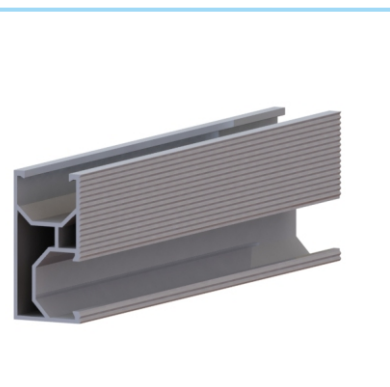
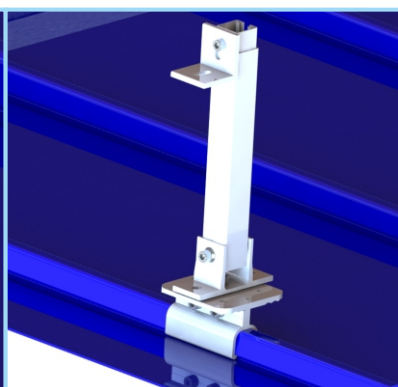
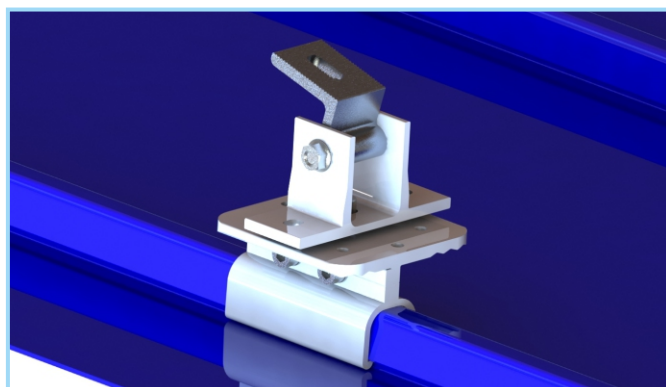




SOLAR ROOF MOUNTING SYSTEM INSTALLATION MANUAL

>>> **MODEL NAME: TT TILT SYSTEM WITH CLIPLOK**

JIANGYIN TITANERGY CO.,LTD.

Model Name: TT TILT SYSTEM WITH CLIPLOK

Phone:0086-510-86610879

Fax:0086-510-86610877

Web:www.titanergy.com

Mail:info@titanergy.com

Gamcorp (Melbourne) Pty Ltd A.C.N 141 076 904 A.B.N 73 015 060 240
www.gamcorp.com.au Email: melbourne@gamcorp.com.au
35 Butler Street, Richmond VIC 3121 Tel: 03 9543 2211

Our Ref: 10038-04-TT/BL
16 August 2021

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

PV Array Frame Engineering Certification

RE: AS/NZ 1170.2 Certification for Titanergy Tilt Mounted System on Lysaght Klip Lok 406, Lysaght Klip Lok 700 Classic, Lysaght Klip Lok 700 Hi-Strength, Stramit Speed Deck Ultra 700 (Concealed Fix Roof) with TT Rails

Gamcorp (Melbourne) 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 Lysaght Klip Lok 406, Lysaght Klip Lok 700 Classic, Lysaght Klip Lok 700 Hi-Strength, Stramit Speed Deck Ultra 700 (Concealed Fix Roof) with TT rails within Australia. The design check is based on the information and test reports provided by Jiangyin Titanergy Co. LTD.

For the indicative location of **full rib** in the roof sheeting, please see **Figure 1**.

This certificate is **only valid** for Titanergy Tilt Mounted System on the Concealed Fix Roof themselves. The roof structure or the building structure and PV panels 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.

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 Flush Mounted System on these Concealed Fix Roof for Australian use to be structurally sufficient based on the following conditions:

- Wind loads to AS/NZ1170.2:2011(R2016) Wind actions
- Wind region **A, B, C, D**
- Wind terrain category **2 & 3**
- Wind average recurrence interval of **200 years**
- Maximum building height **20m**
- The maximum assessed PV panel dimensions are **1800mm x 1100mm, 2000mm x 1100mm, 2200mm x 1200mm, 2400mm x 1200mm**
- Weight of the PV panel and array frame to be 15 kg/m²
- Rails to be **TT Rails**
- Roof clamp to be Cliplok **406 and 700**
- Material of rails and tilt roof system to be **AL6005-T5 UNO**

*ISO 9001:2015 Registered Firm
Certificate No: AU1222*

10038-04-TT General Certificate - Tilt Mount Solar System on Concealed Fix Roof with TT rails.odt

Gamcorp (Melbourne) Pty Ltd A.C.N 141 076 904 A.B.N 73 015 060 240
www.gamcorp.com.au Email: melbourne@gamcorp.com.au
 35 Butler Street, Richmond VIC 3121 Tel: 03 9543 2211

- Each PV panel to be installed using **2 rails** minimum in all circumstances
- Roof clamps to be fixed only to the **full rib** of roof sheeting on the top of the purlins (See **Figure 1**)
- 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 2021 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.

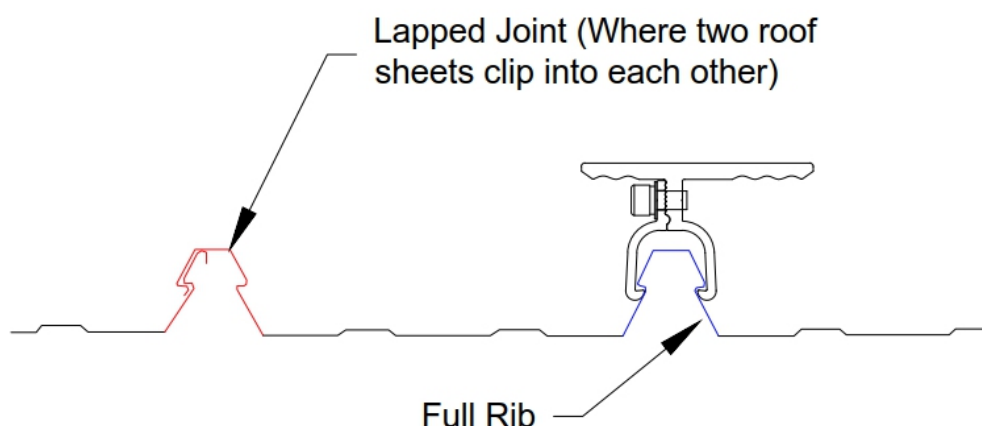


Figure 1 – Full Rib Location For Indicative

ISO 9001:2015 Registered Firm
 Certificate No: AU1222

10038-04-TT General Certificate - Tilt Mount Solar System on Concealed Fix Roof with TT rails.odt

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Construction is to be carried out strictly in accordance with the manufacturers 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 certificate is only valid till 20/08/2023. Gamcorp should be contacted for future validation. Contact Gamcorp for customised system or if the site conditions are not covered by this assessment.

Yours faithfully,
Gamcorp (Melbourne) Pty Ltd



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

Attachments:

- Titanergy Tilt Array Frame System Spacing Tables with TT rail on Lysaght Klip Lok 406, Lysaght Klip Lok 700 Classic, Lysaght Klip Lok 700 Hi-Strength, Stramit Speed Deck Ultra 700

*ISO 9001:2015 Registered Firm
Certificate No: AU1222*

10038-04-TT General Certificate - Tilt Mount Solar System on Concealed Fix Roof with TT rails.odt

Structural Design Documentation

Titanergy Tilt Array Frame System Spacing Table

According to AS/NZS 1170.2-2011 (R2016)

with TT Rail -LYSAGHT Klip-Lok 406

within Australia

Terrain Category 2 & 3

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



Job Number: 10038-04-TT
Date: Aug-21

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Relationships built on trust

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www.gamcorp.com.au
ISO 9001:2015 Registered Firm
Certificate No: AU1222

Job No: 10038-04-TT
Client: JIANGYIN TITANERGY CO.,LTD
Project: Titanergy Tilt Array Frame System Spacing Table
with TT Rail – LYSAGHT Klip-Lok 406
Address: within Australia

Australian 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 1170.2:2011 (R2016) – Structural design actions, Part 2: Wind actions

AS/NZS 1252:1996 – High strength steel bolts
AS/NZS 1664.1:1997 – Aluminium structures - Limit state design
AS 4100:2020 – Steel Structures
AS/NZS 4600:2018 – Cold-Formed Steel Structures

Wind Terrain Category: WTC 2 & 3

Designed: BL

Checked: AA

Date: Aug-21

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok 406 Roof Sheeting – mm

Type of Roof: LYSAGHT Klip-Lok 406
Type of Rail: Titanergy TT Rail
Type of Interface: Cliplok 406
Solar Panel Dimension: 1800x1100
Terrain category: 3

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal
A	–	720	985	1555	--	720	985	1555	--	620	845	1320	--	555	755	1175
B	--	--	655	1010	--	--	655	1010	--	--	565	870	--	--	--	775
C	--	--	--	650	--	--	--	650	--	--	--	560	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal
A	–	--	595	920	--	--	595	920	--	--	515	790	--	--	--	705
B	--	--	--	610	--	--	--	610	--	--	--	530	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal
A	–	--	--	775	--	--	--	775	--	--	--	665	--	--	--	595
B	--	--	--	515	--	--	--	515	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	–

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok 406 Roof Sheeting – mm

Type of Roof: LYSAGHT Klip-Lok 406
Type of Rail: Titanergy TT Rail
Type of Interface: Cliplok 406
Solar Panel Dimension: 1800x1100
Terrain category: 2

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	595	810	1265	--	--	660	1020	--	--	595	915	--	--	560	865
B	--	--	540	830	--	--	--	680	--	--	--	610	--	--	--	575
C	--	--	--	535	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	--	--	760	--	--	--	620	--	--	--	555	--	--	--	525
B	--	--	--	505	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	–	--	--	--	--	--	--	--	--	--	--	--	--	--	--	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	–	–	635	--	--	--	520	--	--	--	--	--	--	--	--
B	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	–

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok 406 Roof Sheeting – mm

Type of Roof: LYSAGHT Klip-Lok 406
Type of Rail: Titanergy TT Rail
Type of Interface: Cliplok 406
Solar Panel Dimension: 2000x1100
Terrain category: 3

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	605	825	1300	–	605	825	1300	–	520	705	1105	–	–	630	980
B	–	–	545	845	–	–	545	845	–	–	–	730	–	–	–	645
C	–	–	–	540	–	–	–	540	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	–	–	770	–	–	–	770	–	–	–	660	–	–	–	590
B	–	–	–	510	–	–	–	510	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	–	–	645	–	–	–	645	–	–	–	555	–	–	–	–
B	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok 406 Roof Sheeting – mm

Type of Roof: LYSAGHT Klip-Lok 406
Type of Rail: Titanergy TT Rail
Type of Interface: Cliplok 406
Solar Panel Dimension: 2000x1100
Terrain category: 2

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	–	675	1055	–	–	550	855	–	–	–	765	–	–	–	725
B	–	–	–	695	–	–	–	565	–	–	–	510	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	–	–	635	–	–	–	515	–	–	–	–	–	–	–	–
B	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	–	–	530	–	–	–	–	–	–	–	–	–	–	–	–
B	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok 406 Roof Sheeting – mm

Type of Roof: LYSAGHT Klip-Lok 406
Type of Rail: Titanergy TT Rail
Type of Interface: Cliplok 406
Solar Panel Dimension: 2200x1200
Terrain category: 3

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal
A	–	525	715	1130	–	525	715	1130	–	–	615	960	–	–	550	855
B	–	–	–	735	–	–	–	735	–	–	–	630	–	–	–	560
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal
A	–	–	–	670	–	–	–	670	–	–	–	575	–	–	–	515
B	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal
A	–	–	–	560	–	–	–	560	–	–	–	–	–	–	–	–
B	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok 406 Roof Sheeting – mm

Type of Roof: LYSAGHT Klip-Lok 406
Type of Rail: Titanergy TT Rail
Type of Interface: Cliplok 406
Solar Panel Dimension: 2200x1200
Terrain category: 2

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	–	585	915	–	–	–	745	–	–	–	665	–	–	–	630
B	–	–	–	605	–	–	–	–	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	–	–	550	–	–	–	–	–	–	–	–	–	–	–	–
B	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
B	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok 406 Roof Sheeting – mm

Type of Roof: LYSAGHT Klip-Lok 406
Type of Rail: Titanergy TT Rail
Type of Interface: Cliplok 406
Solar Panel Dimension: 2400x1200
Terrain category: 3

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	--	--	675	1065	--	--	675	1065	--	--	580	910	--	--	520	805
B	--	--	--	695	--	--	--	695	--	--	--	600	--	--	--	530
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	--	--	--	635	--	--	--	635	--	--	--	545	--	--	--	--
B	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	--	--	--	530	--	--	--	530	--	--	--	--	--	--	--	--
B	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok 406 Roof Sheeting – mm

Type of Roof: LYSAGHT Klip-Lok 406
Type of Rail: Titanergy TT Rail
Type of Interface: Cliplok 406
Solar Panel Dimension: 2400x1200
Terrain category: 2

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal
A	–	–	555	870	–	–	–	705	–	–	–	630	–	–	–	595
B	–	–	–	570	–	–	–	–	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal
A	–	–	–	520	–	–	–	–	–	–	–	–	–	–	–	–
B	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal
A	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
B	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

General Notes

Note 1 Following components are satisfied to use according to AS/NZS 1170.2-2011(R2016)

Components	Part number	Comments
Inter Clamp Kit	Inter Clamp Kit 25-50mm	as per drawing provided by client
End Clamp Kit	End Clamp Kit 25-50mm	as per drawing provided by client
Tilt Roof System	Tilt Roof System	as per drawing provided by client
Roof Clamp	Cliplok 406 & 700	as per drawing provided by client
TT Rail	TT Rail	

Note 2 Maximum uplift wind pressure is limited to 5.0 KPa for panels of 1800x1100mm and 2000x1100mm
Maximum uplift wind pressure is limited to 4.37KPa for panel of 2200x1200mm
Maximum uplift wind pressure is limited to 3.6KPa for panel of 2400x1200mm

Note 3 Deflection is limited to minimum of $L/120$ and 15mm

Note 4 Tilt angle is measured from roof surface.

Note 5 Terrain Category 2 (TC2) refers to 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) refers to 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.

Note 6 Refer to Figure 1 for definition of h and d.

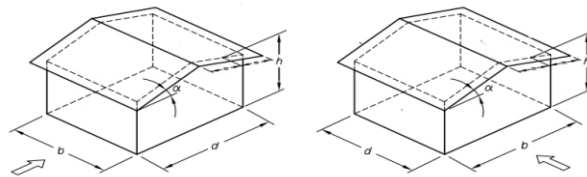
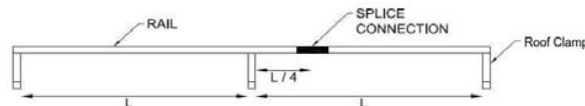


Figure 1 – h and d definition

Note 7 The optimised location of rail splice connection is at quarter length of the spacing of the interface. No Splice connection should be placed at the centre of spacing or over the interface.



Note 8 Refer Figure 2 for definition of roof zones.

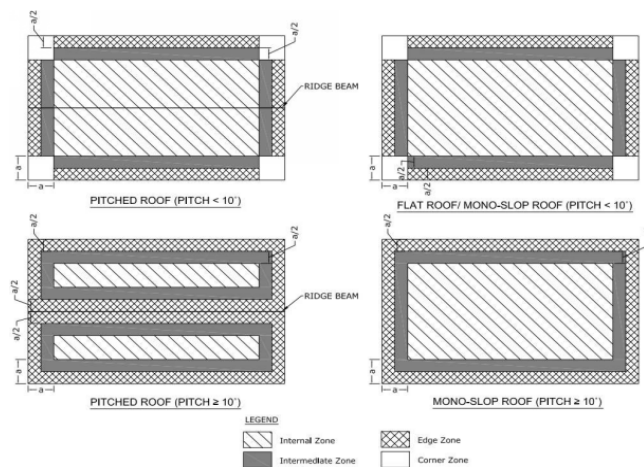


Figure 2 - Roof Zones Definition

In Figure 2, the value of dimension "a" is the minimum of 0.2b, 0.2d and h. (b & d are building dimensions and h is its height)

Structural Design Documentation

Titanergy Tilt Array Frame System Spacing Table

According to AS/NZS 1170.2-2011 (R2016)
with TT Rail -LYSAGHT Klip-Lok Classic 700
within Australia
Terrain Category 2 & 3

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



Job Number: 10038-04-TT
Date: Aug-21

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ISO 9001:2015 Registered Firm
Certificate No: AU1222

Job No: 10038-04-TT
Client: JIANGYIN TITANERGY CO.,LTD
Project: Titanergy Tilt Array Frame System Spacing Table
with TT Rail – LYSAGHT Klip-Lok Classic 700
Address: within Australia

Australian 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 1170.2:2011 (R2016) – Structural design actions, Part 2: Wind actions

AS/NZS 1252:1996 – High strength steel bolts
AS/NZS 1664.1:1997 – Aluminium structures - Limit state design
AS 4100:2020 – Steel Structures
AS/NZS 4600:2018 – Cold-Formed Steel Structures

Wind Terrain Category: WTC 2 & 3

Designed: BL

Checked: AA

Date: Aug-21

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok 406 Roof Sheeting – mm

Type of Roof: LYSAGHT Klip-Lok Classic 700
Type of Rail: Titanergy TT Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 1800x1100
Terrain category: 3

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal
A	660	1015	1390	1850	660	1015	1390	1850	570	875	1190	1765	510	780	1060	1655
B	--	680	920	1425	--	680	920	1425	--	590	795	1225	--	525	710	1090
C	--	--	595	915	--	--	595	915	--	--	515	785	--	--	--	700
D	--	--	--	585	--	--	--	585	--	--	--	505	--	--	--	--

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal
A	--	595	805	1245	--	595	805	1245	--	515	695	1070	--	--	620	955
B	--	--	540	825	--	--	540	825	--	--	--	715	--	--	--	635
C	--	--	--	535	--	--	--	535	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal
A	--	--	615	945	--	--	615	945	--	--	530	815	--	--	--	725
B	--	--	--	630	--	--	--	630	--	--	--	545	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok Classic 700 roof sheeting – mm

Type of Roof: LYSAGHT Klip-Lok Classic 700
Type of Rail: Titanergy TT Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 1800x1100
Terrain category: 2

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	550	840	1140	1735	--	685	930	1440	--	620	835	1290	--	585	790	1220
B	--	560	760	1170	--	--	625	955	--	--	560	860	--	--	530	810
C	--	--	--	750	--	--	--	615	--	--	--	555	--	--	--	525
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	--	--	665	1020	--	--	545	835	--	--	--	750	--	--	--	710
B	--	--	--	680	--	--	--	560	--	--	--	505	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	--	--	510	780	--	--	--	640	--	--	--	575	--	--	--	545
B	--	--	--	520	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok Classic 700 roof sheeting – mm

Type of Roof: LYSAGHT Klip-Lok Classic 700
Type of Rail: Titanergy TT Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 2000x1100
Terrain category: 3

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	555	850	1160	1760	555	850	1160	1760	--	730	995	1560	--	655	890	1385
B	--	570	770	1195	--	570	770	1195	--	--	665	1025	--	--	590	910
C	--	--	--	765	--	--	--	765	--	--	--	655	--	--	--	585
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	--	--	675	1040	--	--	675	1040	--	--	580	895	--	--	520	795
B	--	--	--	690	--	--	--	690	--	--	--	595	--	--	--	530
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	--	--	515	790	--	--	515	790	--	--	--	680	--	--	--	610
B	--	--	--	530	--	--	--	530	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok Classic 700 roof sheeting – mm

Type of Roof: LYSAGHT Klip-Lok Classic 700
Type of Rail: Titanergy TT Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 2000x1100
Terrain category: 2

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	700	955	1490	–	575	775	1205	–	515	700	1080	–	–	660	1020
B	–	–	635	980	–	–	520	800	–	–	–	720	–	–	–	675
C	–	–	–	630	–	–	–	515	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	–	555	855	–	–	–	700	–	–	–	630	–	–	–	595
B	–	–	–	570	–	–	–	–	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	–	–	650	–	–	–	535	–	–	–	–	–	–	–	–
B	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok Classic 700 roof sheeting – mm

Type of Roof: LYSAGHT Klip-Lok Classic 700
Type of Rail: Titanergy TT Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 2200x1200
Terrain category: 3

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	740	1010	1590	–	740	1010	1590	–	635	865	1355	–	570	770	1200
B	–	–	670	1035	–	–	670	1035	–	–	575	890	–	–	515	790
C	–	–	–	665	–	–	–	665	–	–	–	570	–	–	–	510
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	–	585	905	–	–	585	905	–	–	505	775	–	–	–	695
B	–	–	–	600	–	–	–	600	–	–	–	520	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	–	–	690	–	–	–	690	–	–	–	590	–	–	–	530
B	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok Classic 700 roof sheeting – mm

Type of Roof: LYSAGHT Klip-Lok Classic 700
Type of Rail: Titanergy TT Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 2200x1200
Terrain category: 2

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	610	830	1290	–	–	675	1045	–	–	605	940	–	–	575	885
B	–	–	550	850	–	–	–	695	–	–	–	625	–	–	–	590
C	–	–	–	545	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	–	–	745	–	–	–	605	–	–	–	545	–	–	–	515
B	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	–	–	565	–	–	–	–	–	–	–	–	–	–	–	–
B	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok Classic 700 roof sheeting – mm

Type of Roof: LYSAGHT Klip-Lok Classic 700
Type of Rail: Titanergy TT Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 2400x1200
Terrain category: 3

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	700	955	1505	–	700	955	1505	–	600	820	1280	–	535	730	1135
B	–	–	630	980	–	–	630	980	–	–	545	840	–	–	–	750
C	–	–	–	630	–	–	–	630	–	–	–	540	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	–	555	855	–	–	555	855	–	–	–	735	–	–	–	655
B	–	–	–	570	–	–	–	570	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	–	–	650	–	–	–	650	–	–	–	560	–	–	–	–
B	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok Classic 700 roof sheeting – mm

Type of Roof: LYSAGHT Klip-Lok Classic 700
Type of Rail: Titanergy TT Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 2400x1200
Terrain category: 2

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	575	785	1225	–	–	640	990	–	–	575	885	–	–	545	840
B	–	–	520	805	–	–	–	655	–	–	–	590	–	–	–	555
C	–	–	–	515	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	–	–	705	–	–	–	575	–	–	–	515	–	–	–	–
B	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	–	–	535	–	–	–	–	–	–	–	–	–	–	–	–
B	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

General Notes

Note 1 Following components are satisfied to use according to AS/NZS 1170.2-2011(R2016)

Components	Part number	Comments
Inter Clamp Kit	Inter Clamp Kit 25-50mm	as per drawing provided by client
End Clamp Kit	End Clamp Kit 25-50mm	as per drawing provided by client
Tilt Roof System	Tilt Roof System	as per drawing provided by client
Roof Clamp	Cliplok 406 & 700	as per drawing provided by client
TT Rail	TT Rail	as per drawing provided by client

Note 2 Maximum uplift wind pressure is limited to 5.0 KPa for panels of 1800x1100mm and 2000x1100mm
Maximum uplift wind pressure is limited to 4.37KPa for panel of 2200x1200mm
Maximum uplift wind pressure is limited to 3.6KPa for panel of 2400x1200mm

Note 3 Deflection is limited to minimum of $L/120$ and 15mm

Note 4 Tilt angle is measured from roof surface.

Note 5 Terrain Category 2 (TC2) refers to 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) refers to 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.

Note 6 Refer to Figure 1 for definition of h and d.

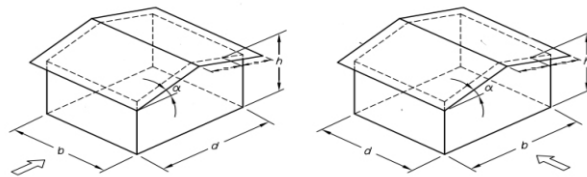
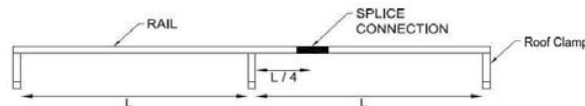


Figure 1 – h and d definition

Note 7 The optimised location of rail splice connection is at quarter length of the spacing of the interface. No Splice connection should be placed at the centre of spacing or over the interface.



Note 8 Refer Figure 2 for definition of roof zones.

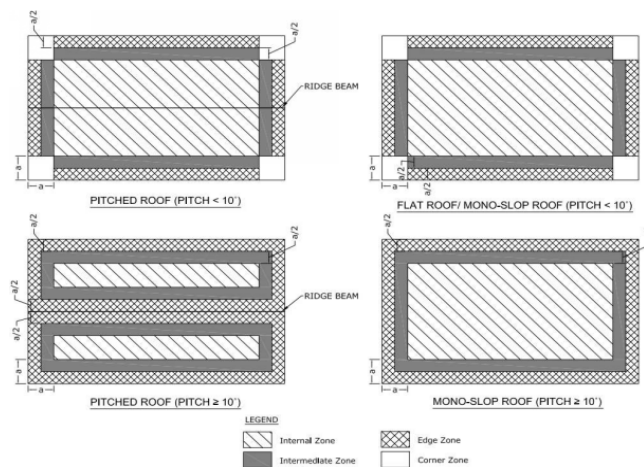


Figure 2 - Roof Zones Definition

In Figure 2, the value of dimension "a" is the minimum of 0.2b, 0.2d and h. (b & d are building dimensions and h is its height)

Structural Design Documentation

Titanergy Tilt Array Frame System Spacing Table

According to AS/NZS 1170.2-2011 (R2016)
with TT Rail - LYSAGHT Klip-Lok 700 Hi-Strength
within Australia
Terrain Category 2 & 3

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



Job Number: 10038-04-TT
Date: Aug-21

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Certificate No: AU1222

Job No: 10038-04-TT
Client: JIANGYIN TITANERGY CO.,LTD
Project: Titanergy Tilt Array Frame System Spacing Table
with TT Rail – LYSAGHT Klip-Lok 700 Hi-Strength
Address: within Australia

Australian 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 1170.2:2011 (R2016) – Structural design actions, Part 2: Wind actions

AS/NZS 1252:1996 – High strength steel bolts
AS/NZS 1664.1:1997 – Aluminium structures - Limit state design
AS 4100:2020 – Steel Structures
AS/NZS 4600:2018 – Cold-Formed Steel Structures

Wind Terrain Category: WTC 2 & 3

Designed: BL

Checked: AA

Date: Aug-21

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok Classic 700 roof sheeting – mm

Type of Roof: LYSAGHT Klip-Lok 700 Hi-Strength
Type of Rail: Titanergy TT Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 1800x1100
Terrain category: 3

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal
A	630	970	1325	1850	630	970	1325	1850	545	835	1140	1765	--	745	1015	1580
B	--	650	880	1360	--	650	880	1360	--	560	760	1170	--	500	675	1040
C	--	--	570	870	--	--	570	870	--	--	--	750	--	--	--	670
D	--	--	--	560	--	--	--	560	--	--	--	--	--	--	--	--

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal
A	--	595	805	1240	--	595	805	1240	--	510	690	1065	--	--	620	950
B	--	--	540	825	--	--	540	825	--	--	--	710	--	--	--	635
C	--	--	--	535	--	--	--	535	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal
A	--	--	615	945	--	--	615	945	--	--	530	815	--	--	--	725
B	--	--	--	630	--	--	--	630	--	--	--	545	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok Classic 700 roof sheeting – mm

Type of Roof: LYSAGHT Klip-Lok 700 Hi-Strength
Type of Rail: Titanergy TT Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 1800x1100
Terrain category: 2

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	525	800	1090	1700	--	655	890	1375	--	590	800	1230	--	560	755	1165
B	--	535	725	1120	--	--	595	910	--	--	535	820	--	--	505	775
C	--	--	--	720	--	--	--	590	--	--	--	530	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	--	--	665	1020	--	--	545	830	--	--	--	750	--	--	--	710
B	--	--	--	680	--	--	--	560	--	--	--	505	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	--	--	510	780	--	--	--	640	--	--	--	575	--	--	--	545
B	--	--	--	520	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok Classic 700 roof sheeting – mm

Type of Roof: LYSAGHT Klip-Lok 700 Hi-Strength
Type of Rail: Titanergy TT Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 2000x1100
Terrain category: 3

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	530	810	1110	1745	530	810	1110	1745	--	700	950	1490	--	625	850	1320
B	--	540	735	1140	--	540	735	1140	--	--	635	980	--	--	565	870
C	--	--	--	730	--	--	--	730	--	--	--	630	--	--	--	560
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	--	--	670	1040	--	--	670	1040	--	--	580	890	--	--	515	795
B	--	--	--	690	--	--	--	690	--	--	--	595	--	--	--	530
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	--	--	515	790	--	--	515	790	--	--	--	680	--	--	--	610
B	--	--	--	530	--	--	--	530	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok Classic 700 roof sheeting – mm

Type of Roof: LYSAGHT Klip-Lok 700 Hi-Strength
Type of Rail: Titanergy TT Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 2000x1100
Terrain category: 2

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	670	910	1420	--	550	740	1150	--	--	670	1030	--	--	630	975
B	--	--	605	935	--	--	--	760	--	--	--	690	--	--	--	645
C	--	--	--	600	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	--	555	850	--	--	--	695	--	--	--	625	--	--	--	590
B	--	--	--	570	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	--	–	650	--	--	–	–	--	--	--	–	--	--	--	–
B	--	--	--	–	--	--	--	–	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	–

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok Classic 700 roof sheeting – mm

Type of Roof: LYSAGHT Klip-Lok 700 Hi-Strength
Type of Rail: Titanergy TT Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 2200x1200
Terrain category: 3

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	705	965	1515	–	705	965	1515	–	605	825	1290	–	540	735	1145
B	–	–	640	990	–	–	640	990	–	–	550	850	–	–	–	755
C	–	–	–	635	–	–	–	635	–	–	–	545	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	–	585	900	–	–	585	900	–	–	505	775	–	–	–	690
B	–	–	–	600	–	–	–	600	–	–	–	515	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	–	–	690	–	–	–	690	–	–	–	590	–	–	–	530
B	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok Classic 700 roof sheeting – mm

Type of Roof: LYSAGHT Klip-Lok 700 Hi-Strength
Type of Rail: Titanergy TT Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 2200x1200
Terrain category: 2

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	580	790	1235	–	–	645	1000	–	–	580	895	–	–	550	845
B	–	–	525	810	–	–	–	660	–	–	–	595	–	–	–	560
C	–	–	–	520	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	–	–	740	–	–	–	605	–	–	–	545	–	–	–	515
B	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	–	–	565	–	–	–	–	–	–	–	–	–	–	–	–
B	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok Classic 700 roof sheeting – mm

Type of Roof: LYSAGHT Klip-Lok 700 Hi-Strength
Type of Rail: Titanergy TT Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 2400x1200
Terrain category: 3

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal
A	–	665	910	1435	–	665	910	1435	–	575	780	1225	–	515	695	1085
B	–	–	605	935	–	–	605	935	–	–	520	805	–	–	–	715
C	–	–	–	600	–	–	–	600	–	–	–	515	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal
A	–	–	550	855	–	–	550	855	–	–	–	730	–	–	–	655
B	–	–	–	565	–	–	–	565	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal
A	–	–	–	650	–	–	–	650	–	–	–	560	–	–	–	–
B	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Tilt Array Frame System Spacing Table for LYSAGHT Klip-Lok Classic 700 roof sheeting – mm

Type of Roof: LYSAGHT Klip-Lok 700 Hi-Strength
Type of Rail: Titanergy TT Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 2400x1200
Terrain category: 2

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	550	750	1165	–	–	610	945	–	–	550	845	–	–	520	800
B	–	–	–	770	–	–	–	625	–	–	–	565	–	–	–	530
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	–	–	700	–	–	–	570	–	–	–	515	–	–	–	–
B	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	–	–	535	–	–	–	–	–	–	–	–	–	–	–	–
B	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

General Notes

Note 1 Following components are satisfied to use according to AS/NZS 1170.2-2011(R2016)

Components	Part number	Comments
Inter Clamp Kit	Inter Clamp Kit 25-50mm	as per drawing provided by client
End Clamp Kit	End Clamp Kit 25-50mm	as per drawing provided by client
Tilt Roof System	Tilt Roof System	as per drawing provided by client
Roof Clamp	Cliplok 406 & 700	as per drawing provided by client
TT Rail	TT Rail	as per drawing provided by client

Note 2 Maximum uplift wind pressure is limited to 5.0 KPa for panels of 1800x1100mm and 2000x1100mm
Maximum uplift wind pressure is limited to 4.37KPa for panel of 2200x1200mm
Maximum uplift wind pressure is limited to 3.6KPa for panel of 2400x1200mm

Note 3 Deflection is limited to minimum of L/120 and 15mm

Note 4 Tilt angle is measured from roof surface.

Note 5 Terrain Category 2 (TC2) refers to 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) refers to 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.

Note 6 Refer to Figure 1 for definition of h and d.

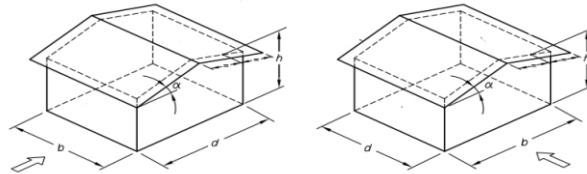
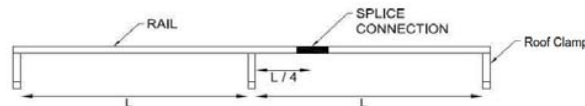


Figure 1 – h and d definition

Note 7 The optimised location of rail splice connection is at quarter length of the spacing of the interface. No Splice connection should be placed at the centre of spacing or over the interface.



Note 8 Refer Figure 2 for definition of roof zones.

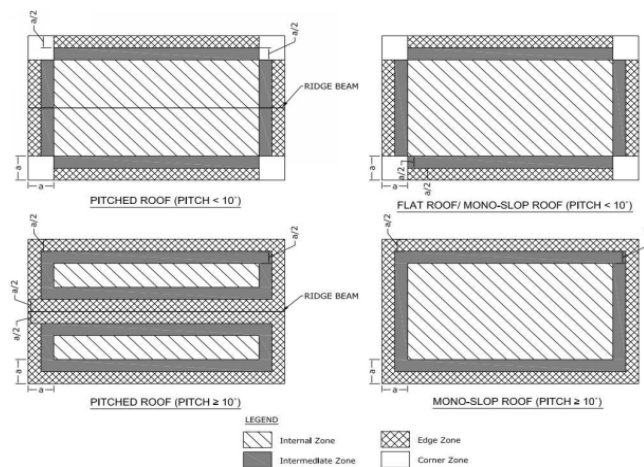


Figure 2 - Roof Zones Definition

In Figure 2, the value of dimension "a" is the minimum of 0.2b, 0.2d and h. (b & d are building dimensions and h is its height)

Structural Design Documentation

Titanergy Tilt Array Frame System Spacing Table

According to AS/NZS 1170.2-2011 (R2016)
with TT Rail – STRAMIT Speed Deck Ultra 700
within Australia
Terrain Category 2 & 3

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

Job Number: 10038-04-TT
Date: Aug-21



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Certificate No: AU1222

Job No: 10038-04-TT
Client: JIANGYIN TITANERGY CO.,LTD
Project: Titanergy Tilt Array Frame System Spacing Table
with TT Rail – STRAMIT Speed Deck Ultra 700
Address: within Australia

Australian 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 1170.2:2011 (R2016) – Structural design actions, Part 2: Wind actions

AS/NZS 1252:1996 – High strength steel bolts
AS/NZS 1664.1:1997 – Aluminium structures - Limit state design
AS 4100:2020 – Steel Structures
AS/NZS 4600:2018 – Cold-Formed Steel Structures

Wind Terrain Category: WTC 2 & 3

Designed: BL

Checked: AA

Date: Aug-21

Tilt Array Frame System Spacing Table for STRAMIT Speed Deck Ultra 700 Roof Sheeting – mm

Type of Roof: STRAMIT Speed Deck Ultra 700
Type of Rail: Titanergy TT Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 1800x1100
Terrain category: 3

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	690	1060	1445	1850	690	1060	1445	1850	595	910	1240	1765	535	815	1105	1690
B	--	705	960	1485	--	705	960	1485	--	610	830	1275	--	545	735	1135
C	--	--	620	950	--	--	620	950	--	--	535	820	--	--	--	730
D	--	--	--	610	--	--	--	610	--	--	--	530	--	--	--	--

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	--	595	805	1245	--	595	805	1245	--	515	695	1070	--	--	620	955
B	--	--	540	825	--	--	540	825	--	--	--	715	--	--	--	635
C	--	--	--	535	--	--	--	535	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	--	--	615	945	--	--	615	945	--	--	530	815	--	--	--	725
B	--	--	--	630	--	--	--	630	--	--	--	545	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt Array Frame System Spacing Table for STRAMIT Speed Deck Ultra 700 Roof Sheeting – mm

Type of Roof: STRAMIT Speed Deck Ultra 700
Type of Rail: Titanergy TT Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 1800x1100
Terrain category: 2

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	570	870	1185	1735	--	715	970	1500	--	645	870	1345	--	610	825	1270
B	--	585	790	1220	--	--	650	995	--	--	585	895	--	--	550	845
C	--	--	515	785	--	--	--	640	--	--	--	580	--	--	--	545
D	--	--	--	505	--	--	--	--	--	--	--	--	--	--	--	--

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	--	--	665	1020	--	--	545	835	--	--	--	750	--	--	--	710
B	--	--	--	680	--	--	--	560	--	--	--	505	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	--	--	510	780	--	--	--	640	--	--	--	575	--	--	--	545
B	--	--	--	520	--	--	--	--	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt Array Frame System Spacing Table for STRAMIT Speed Deck Ultra 700 Roof Sheeting – mm

Type of Roof: STRAMIT Speed Deck Ultra 700
Type of Rail: Titanergy TT Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 2000x1100
Terrain category: 3

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal
A	575	885	1210	1760	575	885	1210	1760	--	765	1040	1625	--	680	925	1440
B	--	590	800	1240	--	590	800	1240	--	510	690	1070	--	--	615	950
C	--	--	520	795	--	--	520	795	--	--	--	685	--	--	--	610
D	--	--	--	510	--	--	--	510	--	--	--	--	--	--	--	--

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal
A	--	--	675	1040	--	--	675	1040	--	--	580	895	--	--	520	795
B	--	--	--	690	--	--	--	690	--	--	--	595	--	--	--	530
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal	Corner	Edge	Interme diate	Internal
A	--	--	515	790	--	--	515	790	--	--	--	680	--	--	--	610
B	--	--	--	530	--	--	--	530	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt Array Frame System Spacing Table for STRAMIT Speed Deck Ultra 700 Roof Sheeting – mm

Type of Roof: STRAMIT Speed Deck Ultra 700
Type of Rail: Titanergy TT Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 2000x1100
Terrain category: 2

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	730	990	1550	–	595	810	1255	–	540	730	1125	–	510	690	1060
B	–	–	660	1020	–	–	540	830	–	–	–	750	–	–	–	705
C	–	–	–	655	–	–	–	535	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	–	555	855	–	–	–	700	–	–	–	630	–	–	–	595
B	–	–	–	570	–	–	–	–	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	–	–	650	–	–	–	535	–	–	–	–	–	–	–	–
B	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Tilt Array Frame System Spacing Table for STRAMIT Speed Deck Ultra 700 Roof Sheeting – mm

Type of Roof: STRAMIT Speed Deck Ultra 700
Type of Rail: Titanergy TT Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 2200x1100
Terrain category: 3

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	770	1050	1655	500	770	1050	1655	–	660	900	1410	–	590	805	1250
B	–	515	695	1080	–	515	695	1080	–	–	600	925	–	–	535	825
C	–	–	–	690	–	–	–	690	–	–	–	595	–	–	–	530
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	–	585	905	–	–	585	905	–	–	505	775	–	–	–	695
B	–	–	–	600	–	–	–	600	–	–	–	520	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	–	–	690	–	–	–	690	–	–	–	590	–	–	–	530
B	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Tilt Array Frame System Spacing Table for STRAMIT Speed Deck Ultra 700 Roof Sheeting – mm

Type of Roof: STRAMIT Speed Deck Ultra 700
Type of Rail: Titanergy TT Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 2200x1100
Terrain category: 2

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	635	860	1345	–	520	705	1090	–	–	635	975	–	–	600	925
B	–	–	575	885	–	–	–	720	–	–	–	650	–	–	–	615
C	–	–	–	570	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
	–	–	–	745	–	–	–	605	–	–	–	545	–	–	–	515
	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	–	–	565	–	–	–	–	–	–	–	–	–	–	–	–
B	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Tilt Array Frame System Spacing Table for STRAMIT Speed Deck Ultra 700 Roof Sheeting – mm

Type of Roof: STRAMIT Speed Deck Ultra 700
Type of Rail: Titanergy TT Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 2400x1200
Terrain category: 3

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	730	995	1565	--	730	995	1565	--	625	855	1335	--	560	760	1185
B	--	--	660	1020	--	--	660	1020	--	--	570	875	--	--	505	780
C	--	--	--	655	--	--	--	655	--	--	--	560	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	--	5855	855	--	--	555	855	--	--	–	735	--	--	--	655
B	--	--	--	570	--	--	--	570	--	--	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	--	--	650	--	--	--	650	--	--	–	560	--	--	--	–
B	--	--	--	--	--	--	--	--	--	--	--	–	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
D	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Tilt Array Frame System Spacing Table for STRAMIT Speed Deck Ultra 700 Roof Sheeting – mm

Type of Roof: STRAMIT Speed Deck Ultra 700
Type of Rail: Titanergy TT Rail
Type of Interface: Cliplok 700
Solar Panel Dimension: 2400x1200
Terrain category: 2

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	600	815	1275	–	–	665	1030	–	–	600	925	–	–	565	875
B	–	–	545	840	–	–	–	685	–	–	–	615	–	–	–	580
C	–	–	–	540	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
	–	–	–	705	–	–	–	575	–	–	–	515	–	–	–	–
	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Wind Region	Building Height – H (m)															
	H $\leq$ 5				5<H $\leq$ 10				10<H $\leq$ 15				15<H $\leq$ 20			
	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal	Corner	Edge	Intermedate	Internal
A	–	–	–	535	–	–	–	–	–	–	–	–	–	–	–	–
B	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

General Notes

Note 1 Following components are satisfied to use according to AS/NZS 1170.2-2011(R2016)

Components	Part number	Comments
Inter Clamp Kit	Inter Clamp Kit 25-50mm	as per drawing provided by client
End Clamp Kit	End Clamp Kit 25-50mm	as per drawing provided by client
Tilt Roof System	Tilt Roof System	as per drawing provided by client
Roof Clamp	Cliplok 406 & 700	as per drawing provided by client
TT Rail	TT Rail	as per drawing provided by client

Note 2 Maximum uplift wind pressure is limited to 5.0 KPa for panels of 1800x1100mm and 2000x1100mm
Maximum uplift wind pressure is limited to 4.37KPa for panel of 2200x1200mm
Maximum uplift wind pressure is limited to 3.6KPa for panel of 2400x1200mm

Note 3 Deflection is limited to minimum of $L/120$ and 15mm

Note 4 Tilt angle is measured from roof surface.

Note 5 Terrain Category 2 (TC2) refers to 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) refers to 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.

Note 6 Refer to Figure 1 for definition of h and d.

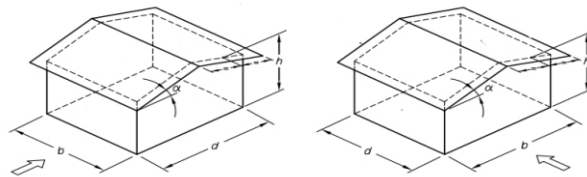
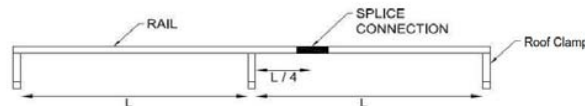


Figure 1 – h and d definition

Note 7 The optimised location of rail splice connection is at quarter length of the spacing of the interface. No Splice connection should be placed at the centre of spacing or over the interface.



Note 8 Refer Figure 2 for definition of roof zones.

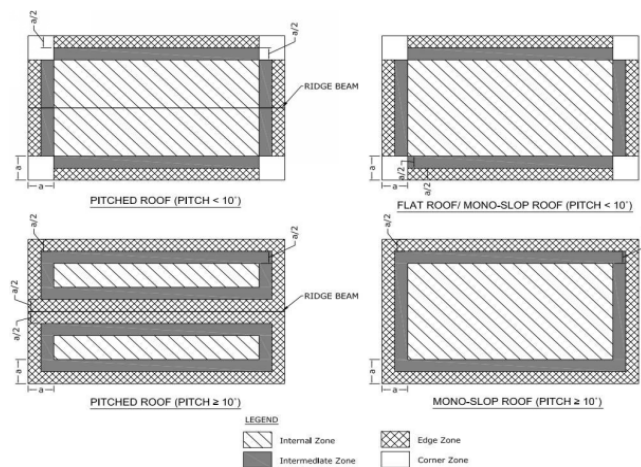


Figure 2 - Roof Zones Definition

In Figure 2, the value of dimension "a" is the minimum of 0.2b, 0.2d and h. (b & d are building dimensions and h is its height)