown in Figure 3.1(A) of AS/NZS 1170.2:2021.

Note 9 Building height is average roof height of structure above ground. Refer Figure 1 for definition of h, d and b.

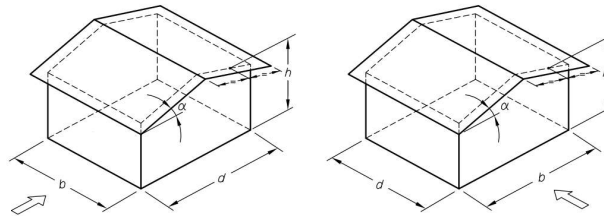
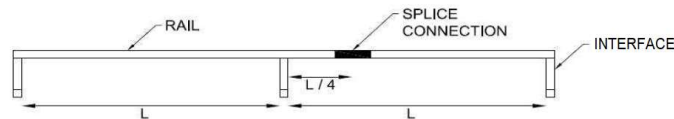


Figure 1 – h, d and b definition

Note 10 Rail splice connection must be placed a quarter length of the spacing of interface. No Splice connection should be placed at the centre of spacing or over the interface.



Note 11 Refer Figure 2 for definition of roof zones.

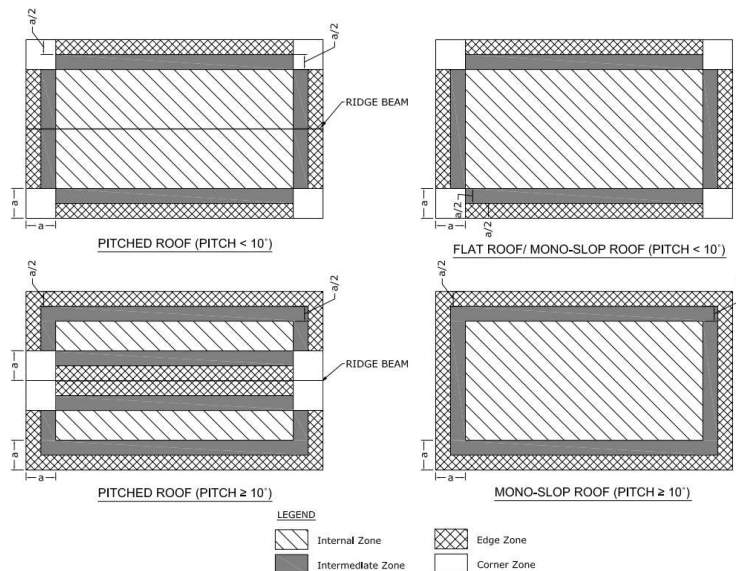


Figure2- Roof Zones Definition

In Figure 2, the value of dimension "a" is the minimum of 0.2b or 0.2d, if (h/b) or (h/d) ≥ 0.2; or 2h if both (h/b) and (h/d) < 0.2 (b & d are building dimensions and h is average roof height, see Figure 1)

Structural Design Documentation

Tilt Array Frame System Spacing Table

According to AS/NZS 1170.2-2021

with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok 700 Hi-Strength Roof
within Australia
Terrain Category 2 & 3

For: Jiangyin Titanergy Co. Ltd
No.11 Wuxiang Road
Yunting Street, Jiangyin
China 214422

Job Number: 14690 - RM08
Date: 30 May 2024



Relationships built on trust

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Job No: 14690 - RM08c
Client: Jiangyin Titanergy Co. Ltd
Project: Tilt Array Frame System Spacing Table
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok 700 Hi-Strength Roof
Address: within Australia
Wind Terrain Category: Terrain Category 2 & 3

Australian/New Zealand Standards

AS/NZS 1170.0:2002	Structural design actions Part 0: General principles
AS/NZS 1170.1:2002 (R2016)	Structural design actions Part 1: Permanent, imposed and other actions
AS/NZS 1170.2:2021	Structural design actions Part 2: Wind actions
AS/NZS 1664.1:1997 (R2020)	Aluminium structures Part 1: Limit state design
AS/NZS 4600:2018	Cold-formed steel structures
AS 4100:2020	Steel structures

Designed: BL
Checked: LvS
Date: May-24



Client: **Jiangyin Titanergy Co. Ltd**
Project: **Tilt Array Frame System Spacing Table**
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok Classic 700 Roof
Address: **within Australia**

Job: **14690 - RM08c**
Date: **May-24**
Designed: **BL**
Checked: **LvS**

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok 700 Hi-Strength Roof (mm)

Type of Rail: Titan Solar TTV2 Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 1.8mx1.1m
Terrain category: 3

Tilt angle to roof surface (α), $\alpha \leq 15^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	575	885	1210	1555	575	885	1210	1555	495	760	1035	1470	445	680	925	1405
B1	430	660	895	1390	430	660	895	1390	375	570	770	1190	--	510	690	1060
B2	--	535	725	1120	--	535	725	1120	--	460	625	960	--	415	555	855
C	--	385	515	790	--	385	515	790	--	--	445	685	--	--	400	610
D	--	--	365	560	--	--	365	560	--	--	--	480	--	--	--	430

Tilt angle to roof surface (α), $15^\circ < \alpha \leq 30^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	540	730	1130	--	540	730	1130	--	465	630	970	--	420	565	865
B1	--	405	545	840	--	405	545	840	--	--	470	720	--	--	420	645
B2	--	--	445	680	--	--	445	680	--	--	385	585	--	--	--	525
C	--	--	--	485	--	--	--	485	--	--	--	420	--	--	--	375
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $30^\circ < \alpha \leq 60^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	415	560	865	--	415	560	865	--	335	485	740	--	--	435	665
B1	--	--	420	640	--	--	420	640	--	--	360	555	--	--	--	495
B2	--	--	--	520	--	--	--	520	--	--	--	450	--	--	--	400
C	--	--	--	370	--	--	--	370	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



Client: **Jiangyin Titanergy Co. Ltd**
Project: **Tilt Array Frame System Spacing Table**
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok Classic 700 Roof
Address: **within Australia**

Job: **14690 - RM08c**
Date: **May-24**
Designed: **BL**
Checked: **LvS**

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok 700 Hi-Strength Roof (mm)

Type of Rail: Titan Solar TTV2 Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 1.8mx1.1m
Terrain category: 2

Tilt angle to roof surface (α), $\alpha \leq 15^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	475	730	990	1445	390	595	810	1255	--	535	725	1125	--	510	690	1060
B1	--	540	735	1135	--	445	605	925	--	405	545	835	--	380	510	785
B2	--	440	595	915	--	360	490	750	--	--	440	675	--	--	415	635
C	--	--	425	650	--	--	--	535	--	--	--	480	--	--	--	455
D	--	--	--	460	--	--	--	380	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $15^\circ < \alpha \leq 30^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	445	605	930	--	365	495	760	--	--	445	680	--	--	420	645
B1	--	--	450	690	--	--	370	565	--	--	--	510	--	--	--	480
B2	--	--	365	560	--	--	--	460	--	--	--	415	--	--	--	390
C	--	--	--	400	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $30^\circ < \alpha \leq 60^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	465	710	--	--	380	580	--	--	--	525	--	--	--	495
B1	--	--	--	530	--	--	--	435	--	--	--	390	--	--	--	370
B2	--	--	--	430	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



Relationships built on trust

Client: **Jiangyin Titanergy Co. Ltd**
Project: **Tilt Array Frame System Spacing Table**
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok Classic 700 Roof
Address: **within Australia**

Job: **14690 - RM08c**
Date: **May-24**
Designed: **BL**
Checked: **LvS**

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok 700 Hi-Strength Roof (mm)

Type of Rail: Titan Solar TTV2 Rail
Type of Interface: Clielok 700
Solar Panel Dimension: 2mx1.1m
Terrain category: 3

Tilt angle to roof surface (α), $\alpha \leq 15^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	520	795	1085	1505	520	795	1085	1505	445	685	930	1420	400	610	830	1295
B1	390	595	805	1250	390	595	805	1250	--	510	690	1070	--	460	620	955
B2	--	480	650	1005	--	480	650	1005	--	415	560	865	--	370	500	770
C	--	--	465	710	--	--	465	710	--	--	400	615	--	--	355	550
D	--	--	--	505	--	--	--	505	--	--	--	435	--	--	--	385

Tilt angle to roof surface (α), $15^\circ < \alpha \leq 30^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	485	660	1015	--	485	660	1015	--	420	565	875	--	375	505	780
B1	--	360	490	755	--	360	490	755	--	--	425	650	--	--	380	580
B2	--	--	400	610	--	--	400	610	--	--	--	525	--	--	--	470
C	--	--	--	435	--	--	--	435	--	--	--	375	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $30^\circ < \alpha \leq 60^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	375	505	775	--	375	505	775	--	--	435	670	--	--	390	595
B1	--	--	380	580	--	--	380	580	--	--	--	500	--	--	--	445
B2	--	--	--	470	--	--	--	470	--	--	--	405	--	--	--	360
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



Relationships built on trust

Client: **Jiangyin Titanergy Co. Ltd**
Project: **Tilt Array Frame System Spacing Table**
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok Classic 700 Roof
Address: **within Australia**

Job: **14690 - RM08c**
Date: **May-24**
Designed: **BL**
Checked: **Lvs**

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok 700 Hi-Strength Roof (mm)

Type of Rail: Titan Solar TTV2 Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 2m x 1.1m
Terrain category: 2

Tilt angle to roof surface (α), $\alpha \leq 15^\circ$

Wind Region	Building Height – h (m)															
	h ≤ 5				5 < h ≤ 10				10 < h ≤ 15				15 < h ≤ 20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	430	655	890	1390	--	535	725	1125	--	485	655	1010	--	460	620	955
B1	--	490	660	1020	--	400	540	835	--	360	490	750	--	--	460	705
B2	--	395	535	825	--	--	440	675	--	--	400	610	--	--	375	570
C	--	--	385	585	--	--	--	480	--	--	--	435	--	--	--	410
D	--	--	--	415	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $15^\circ < \alpha \leq 30^\circ$

Wind Region	Building Height – h (m)															
	h ≤ 5				5 < h ≤ 10				10 < h ≤ 15				15 < h ≤ 20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	400	545	835	--	--	445	680	--	--	400	615	--	--	380	580
B1	--	--	405	620	--	--	--	510	--	--	--	460	--	--	--	430
B2	--	--	--	500	--	--	--	415	--	--	--	375	--	--	--	--
C	--	--	--	355	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $30^\circ < \alpha \leq 60^\circ$

Wind Region	Building Height – h (m)															
	h ≤ 5				5 < h ≤ 10				10 < h ≤ 15				15 < h ≤ 20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	415	640	--	--	--	525	--	--	--	470	--	--	--	445
B1	--	--	--	475	--	--	--	390	--	--	--	--	--	--	--	--
B2	--	--	--	385	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



Relationships built on trust

Client: **Jiangyin Titanergy Co. Ltd**
Project: **Tilt Array Frame System Spacing Table**
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok Classic 700 Roof
Address: **within Australia**

Job: **14690 - RM08c**
Date: **May-24**
Designed: **BL**
Checked: **Lvs**

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok 700 Hi-Strength Roof (mm)

Type of Rail: Titan Solar TTV2 Rail
Type of Interface: Clielok 700
Solar Panel Dimension: 2.2mx1.2m
Terrain category: 3

Tilt angle to roof surface (α), $\alpha \leq 15^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	470	725	990	1455	470	725	990	1455	405	625	845	1325	--	555	755	1175
B1	--	540	730	1140	--	540	730	1140	--	465	630	975	--	415	560	865
B2	--	435	590	915	--	435	590	915	--	--	510	785	--	--	455	700
C	--	--	420	645	--	--	420	645	--	--	--	560	--	--	--	500
D	--	--	--	455	--	--	--	455	--	--	--	390	--	--	--	--

Tilt angle to roof surface (α), $15^\circ < \alpha \leq 30^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	440	600	925	--	440	600	925	--	--	515	795	--	--	460	710
B1	--	--	445	685	--	--	445	685	--	--	--	590	--	--	--	525
B2	--	--	--	555	--	--	--	555	--	--	--	480	--	--	--	425
C	--	--	--	390	--	--	--	390	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $30^\circ < \alpha \leq 60^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	460	705	--	--	460	705	--	--	390	605	--	--	--	540
B1	--	--	--	525	--	--	--	525	--	--	--	450	--	--	--	405
B2	--	--	--	425	--	--	--	425	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



Relationships built on trust

Client: **Jiangyin Titanergy Co. Ltd**
Project: **Tilt Array Frame System Spacing Table**
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok Classic 700 Roof
Address: **within Australia**

Job: **14690 - RM08c**
Date: **May-24**
Designed: **BL**
Checked: **Lvs**

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok 700 Hi-Strength Roof (mm)

Type of Rail: Titan Solar TTV2 Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 2.2mx1.2m
Terrain category: 2

Tilt angle to roof surface (α), $\alpha \leq 15^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	340	595	810	1265	--	490	660	1025	--	440	595	920	--	415	560	865
B1	--	445	600	925	--	--	495	760	--	--	445	680	--	--	420	640
B2	--	--	485	750	--	--	400	610	--	--	--	555	--	--	--	520
C	--	--	--	535	--	--	--	435	--	--	--	390	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $15^\circ < \alpha \leq 30^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	495	760	--	--	405	620	--	--	--	555	--	--	--	525
B1	--	--	--	565	--	--	--	460	--	--	--	415	--	--	--	390
B2	--	--	--	455	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $30^\circ < \alpha \leq 60^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	--	580	--	--	--	475	--	--	--	430	--	--	--	405
B1	--	--	--	430	--	--	--	--	--	--	--	--	--	--	--	--
B2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



Client: **Jiangyin Titanergy Co. Ltd**
Project: **Tilt Array Frame System Spacing Table**
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok Classic 700 Roof
Address: **within Australia**

Job: **14690 - RM08c**
Date: **May-24**
Designed: **BL**
Checked: **LvS**

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok 700 Hi-Strength Roof (mm)

Type of Rail: Titan Solar TTV2 Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 2.4mx1.2m
Terrain category: 3

Tilt angle to roof surface (α), $\alpha \leq 15^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	430	665	905	1415	430	665	905	1415	--	570	775	1215	--	510	690	1080
B1	--	495	670	1045	--	495	670	1045	--	425	575	895	--	--	515	795
B2	--	400	540	840	--	400	540	840	--	--	465	720	--	--	415	640
C	--	--	--	595	--	--	--	595	--	--	--	510	--	--	--	455
D	--	--	--	420	--	--	--	420	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $15^\circ < \alpha \leq 30^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	405	550	845	--	405	550	845	--	--	470	725	--	--	420	650
B1	--	--	410	630	--	--	410	630	--	--	--	540	--	--	--	485
B2	--	--	--	510	--	--	--	510	--	--	--	440	--	--	--	390
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $30^\circ < \alpha \leq 60^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	420	645	--	--	420	645	--	--	--	555	--	--	--	495
B1	--	--	--	480	--	--	--	480	--	--	--	415	--	--	--	--
B2	--	--	--	340	--	--	--	340	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



Client: **Jiangyin Titanergy Co. Ltd**
Project: **Tilt Array Frame System Spacing Table**
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok Classic 700 Roof
Address: **within Australia**

Job: **14690 - RM08c**
Date: **May-24**
Designed: **BL**
Checked: **LvS**

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok 700 Hi-Strength Roof (mm)

Type of Rail: Titan Solar TTV2 Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 2.4mx1.2m
Terrain category: 2

Tilt angle to roof surface (α), $\alpha \leq 15^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	545	745	1160	--	445	605	940	--	400	545	840	--	--	515	795
B1	--	405	550	850	--	--	450	695	--	--	405	625	--	--	--	590
B2	--	--	445	685	--	--	--	560	--	--	--	505	--	--	--	475
C	--	--	--	490	--	--	--	400	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $15^\circ < \alpha \leq 30^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	450	695	--	--	--	570	--	--	--	510	--	--	--	485
B1	--	--	--	515	--	--	--	425	--	--	--	--	--	--	--	--
B2	--	--	--	420	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $30^\circ < \alpha \leq 60^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	--	530	--	--	--	435	--	--	--	390	--	--	--	--
B1	--	--	--	390	--	--	--	--	--	--	--	--	--	--	--	--
B2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



Relationships built on trust

Client: **Jiangyin Titanergy Co. Ltd**
Project: **Tilt Array Frame System Spacing Table**
with **Titan Solar TTV2 Rail – LYSAGHT Klip-Lok Classic 700 Roof**
Address: **within Australia**

Job: **14690 - RM08c**
Date: **May-24**
Designed: **BL**
Checked: **LvS**

General Notes

Note 1 Following components are satisfied to use according to AS/NZS 1170.2:2021

Components	Part Number	Description
Rail	Titan Solar TTV2 Rail	As per drawing or test report provided by client
Mid Clamp	Mid Clamp Kit 40mm	
End Clamp	End Clamp Kit 40mm	
Roof Clamp	Titan Solar Cliplok 700	
Tilt Roof System	Titan Solar Tilt Roof System	

Note 2 Spacing calculated based on the roof clamp test results.

Note 3 Maximum uplift wind pressure is limited to 5kPa.

Note 4 Deflection is limited to Minimum of L/120 and 15mm.

Note 5 Tilt angle is measured from roof surface.

Note 6 "--" states NOT SUITABLE FOR INSTALLATION.

Note 7 Refer section 4.2.1 of AS/NZS 1170.2:2021 for terrain category definition.

Note 8 Wind regions are shown in Figure 3.1(A) of AS/NZS 1170.2:2021.

Note 9 Building height is average roof height of structure above ground. Refer Figure 1 for definition of h, d and b.

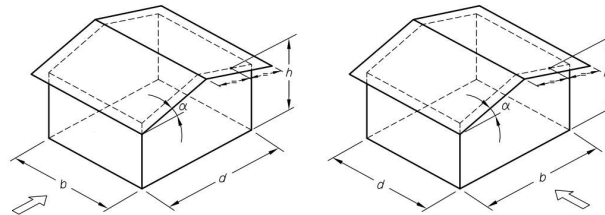
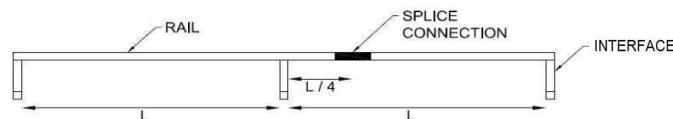


Figure 1 – h, d and b definition

Note 10 Rail splice connection must be placed a quarter length of the spacing of interface. No Splice connection should be placed at the centre of spacing or over the interface.



Note 11 Refer Figure 2 for definition of roof zones.

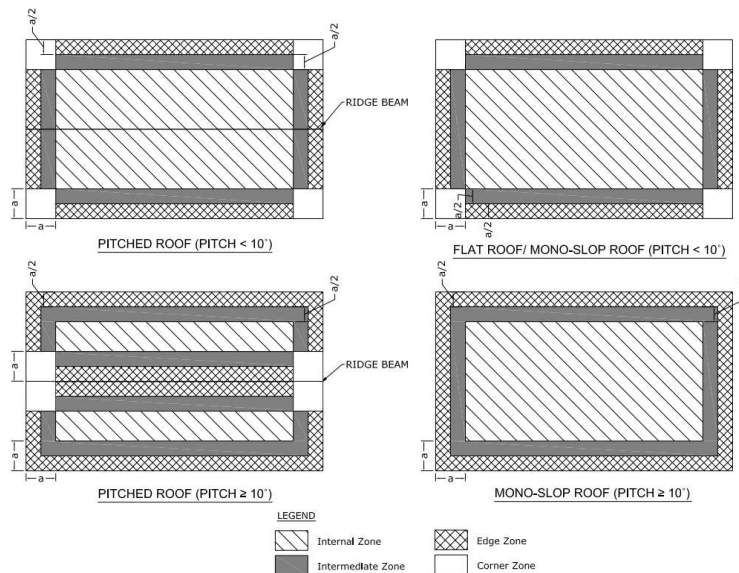


Figure2- Roof Zones Definition

In Figure 2, the value of dimension "a" is the minimum of 0.2b or 0.2d, if (h/b) or (h/d) ≥ 0.2; or 2h if both (h/b) and (h/d) < 0.2 (b & d are building dimensions and h is average roof height, see Figure 1)

Structural Design Documentation

Tilt Array Frame System Spacing Table

According to AS/NZS 1170.2-2021

with Titan Solar TTV2 Rail – STRAMIT Speed Deck Ultra 700 Roof
within Australia
Terrain Category 2 & 3

For: Jiangyin Titanergy Co. Ltd
No.11 Wuxiang Road
Yunting Street, Jiangyin
China 214422

Job Number: 14690 - RM08
Date: 30 May 2024



Job No: 14690 - RM08d
Client: Jiangyin Titanergy Co. Ltd
Project: Tilt Array Frame System Spacing Table
with Titan Solar TTV2 Rail – STRAMIT Speed Deck Ultra 700 Roof
Address: within Australia
Wind Terrain Category: Terrain Category 2 & 3

Australian/New Zealand Standards

AS/NZS 1170.0:2002	Structural design actions Part 0: General principles
AS/NZS 1170.1:2002 (R2016)	Structural design actions Part 1: Permanent, imposed and other actions
AS/NZS 1170.2:2021	Structural design actions Part 2: Wind actions
AS/NZS 1664.1:1997 (R2020)	Aluminium structures Part 1: Limit state design
AS/NZS 4600:2018	Cold-formed steel structures
AS 4100:2020	Steel structures

Designed: BL
Checked: LvS
Date: May-24



Client: **Jiangyin Titanergy Co. Ltd**
Project: **Tilt Array Frame System Spacing Table**
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok Classic 700 Roof
Address: **within Australia**

Job: **14690 - RM08d**
Date: **May-24**
Designed: **BL**
Checked: **LvS**

Tilt Array Frame System Spacing Table for STRAMIT Speed Deck Ultra 700 Roof (mm)

Type of Rail: Titan Solar TTV2 Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 1.8mx1.1m
Terrain category: 3

Tilt angle to roof surface (α), $\alpha \leq 15^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	630	965	1315	1555	630	965	1315	1555	540	830	1130	1470	485	740	1005	1405
B1	470	720	975	1520	470	720	975	1520	405	620	840	1300	--	555	750	1155
B2	--	585	790	1220	--	585	790	1220	--	505	680	1045	--	450	605	930
C	--	420	565	865	--	420	565	865	--	--	490	745	--	--	435	665
D	--	--	400	610	--	--	400	610	--	--	--	525	--	--	--	470

Tilt angle to roof surface (α), $15^\circ < \alpha \leq 30^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	540	735	1135	--	540	735	1135	--	470	635	975	--	420	565	870
B1	--	405	550	840	--	405	550	840	--	--	475	725	--	--	425	645
B2	--	--	445	680	--	--	445	680	--	--	385	585	--	--	--	525
C	--	--	--	485	--	--	--	485	--	--	--	420	--	--	--	375
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $30^\circ < \alpha \leq 60^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	415	560	865	--	415	560	865	--	335	485	740	--	--	435	665
B1	--	--	420	640	--	--	420	640	--	--	360	555	--	--	--	495
B2	--	--	--	520	--	--	--	520	--	--	--	450	--	--	--	400
C	--	--	--	370	--	--	--	370	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



Relationships built on trust

Client: **Jiangyin Titanergy Co. Ltd**
Project: **Tilt Array Frame System Spacing Table**
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok Classic 700 Roof
Address: **within Australia**

Job: **14690 - RM08d**
Date: **May-24**
Designed: **BL**
Checked: **LvS**

Tilt Array Frame System Spacing Table for STRAMIT Speed Deck Ultra 700 Roof (mm)

Type of Rail: Titan Solar TTV2 Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 1.8mx1.1m
Terrain category: 2

Tilt angle to roof surface (α), $\alpha \leq 15^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	520	795	1080	1445	425	650	880	1340	--	585	795	1225	--	555	750	1155
B1	--	590	800	1235	--	485	660	1010	--	440	595	910	--	415	560	855
B2	--	480	650	1000	--	395	535	815	--	--	480	735	--	--	455	695
C	--	--	465	710	--	--	--	585	--	--	--	525	--	--	--	495
D	--	--	--	505	--	--	--	415	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $15^\circ < \alpha \leq 30^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	450	605	930	--	370	495	760	--	--	450	685	--	--	425	645
B1	--	--	450	690	--	--	370	570	--	--	--	510	--	--	--	480
B2	--	--	370	560	--	--	--	460	--	--	--	415	--	--	--	390
C	--	--	--	400	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $30^\circ < \alpha \leq 60^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	465	710	--	--	380	580	--	--	--	525	--	--	--	495
B1	--	--	--	530	--	--	--	435	--	--	--	390	--	--	--	370
B2	--	--	--	430	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



Relationships built on trust

Client: **Jiangyin Titanergy Co. Ltd**
Project: **Tilt Array Frame System Spacing Table**
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok Classic 700 Roof
Address: **within Australia**

Job: **14690 - RM08d**
Date: **May-24**
Designed: **BL**
Checked: **LvS**

Tilt Array Frame System Spacing Table for STRAMIT Speed Deck Ultra 700 Roof (mm)

Type of Rail: Titan Solar TTV2 Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 2mx1.1m
Terrain category: 3

Tilt angle to roof surface (α), $\alpha \leq 15^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	565	870	1185	1505	565	870	1185	1505	490	745	1015	1420	435	665	905	1360
B1	425	645	880	1365	425	645	880	1365	360	560	755	1170	--	500	675	1040
B2	--	525	710	1095	--	525	710	1095	--	455	610	940	--	405	545	840
C	--	375	505	775	--	375	505	775	--	--	440	670	--	--	390	600
D	--	--	355	550	--	--	355	550	--	--	--	475	--	--	--	420

Tilt angle to roof surface (α), $15^\circ < \alpha \leq 30^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	490	660	1020	--	490	660	1020	--	420	570	875	--	375	510	780
B1	--	360	495	755	--	360	495	755	--	--	425	650	--	--	380	580
B2	--	--	400	615	--	--	400	615	--	--	--	530	--	--	--	470
C	--	--	--	435	--	--	--	435	--	--	--	380	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $30^\circ < \alpha \leq 60^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	375	505	775	--	375	505	775	--	--	435	670	--	--	390	595
B1	--	--	380	580	--	--	380	580	--	--	--	500	--	--	--	445
B2	--	--	--	470	--	--	--	470	--	--	--	405	--	--	--	360
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



Relationships built on trust

Client: **Jiangyin Titanergy Co. Ltd**
Project: **Tilt Array Frame System Spacing Table**
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok Classic 700 Roof
Address: **within Australia**

Job: **14690 - RM08d**
Date: **May-24**
Designed: **BL**
Checked: **LvS**

Tilt Array Frame System Spacing Table for STRAMIT Speed Deck Ultra 700 Roof (mm)

Type of Rail: Titan Solar TTV2 Rail
Type of Interface: Clielok 700
Solar Panel Dimension: 2mx1.1m
Terrain category: 2

Tilt angle to roof surface (α), $\alpha \leq 15^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	465	715	975	1395	385	585	795	1230	--	525	715	1100	--	500	675	1040
B1	--	530	720	1115	--	440	590	910	--	395	535	820	--	375	505	770
B2	--	435	585	900	--	--	480	735	--	--	435	665	--	--	410	625
C	--	--	420	640	--	--	--	525	--	--	--	475	--	--	--	445
D	--	--	--	450	--	--	--	370	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $15^\circ < \alpha \leq 30^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	405	545	840	--	--	445	685	--	--	405	615	--	--	380	580
B1	--	--	405	620	--	--	--	510	--	--	--	460	--	--	--	435
B2	--	--	--	505	--	--	--	415	--	--	--	375	--	--	--	--
C	--	--	--	360	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $30^\circ < \alpha \leq 60^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	415	640	--	--	--	525	--	--	--	470	--	--	--	445
B1	--	--	--	475	--	--	--	390	--	--	--	--	--	--	--	--
B2	--	--	--	385	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



Relationships built on trust

Client: **Jiangyin Titanergy Co. Ltd**
Project: **Tilt Array Frame System Spacing Table**
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok Classic 700 Roof
Address: **within Australia**

Job: **14690 - RM08d**
Date: **May-24**
Designed: **BL**
Checked: **LvS**

Tilt Array Frame System Spacing Table for STRAMIT Speed Deck Ultra 700 Roof (mm)

Type of Rail: Titan Solar TTV2 Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 2.2mx1.2m
Terrain category: 3

Tilt angle to roof surface (α), $\alpha \leq 15^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	515	790	1075	1455	515	790	1075	1455	445	680	925	1375	395	605	825	1285
B1	--	590	800	1240	--	590	800	1240	--	505	685	1060	--	455	615	945
B2	--	475	645	995	--	475	645	995	--	410	555	855	--	--	495	765
C	--	--	460	705	--	--	460	705	--	--	395	610	--	--	--	545
D	--	--	--	500	--	--	--	500	--	--	--	430	--	--	--	--

Tilt angle to roof surface (α), $15^\circ < \alpha \leq 30^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	445	600	925	--	445	600	925	--	--	515	795	--	--	460	710
B1	--	--	450	690	--	--	450	690	--	--	--	590	--	--	--	530
B2	--	--	--	555	--	--	--	555	--	--	--	480	--	--	--	430
C	--	--	--	395	--	--	--	395	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $30^\circ < \alpha \leq 60^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	460	705	--	--	460	705	--	--	390	605	--	--	--	540
B1	--	--	--	525	--	--	--	525	--	--	--	450	--	--	--	405
B2	--	--	--	425	--	--	--	425	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



Relationships built on trust

Client: **Jiangyin Titanergy Co. Ltd**
Project: **Tilt Array Frame System Spacing Table**
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok Classic 700 Roof
Address: **within Australia**

Job: **14690 - RM08d**
Date: **May-24**
Designed: **BL**
Checked: **LvS**

Tilt Array Frame System Spacing Table for STRAMIT Speed Deck Ultra 700 Roof (mm)

Type of Rail: Titan Solar TTV2 Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 2.2mx1.2m
Terrain category: 2

Tilt angle to roof surface (α), $\alpha \leq 15^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	425	650	885	1350	--	530	720	1115	--	480	650	1000	--	455	615	945
B1	--	485	655	1010	--	395	540	825	--	--	485	745	--	--	455	700
B2	--	390	530	815	--	--	435	670	--	--	390	605	--	--	--	565
C	--	--	--	580	--	--	--	475	--	--	--	430	--	--	--	405
D	--	--	--	410	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $15^\circ < \alpha \leq 30^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	495	760	--	--	405	620	--	--	--	560	--	--	--	530
B1	--	--	--	565	--	--	--	465	--	--	--	420	--	--	--	390
B2	--	--	--	460	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $30^\circ < \alpha \leq 60^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	--	580	--	--	--	475	--	--	--	430	--	--	--	405
B1	--	--	--	430	--	--	--	--	--	--	--	--	--	--	--	--
B2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



Client: **Jiangyin Titanergy Co. Ltd**
Project: **Tilt Array Frame System Spacing Table**
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok Classic 700 Roof
Address: **within Australia**

Job: **14690 - RM08d**
Date: **May-24**
Designed: **BL**
Checked: **LvS**

Tilt Array Frame System Spacing Table for STRAMIT Speed Deck Ultra 700 Roof (mm)

Type of Rail: Titan Solar TTV2 Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 2.4mx1.2m
Terrain category: 3

Tilt angle to roof surface (α), $\alpha \leq 15^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	470	725	985	1415	470	725	985	1415	405	620	845	1325	--	555	755	1175
B1	--	540	730	1140	--	540	730	1140	--	465	630	975	--	415	560	865
B2	--	435	590	915	--	435	590	915	--	--	510	785	--	--	455	700
C	--	--	420	645	--	--	420	645	--	--	--	560	--	--	--	500
D	--	--	--	455	--	--	--	455	--	--	--	390	--	--	--	--

Tilt angle to roof surface (α), $15^\circ < \alpha \leq 30^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	405	550	850	--	405	550	850	--	--	475	730	--	--	425	650
B1	--	--	410	630	--	--	410	630	--	--	--	545	--	--	--	485
B2	--	--	--	510	--	--	--	510	--	--	--	440	--	--	--	390
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $30^\circ < \alpha \leq 60^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	420	645	--	--	420	645	--	--	--	555	--	--	--	495
B1	--	--	--	480	--	--	--	480	--	--	--	415	--	--	--	--
B2	--	--	--	340	--	--	--	340	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



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Relationships built on trust

Client: **Jiangyin Titanergy Co. Ltd**
Project: **Tilt Array Frame System Spacing Table
with Titan Solar TTV2 Rail – LYSAGHT Klip-Lok Classic 700 Roof
within Australia**

Job: **14690 - RM08d**
Date: **May-24**
Designed: **BL**
Checked: **LvS**

Tilt Array Frame System Spacing Table for STRAMIT Speed Deck Ultra 700 Roof (mm)

Type of Rail: Titan Solar TTV2 Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 2.4mx1.2m
Terrain category: 2

Tilt angle to roof surface (α), $\alpha \leq 15^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	595	810	1265	--	485	660	1025	--	440	595	920	--	415	560	865
B1	--	445	600	925	--	--	495	760	--	--	445	680	--	--	420	640
B2	--	--	485	750	--	--	395	610	--	--	--	550	--	--	--	520
C	--	--	--	535	--	--	--	435	--	--	--	390	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $15^\circ < \alpha \leq 30^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	455	700	--	--	--	570	--	--	--	515	--	--	--	485
B1	--	--	--	515	--	--	--	425	--	--	--	--	--	--	--	--
B2	--	--	--	420	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt angle to roof surface (α), $30^\circ < \alpha \leq 60^\circ$

Wind Region	Building Height – h (m)															
	h≤5				5<h≤10				10<h≤15				15<h≤20			
	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal	Corner	Edge	Intermed iate	Internal
A	--	--	--	530	--	--	--	435	--	--	--	390	--	--	--	--
B1	--	--	--	390	--	--	--	--	--	--	--	--	--	--	--	--
B2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



Client: **Jiangyin Titanergy Co. Ltd**
Project: **Tilt Array Frame System Spacing Table**
with **Titan Solar TTV2 Rail – LYSAGHT Klip-Lok Classic 700 Roof**
Address: **within Australia**

Job: **14690 - RM08d**
Date: **May-24**
Designed: **BL**
Checked: **LvS**

General Notes

Note 1 Following components are satisfied to use according to AS/NZS 1170.2:2021

Components	Part Number	Description
Rail	Titan Solar TTV2 Rail	As per drawing or test report provided by client
Mid Clamp	Mid Clamp Kit 40mm	
End Clamp	End Clamp Kit 40mm	
Roof Clamp	Titan Solar Cliplok 700	
Tilt Roof System	Titan Solar Tilt Roof System	

Note 2 Spacing calculated based on the roof clamp test results.

Note 3 Maximum uplift wind pressure is limited to 5kPa.

Note 4 Deflection is limited to Minimum of L/120 and 15mm.

Note 5 Tilt angle is measured from roof surface.

Note 6 "--" states NOT SUITABLE FOR INSTALLATION.

Note 7 Refer section 4.2.1 of AS/NZS 1170.2:2021 for terrain category definition.

Note 8 Wind regions are shown in Figure 3.1(A) of AS/NZS 1170.2:2021.

Note 9 Building height is average roof height of structure above ground. Refer Figure 1 for definition of h, d and b.

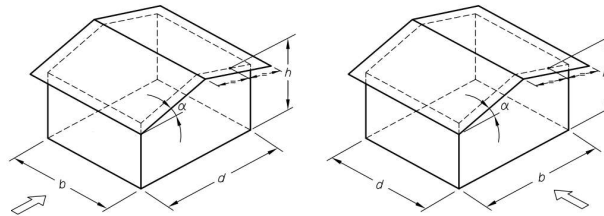
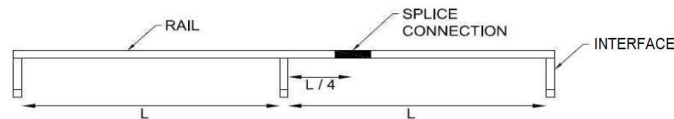


Figure 1 – h, d and b definition

Note 10 Rail splice connection must be placed a quarter length of the spacing of interface. No Splice connection should be placed at the centre of spacing or over the interface.



Note 11 Refer Figure 2 for definition of roof zones.

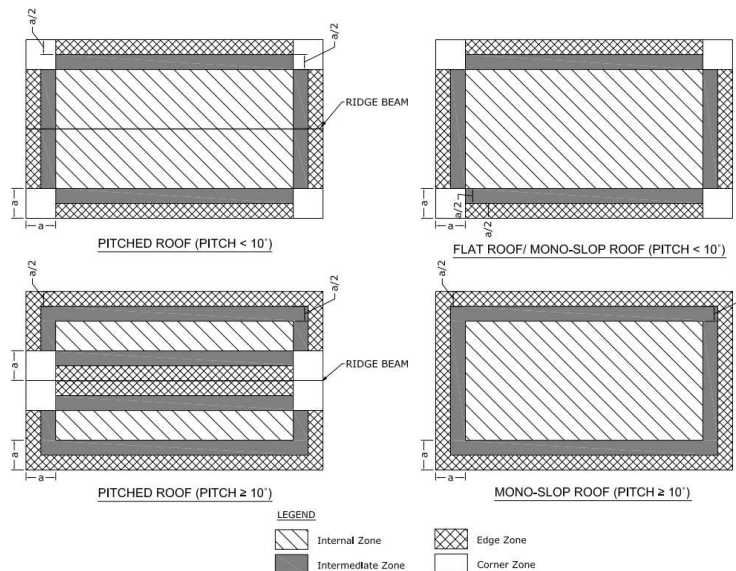


Figure2- Roof Zones Definition

In Figure 2, the value of dimension "a" is the minimum of 0.2b or 0.2d, if (h/b) or (h/d) ≥ 0.2; or 2h if both (h/b) and (h/d) < 0.2 (b & d are building dimensions and h is average roof height, see Figure 1)