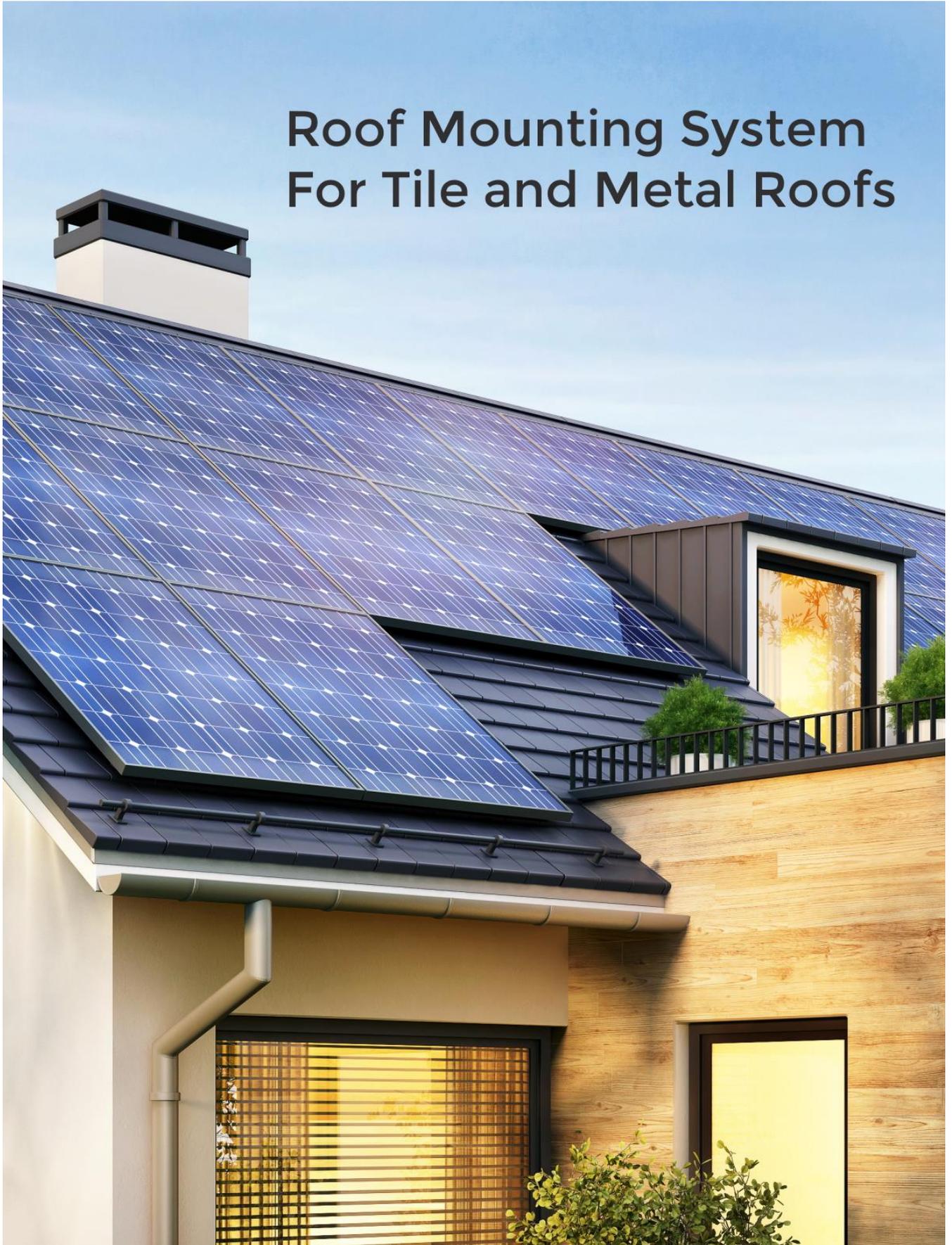
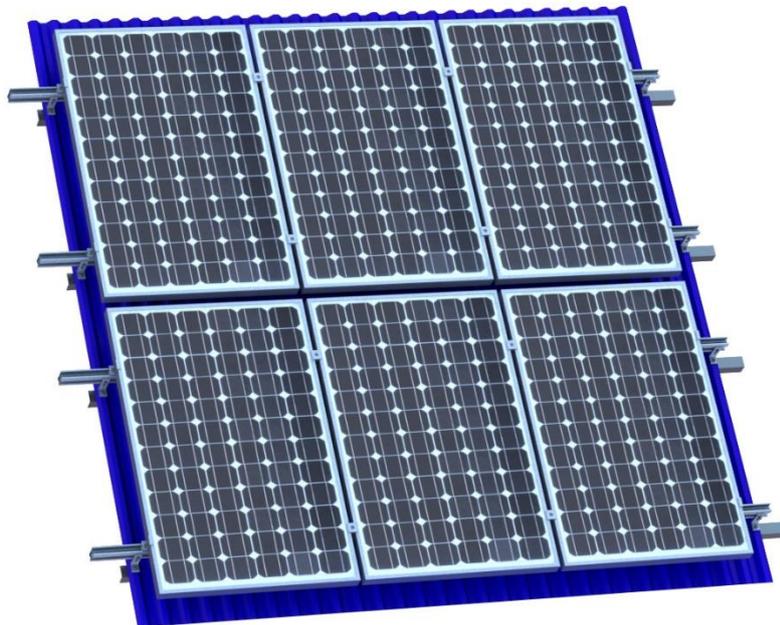
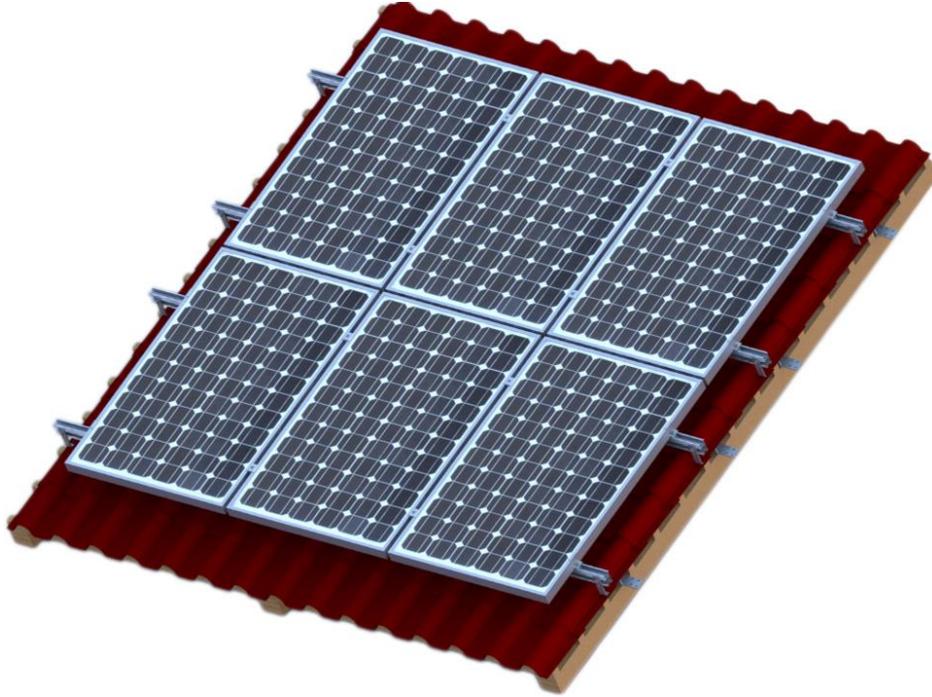


Roof Mounting System For Tile and Metal Roofs



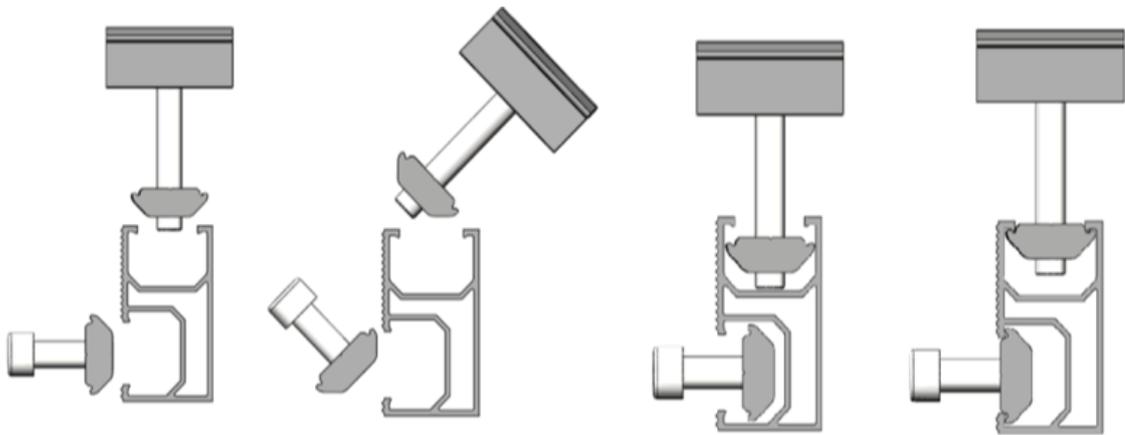
MPS Roof Mounting System Installation Manual for Tile and Metal Roofs



Roof Mounting System Installation Manual

1. General Information

The Max Power Solar (MPS) roof mounting system features innovative design to allow easy installation saving labor costs and time. Our aluminum fixing nuts can be put into rails in any position directly and screwed tightly to the rails. All the mountings comply with AS/NZS1170.2 with 15 years warranty and 25 years service life.



2. Technical Specifications

2.1. Features

- 6005-T5 Aluminum extrusion
- MPS mounting system can be easily installed saving labor cost and time.
- Suitable for different conditions and most solar panels in the market.
- Complies with Australian/New Zealand Standard on Wind Actions AS/NZS1170.2.2011.
- Anodized finish – all Max Power Solar systems will feature black finished colour.

2.2. Installation Conditions

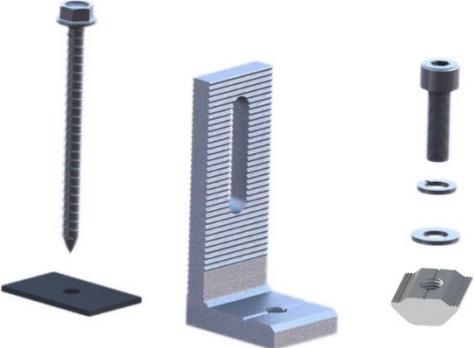
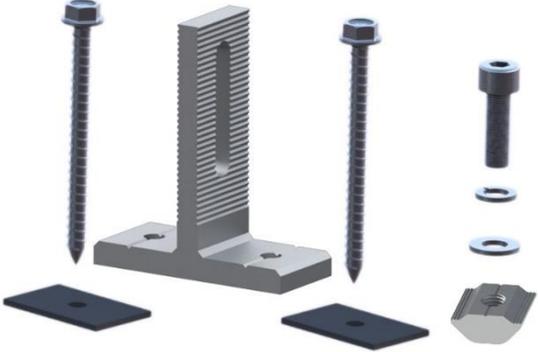
- Install site: Low profile roof or flat roof
- Tilt Angle: Flush with the roof (10~60 deg)
- Building Height: Up to 20m
- Max Wind Speed: <60m/s
- Snow Load: <1.4KN/m²
- Standard: AS/NZS 1170 and other international standards
- Material: High Class Aluminum alloy Al6005-T5 & stainless steel 304
- Color: Natural or Black
- Anticorrosive: Anodized aluminum and stainless steel
- Warranty: 15 years warranty and 25 years-service life

3. Installation Tools

<p>6 mm Allen key or hexagonal driver bit. If using a 6mm driver bit, make sure the cordless power tool used for the driving has a hand-tight clutch setting a fine (soft) impact drive to prevent damage to the fragile glass panels and threads on the Structure</p>	
<p>Cordless drill; Drill or impact driver for driving roof material fixings</p>	
<p>Angle grinder; For terracotta tile roof installation, an angle grinder fitted with a continuous edge diamond tipped tile cutting blade; gloves, Use hearing protection, a face protection mask, and a suitably rated breathing protection mask for all people in proximity of grinding work and dust.</p>	
<p>Gloves for hand protection from hazardous sharp edges.</p>	
<p>Marking crayon or color pen for marking out the installation position.</p>	
<p>Spirit level.</p>	
<p>Tape measure.</p>	
<p>If necessary, timber to shim the legs.</p>	

4. Component List

Item	Component	Description	3D drawing
1	Aluminum Rail	<ul style="list-style-type: none"> ● MPS-R-4200 MPS Standard 4200mm rail ● MPS-R-4400 MPS Standard 4400mm rail 	
2	MPS Rail Splice Kit	For connecting 2 pieces of base rail, with 2 x M8 x 20mm hexagon screws	
3	MPS Mid Clamp Kits	<ul style="list-style-type: none"> ● Material AL6005-T5 & SUS304 bolt ● Standard pre-assembly for the usual panels with thickness of 30, 35, 40, 45, 50mm ● Including 1pc of A2-70 M8 Hexagon screw, 1pc of aluminum fixing nut 	
4	MPS End Clamp Kits	<ul style="list-style-type: none"> ● Material AL6005-T5 & SUS304 bolt ● Standard pre-assembly for the usual panels with thickness of 30, 35, 40, 45, 50mm ● Including 1pc of A2-70 M8 Hexagon screw, 1pc of aluminum fixing nut 	

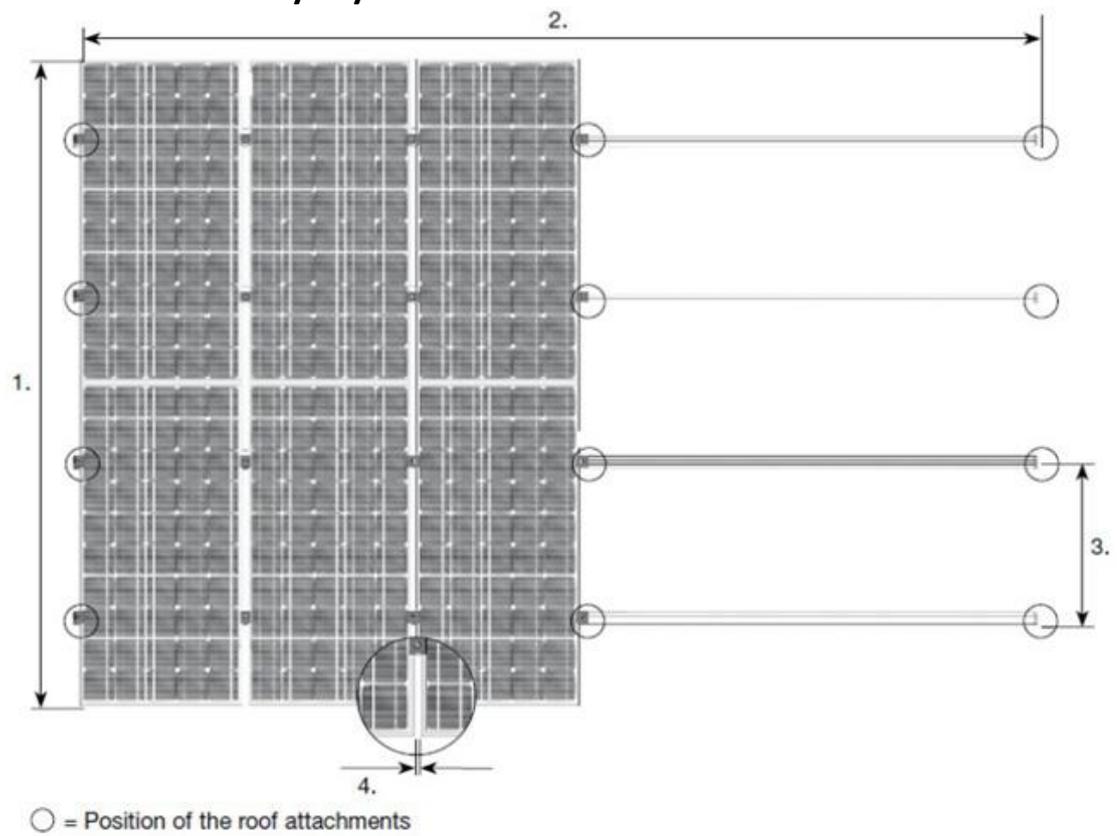
<p>5</p>	<p>MPS Stainless Steel Hook 1#</p>	<ul style="list-style-type: none"> ● 3 x $\Phi 6.3\text{mm}$ x 80mm wood screws ● 1 x aluminum fixing nuts ● 1 x A2-70 M8 Hexagon screw ● 1 x M8 antiskid gasket ● 1 x of M8 spring gasket ● Note: MPS can provide various hooks as per customer requirements. 	
<p>6</p>	<p>MPS L Feet(Fix to the purlin on tin roof)</p>	<ul style="list-style-type: none"> ● 1 x $\Phi 6.3\text{mm}$ x 80mm wood screw ● 1 x aluminum fixing nut ● 1 x A2-70 M8 Hexagon screw ● 1 x M8 antiskid gasket ● 1 x M8 spring gasket ● 1 x EPDM waterproof gasket 	
<p>7</p>	<p>MPS T Feet (Fix to the purlin on tin roof)</p>	<ul style="list-style-type: none"> ● 2 x $\Phi 6.3\text{mm}$ x 80mm wood screw ● 1 x aluminum fixing nut ● 1 x A2-70 M8 Hexagon screw ● 1 x M8 antiskid gasket ● 1 x M8 spring gasket ● 2 x EPDM waterproof gasket 	

5. MPS Roof Hooks

Item	Component	Description	3D drawing
1	MPS Stainless Steel Hook 1#	<ul style="list-style-type: none"> ● Fix to the rafter below Roman tile roof ● 3 x Φ 6.3 x 80mm wood screws ● 1 x M8 Hexagon screw ● 1 x spring washer ● 1 x flat washer ● 1 x aluminum fixing nut. 	
2	MPS Stainless Steel Hook 2#	<ul style="list-style-type: none"> ● Fix to the rafter below tile roof ● 3 x Φ 6.3 x 80mm wood screws ● 1 x M8 Hexagon screw ● 1 x spring washer ● 1 x flat washer ● 1 x aluminum fixing nut. 	
3	MPS Stainless Steel Hook 3#	<ul style="list-style-type: none"> ● Fix to the rafter below tile roof ● 3 x Φ 6.3 x 80mm wood screws ● 1 x M8 Hexagon screw ● 1 x spring washer ● 1 x flat washer ● 1 x aluminum fixing nut. 	
4	MPS Stainless Steel Hook 4#	<ul style="list-style-type: none"> ● Fix to the rafter below flat tile roof ● 2 x Φ 6.3 x 80mm wood screws ● 1 x M8 Hexagon screw ● 1 x spring washer ● 1 x flat washer ● 1 x aluminum fixing nut. 	

<p>5</p>	<p>MPS Stainless Steel Hook 5#</p>	<ul style="list-style-type: none"> ● Fix to the rafter below slate tile roof ● 2 x $\Phi 6.3$ x 80mm wood screws ● 1pc of M8 Hexagon screw ● 1pc of spring washer ● 1pc of flat washer ● 1pcs of aluminum fixing nut. 	
<p>6</p>	<p>MPS Stainless Steel Hook 6#</p>	<ul style="list-style-type: none"> ● Fix to the rafter below tile roof ● 3 x $\Phi 6.3$ x 80mm wood screws ● 1 x M8 Hexagon screw ● 1 x spring washer ● 1 x flat washer ● 1 x aluminum fixing nut. 	
<p>7</p>	<p>MPS Stainless Steel Hook 7#</p>	<ul style="list-style-type: none"> ● Fix to the rafter below Roman tile roof ● 3 x $\Phi 6.3$ x 80mm wood screws ● 1 x M8 Hexagon screw ● 1 x spring washer ● 1 x flat washer ● 1 x aluminum fixing nut. 	

6. How to Plan the Array Layout

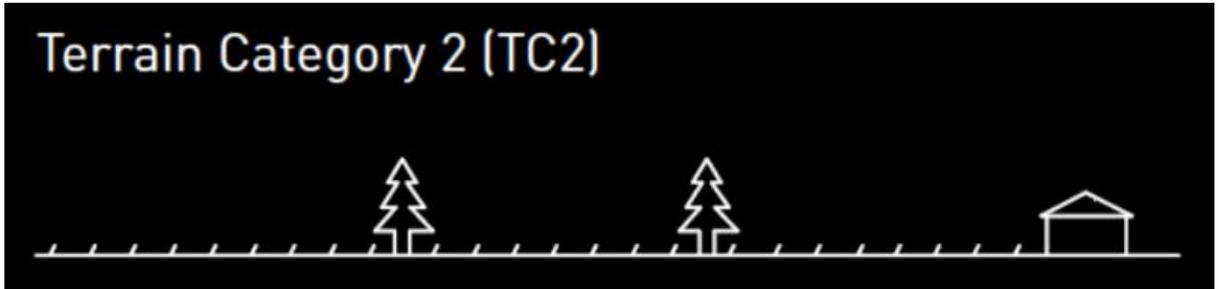


1. Array height = number of modules in the vertical direction x module height
2. Array width = number of modules in horizontal direction x module width + 18 mm +32 mm
3. Vertical spacing of the roof attachment = approx. ½ of module height
4. Distance between the modules: 18 mm

7. DETERMINING WIND TERRAIN CATEGORY

Terrain Category 2

Open terrain, including grassland with well scattered obstructions having heights generally from 1.5 meters to 5 meters. Examples include farmland or cleared sub-divisions with isolated trees and uncut grass.



Terrain Category 3

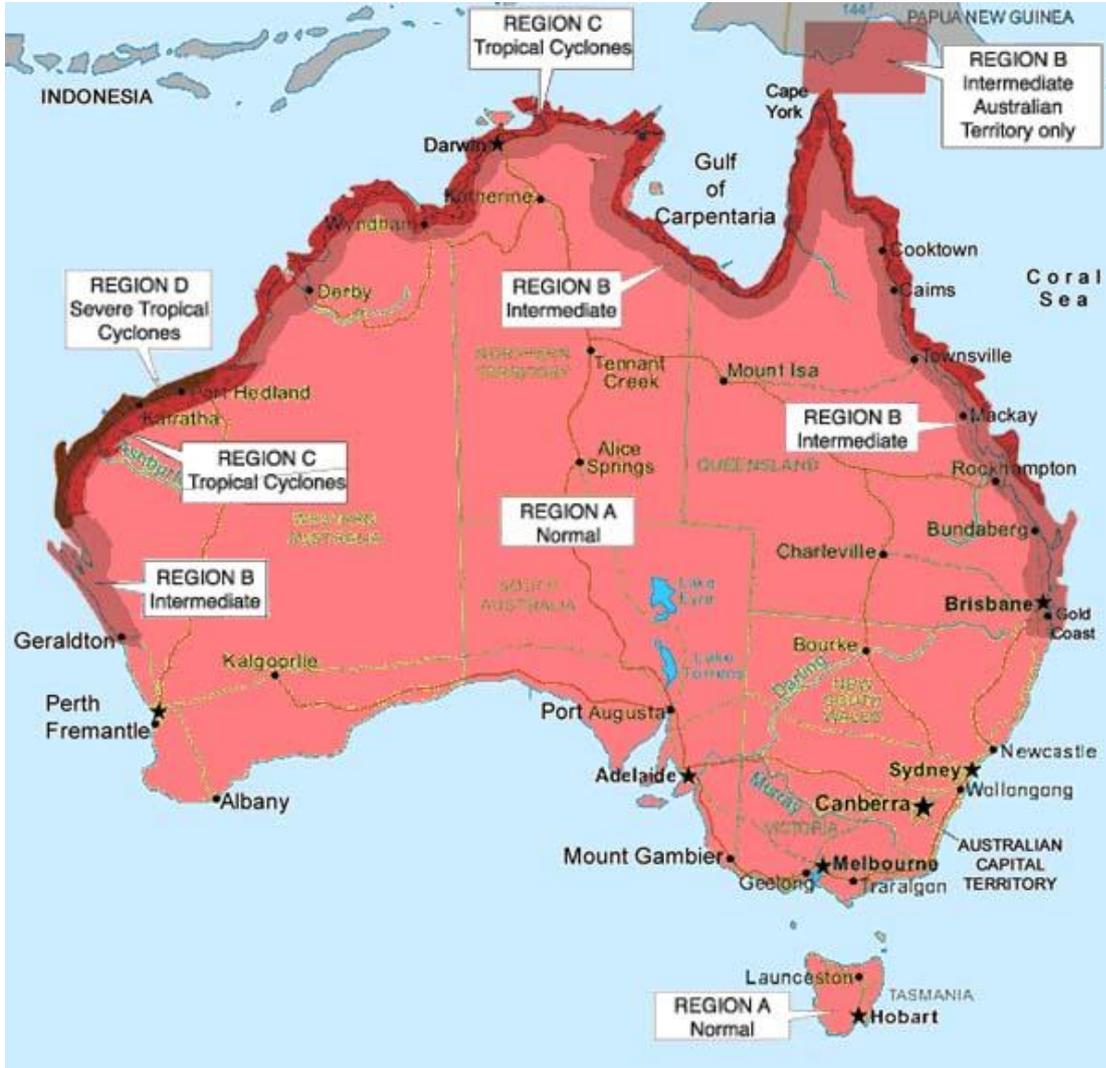
Terrain with numerous closely spaced obstructions having heights generally from 3 meters to 10 meters. Examples include typical suburban housing or light industrial areas.



Wind regions are pre-defined for all of Australia by Australian Standard AS/NZS 1170. The Wind Region has nothing to do with surrounding topography or buildings.

Wind Zone	A	B	C	D
Wind Speed (m/s)	43	52	64	79.2

8. Region Definition for Base Rail Support Spacing



Tile Roof:

Please use the following table to determine the base rail support spacing for tile roof installations including Australia A,B,C and D cyclone zones:

Installation Height	Region A (mm/in)	Region B (mm/in)	Region C (mm/in)	Region D (mm/in)
5 Meters (16ft)	1680/66	1400/55	1000/39	750/29.5
10 Meters (32ft)	1500/59	1150/45	930/36.6	650/25.5
15 Meters (48ft)	1450/57	1020/40	850/33	590/23
20 Meters (64ft)	1350/53	980/38.5	750/29.5	500/19.6

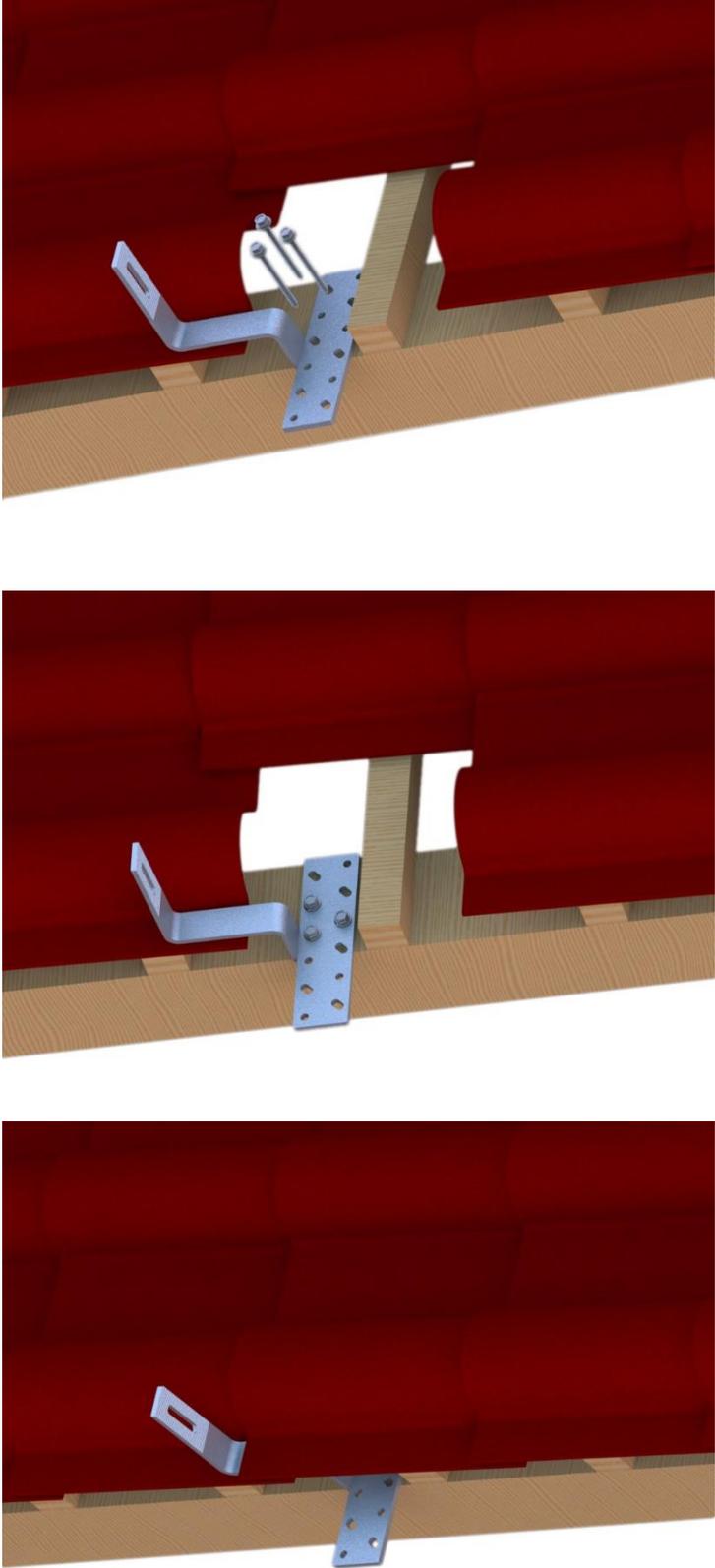
Metal Roof:

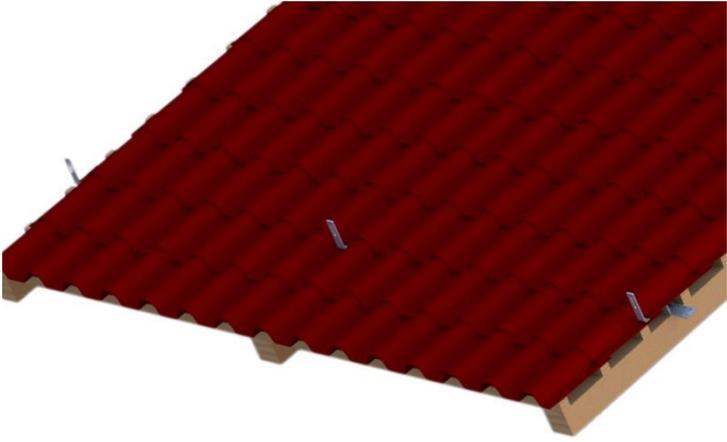
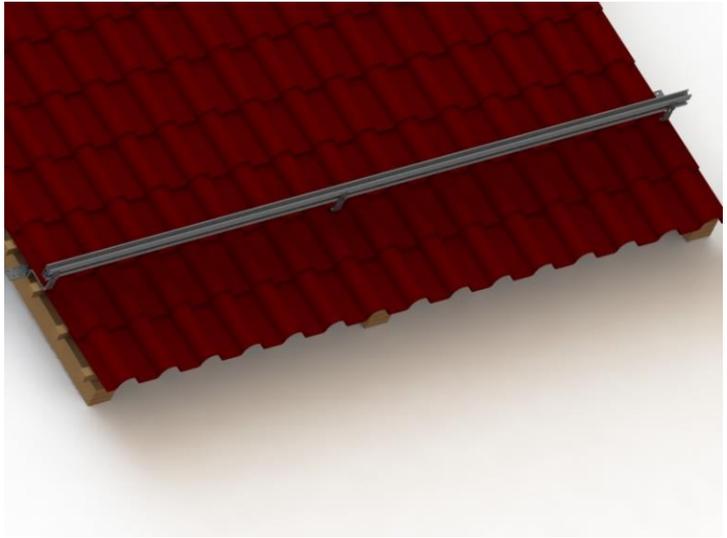
Please use the following table to determine the base rail support spacing for sheet metal roof installations including Australia A,B,C and D cyclone zones:

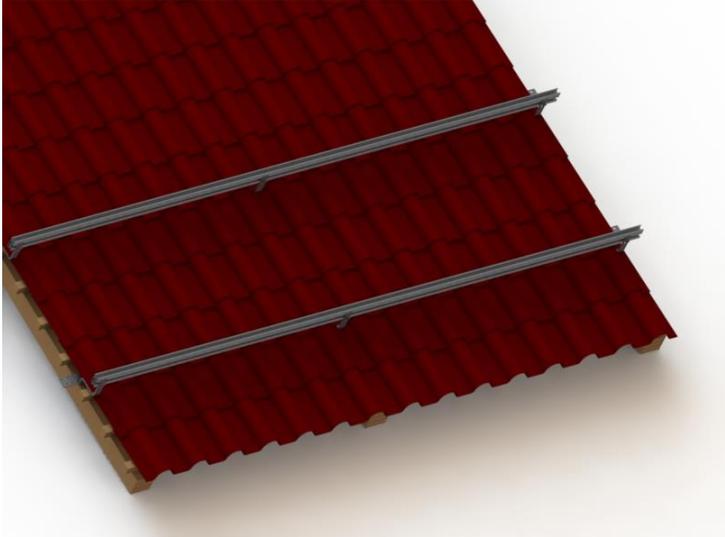
Installation Height	Region A & B (mm/in)	Region C & D (mm/in)
5 Meters(16ft)	1100/43.3	626/24.65
10 Meters(32ft)	1000/39.37	570/22.4
15 Meters(48ft)	970/38.19	535/20.87
20 Meters(64ft)	878/34.56	500/19.7

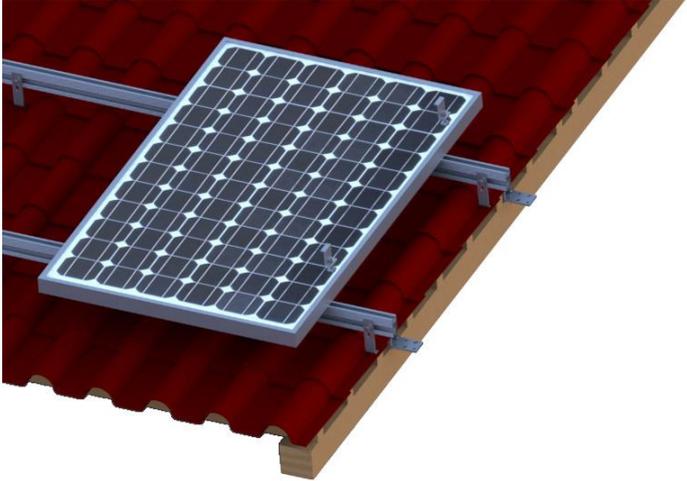
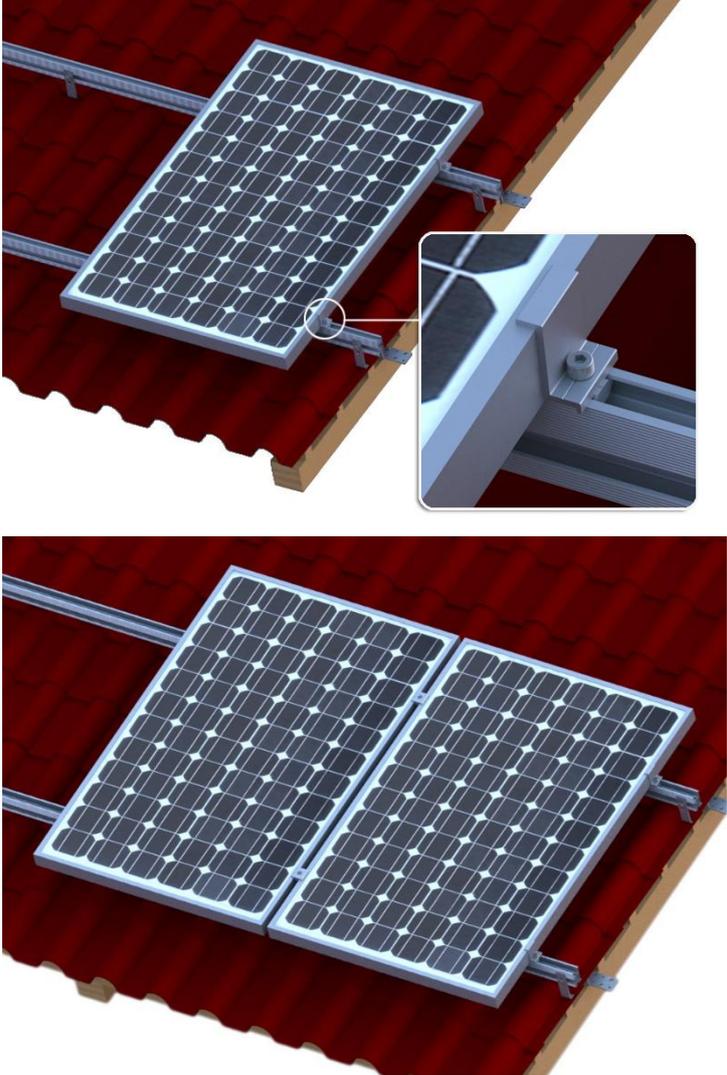
- The above figures are based on modules lengths of up to 2000mm, maximum weight is 15Kg/m²
- Each support feet should be fixed to the purlins under using twoΦ6.3×80mm screws through sheet metal roofs with gasket.
- The above spacing applies for fixing through thin sheet purlins (greater than 0.75mm thickness) or a minimum embedment of 50mm into timber purlins.
- Contact MPS for modules longer than 2000mm

9. Installation Steps

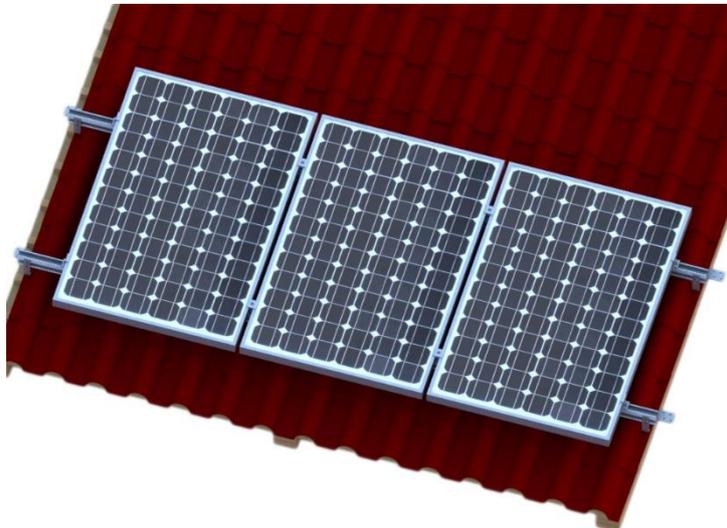
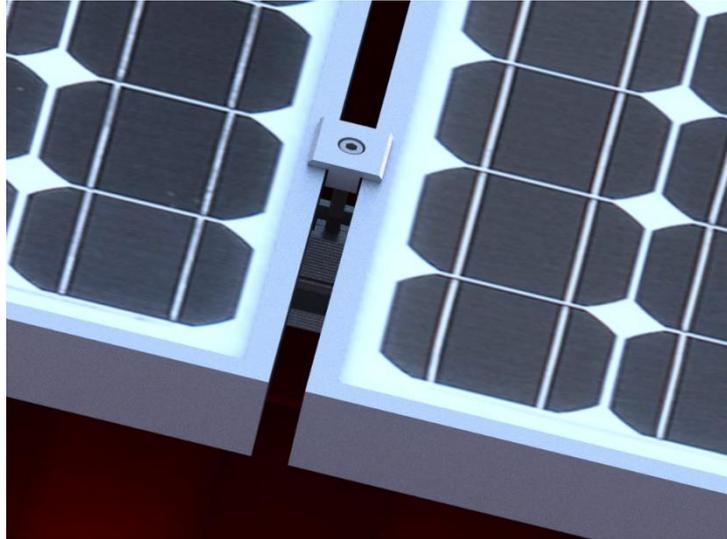
Step s	Instructions	3D drawing
1	Install the roof hook as shown in the figure below, min. 3EA wooden screws is required.	

		
2	<p>Install the Aluminum Rail to the roof hook, using M8*25 Hexagon screw, M8 spring gasket, M8 wing gasket and fixing nuts</p>	

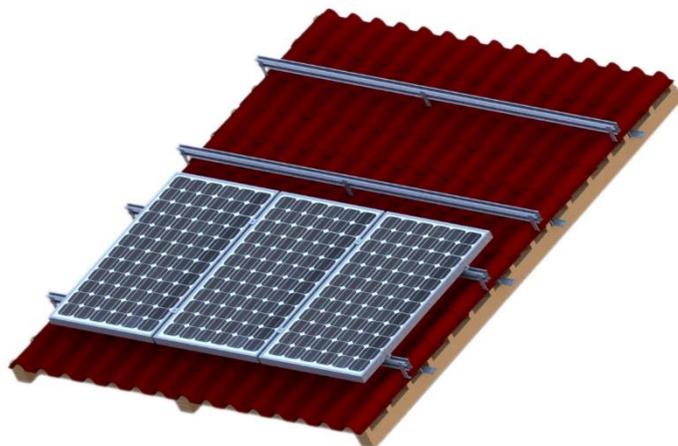
<p>3</p>	<p>Arrange the layout per part 3 “How to plan the array layout” and install the hooks and rails to the roof.</p>	
<p>4</p>	<p>If the aluminum rail is not long enough, connect the rails by splice kits as shown in below figures.</p>	

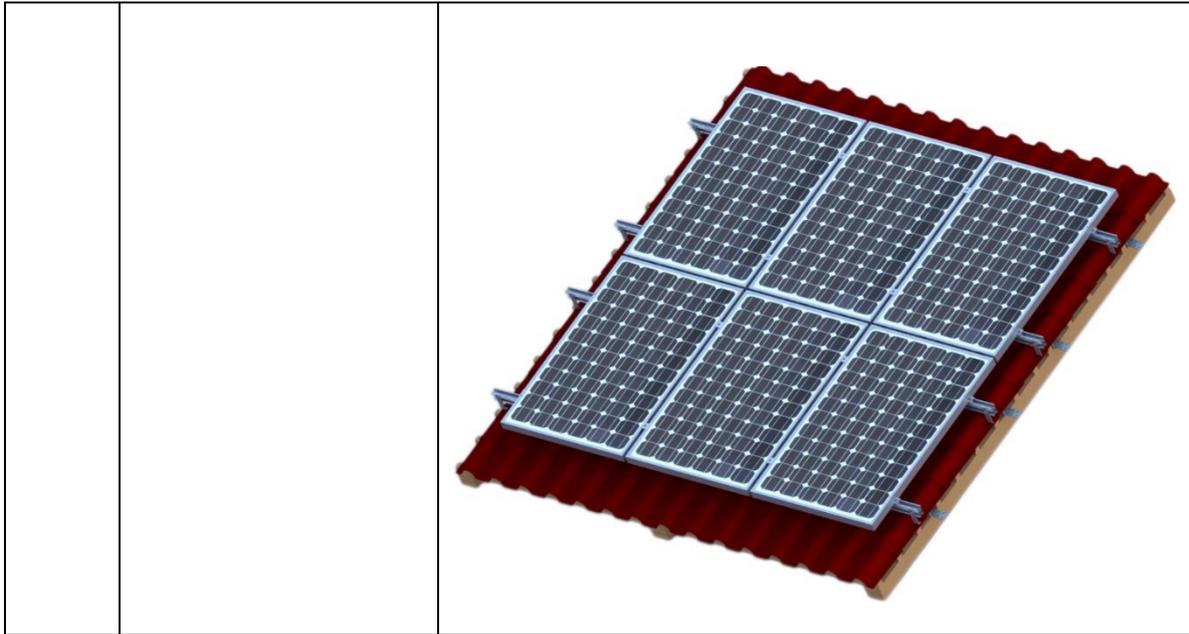
<p>5</p>	<p>Put the solar panel in position on the rails</p>	
<p>6</p>	<p>Install the solar panels on the rail using end clamps with M8*25 Hexagon screw and fixing nuts,</p> <p>Splice the adjacent solar panels using middle clamps with M8 Hegaxon screw</p>	

The hexagon screw length is to be determined by the solar panel's thickness) and fixing nuts.



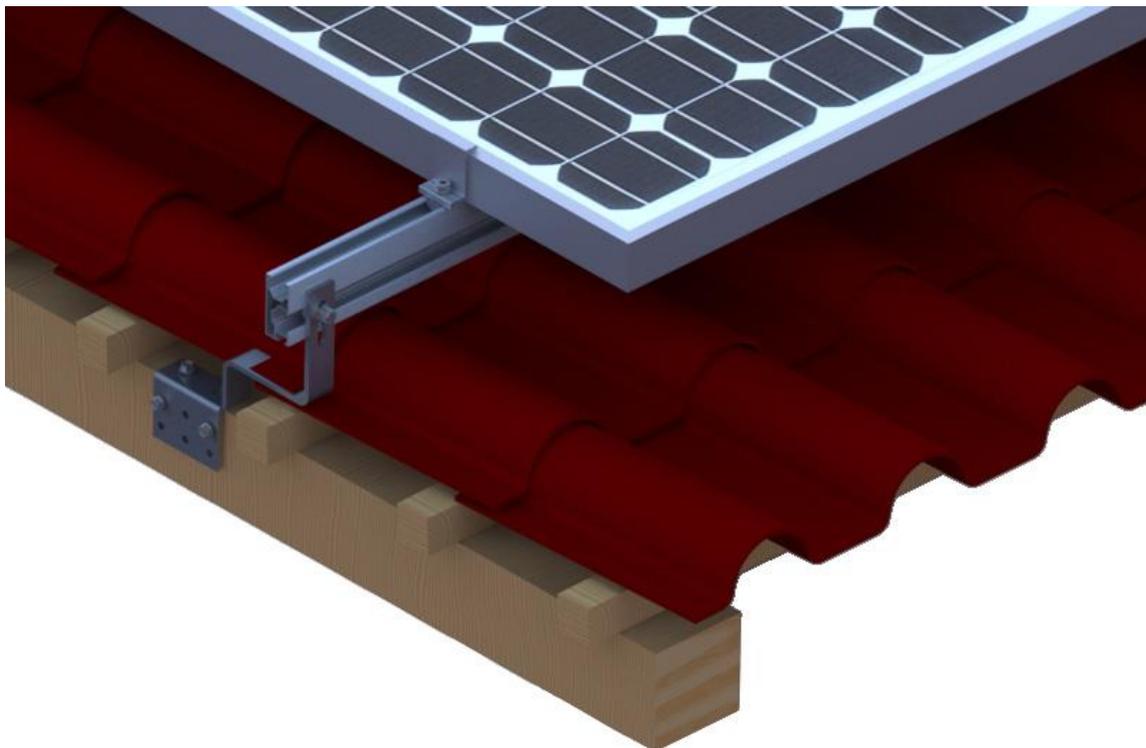
7 Install other solar panels same as above steps and finish the installation.

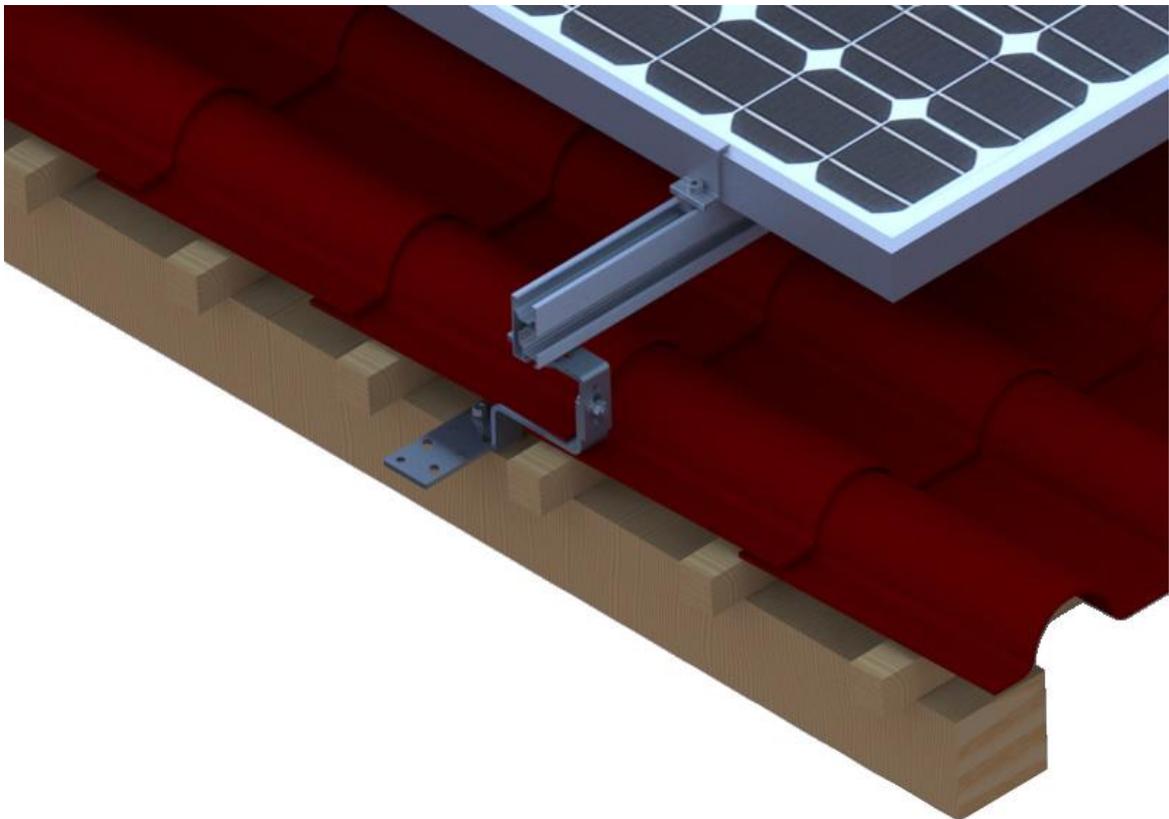
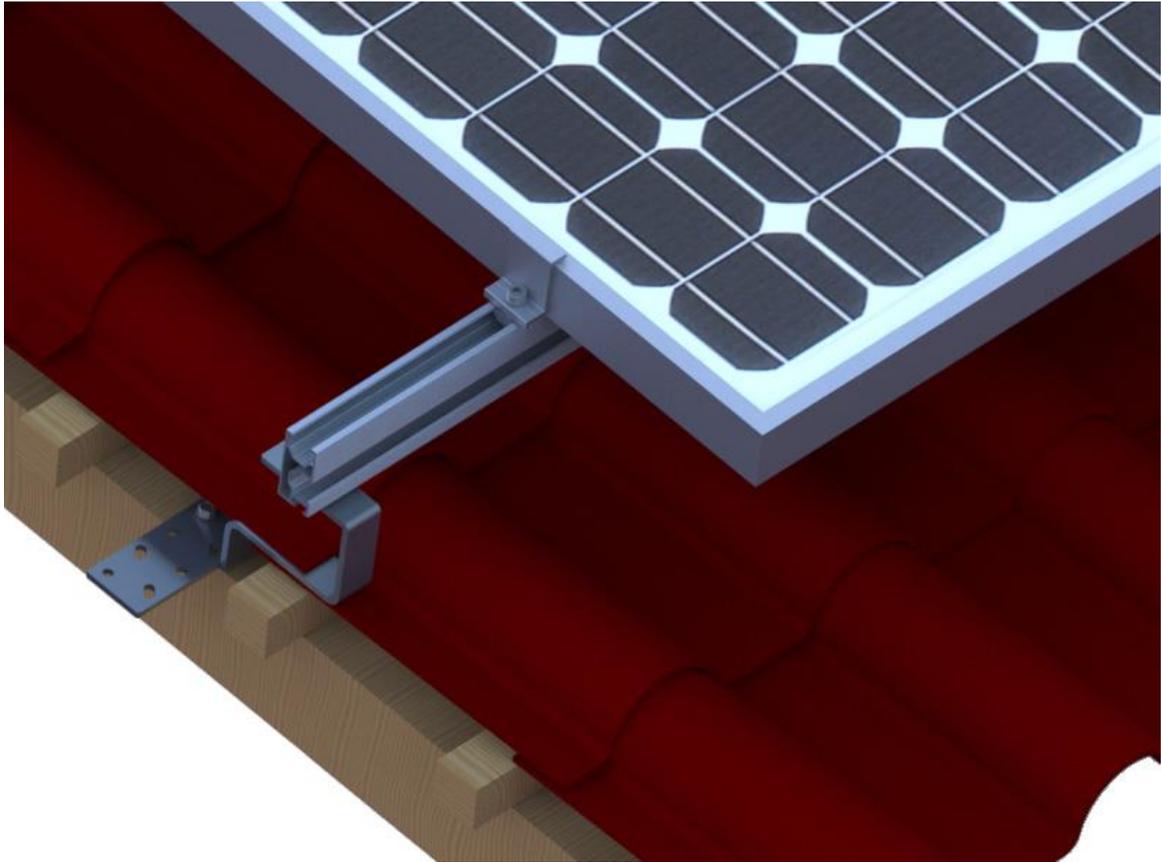


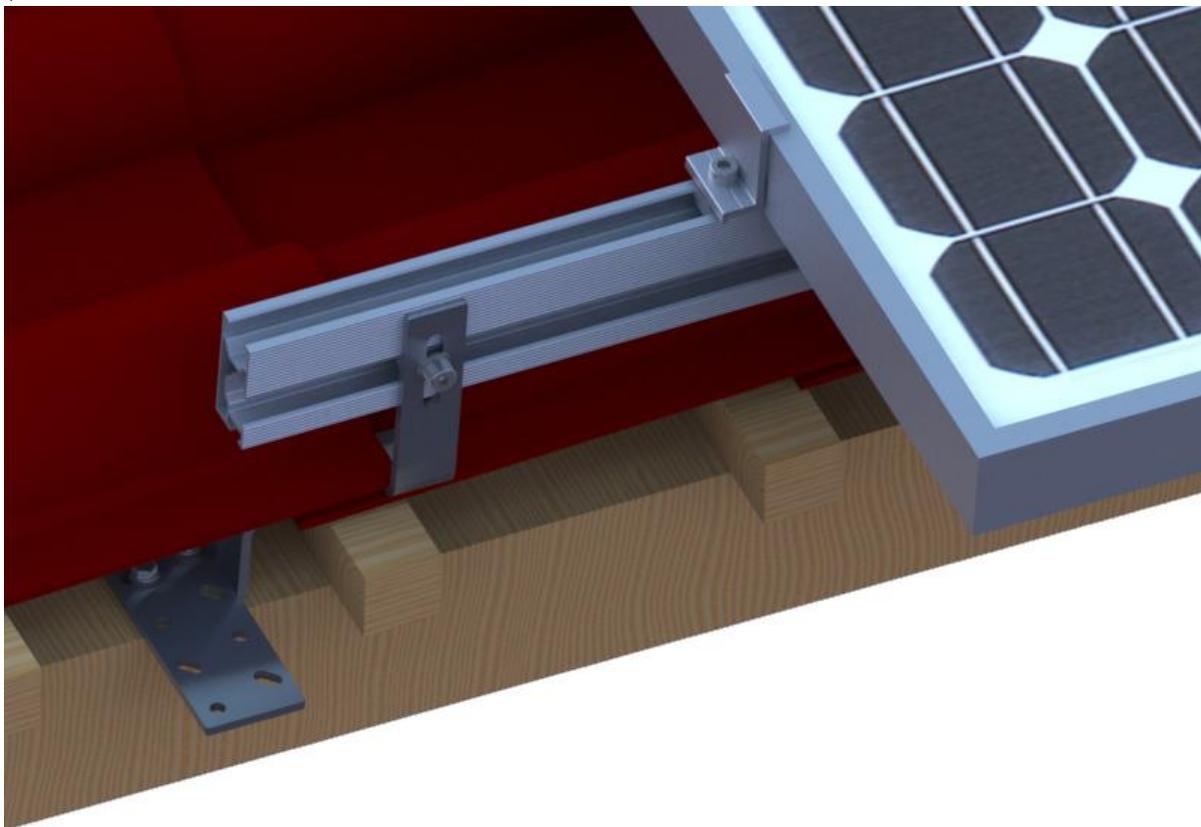
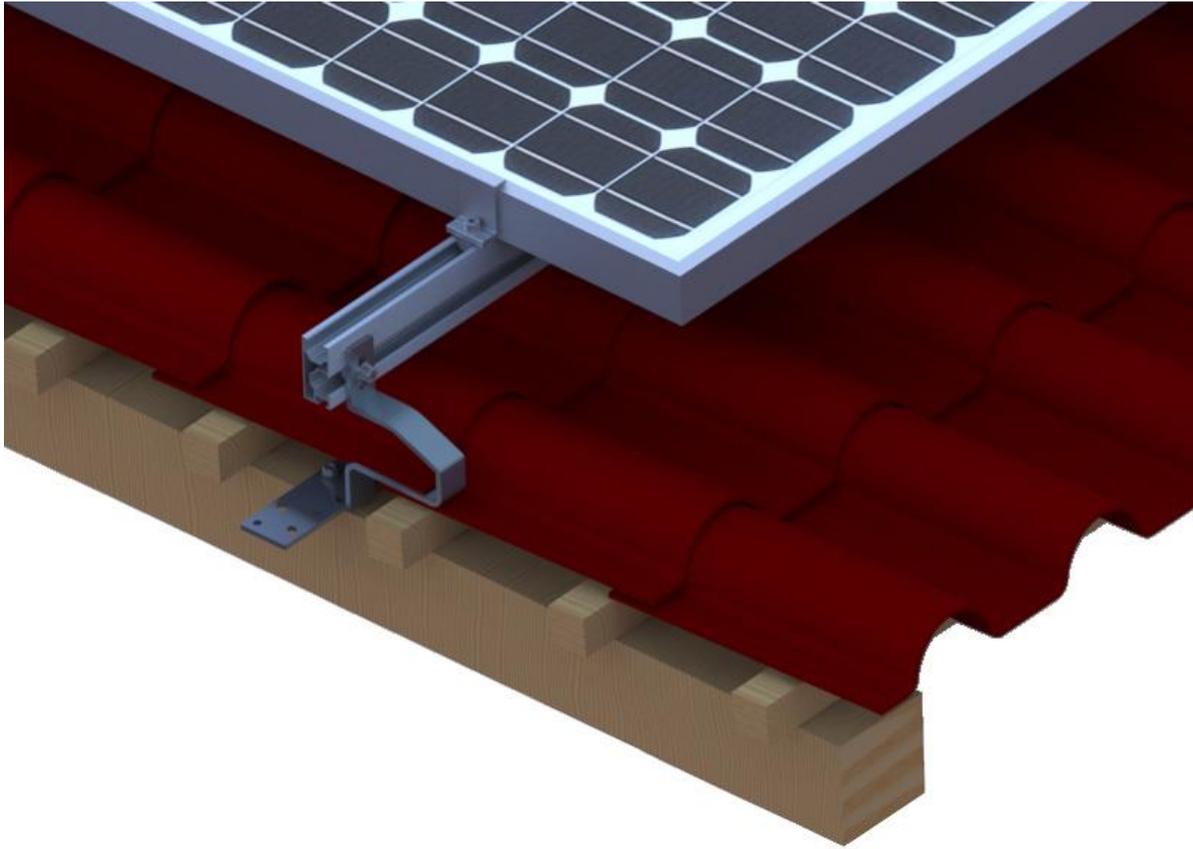


The MPS mounting system has different types of roof hooks to match different installation requirements.

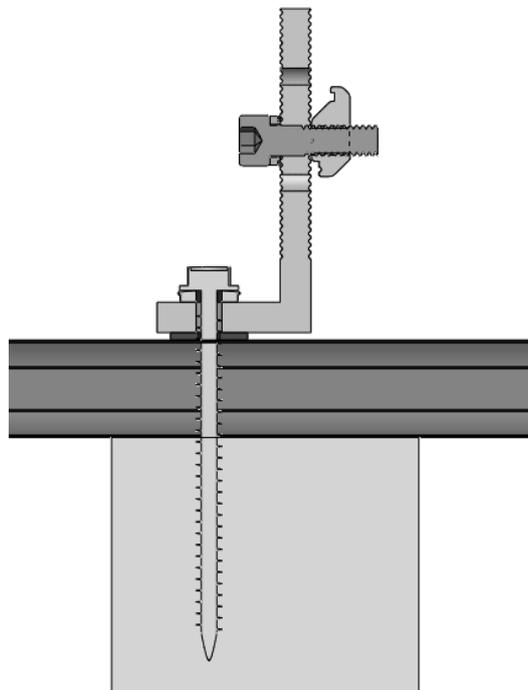
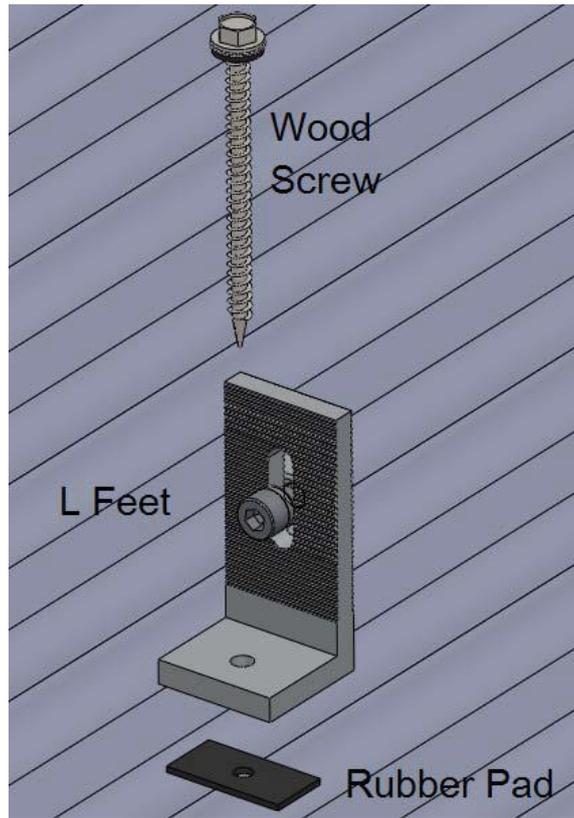
The following are different hook installation illustrations for tile:

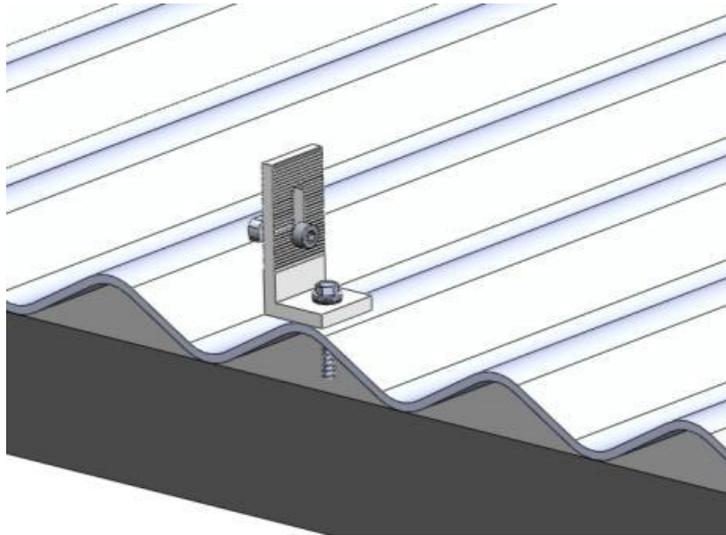






Installation on Tin Roof:





Grounding:



15-year limited Product Warranty, 5 year limited Finish Warranty

Max power Solar warrants to the original purchaser ("Purchaser") of product(s) that it manufactures ("Product") at the original installation site that the Product shall be free from defects in material and workmanship for a period of ten (15) years, except for the anodised finish, which finish shall be free from visible peeling, or cracking or chalking under normal atmospheric conditions for a period of five (5) years, from the earlier of 1) the date the installation of the Product is completed, or 2) 30 days after the purchase of the Product by the original Purchaser ("Finish Warranty"). The Finish Warranty does not apply to any foreign residue deposited on the finish. All installations in corrosive atmospheric conditions are excluded. The Finish Warranty is VOID if the practices specified by AAMA 609 & 610-02 – "Cleaning and Maintenance for Architecturally Finished Aluminum" (www.aamanet.org) are not followed by Purchaser. This Warranty does not cover damage to the Product that occurs during its shipment, storage, or installation.

This Warranty shall be VOID if installation of the Product is not performed in accordance with MPS's written installation instructions, or if the Product has been modified, repaired, or reworked in a manner not previously authorized by PMS IN WRITING, or if the Product is installed in an environment for which it was not designed. MPS shall not be liable for consequential, contingent, or incidental damages arising out of the use of the Product by Purchaser under any circumstances.

If within the specified Warranty periods the Product shall be reasonably proven to be defective, then MPS shall repair or replace the defective Product, or any part thereof, in MPS's sole discretion. Such repair or replacement shall completely satisfy and discharge all MPS's liability with respect to this limited Warranty. Under no circumstances shall MPS be liable for special, indirect or consequential damages arising out of or related to use by Purchaser of the Product.

Manufacturers of related items, such as PV modules and flashings, may provide written warranties of their own. MPS's limited Warranty covers only its Product, and not any related items

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Made in China