



EON Solar Energy Tech. Co. Ltd

EON Roof Mounting System Installation Manual



EON Solar Energy Tech.Co.,Ltd

Tel: 86-592-91294709

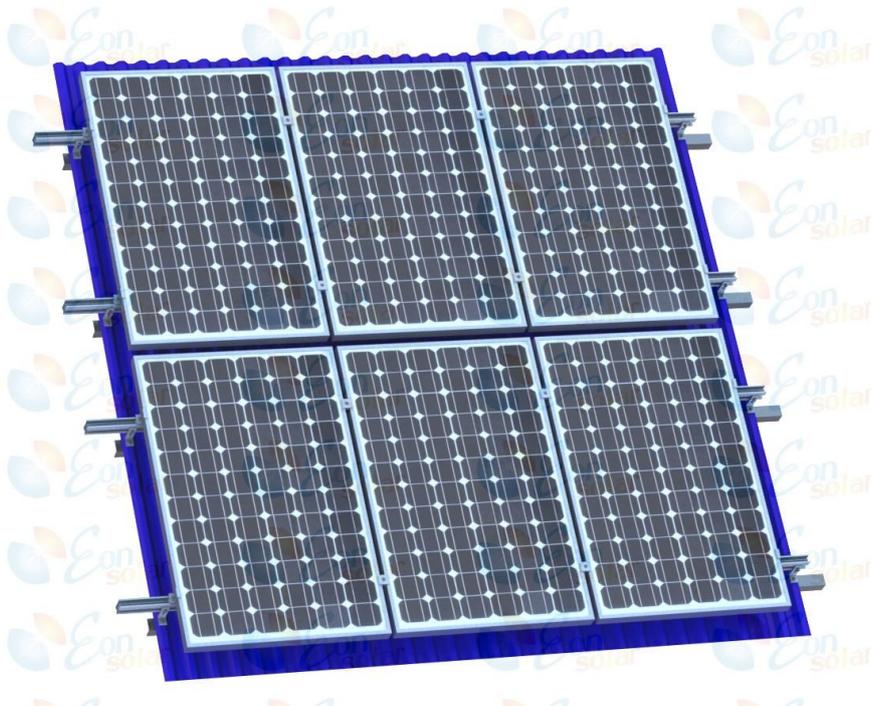
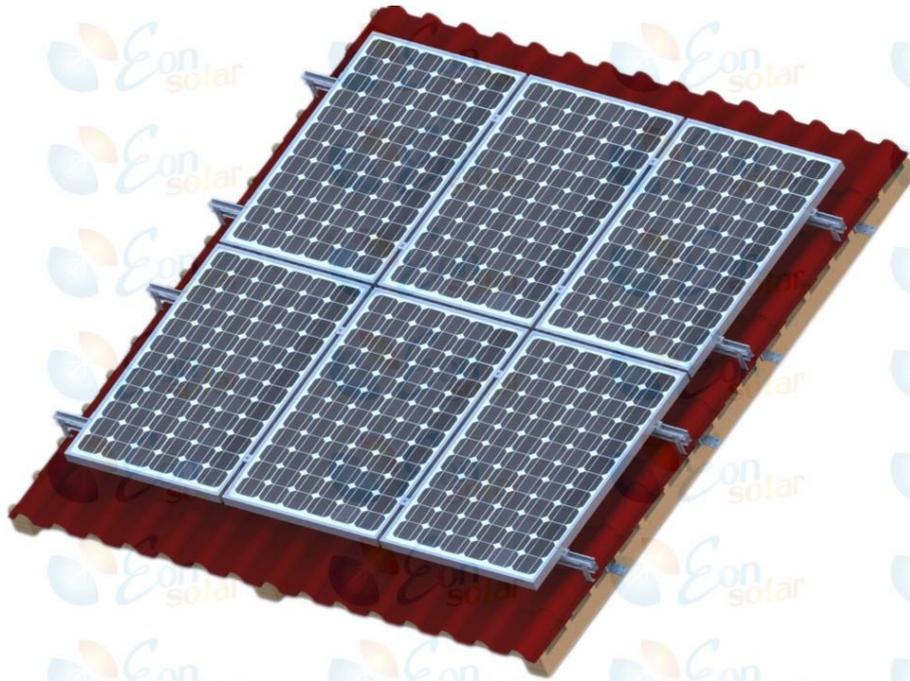
Web:www.solaris.com

Fax: 86-592-91294709

Email: info@eonsolar.com.cn



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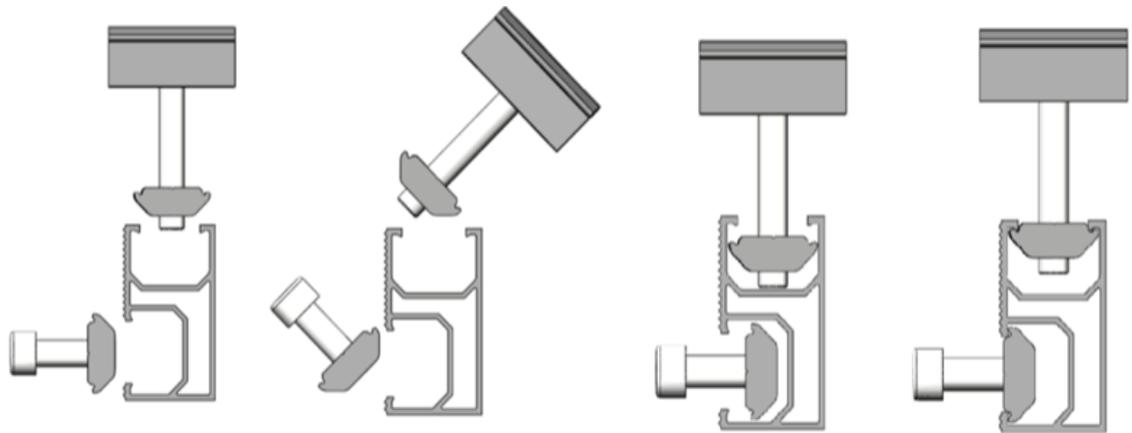




Roof Mounting System Installation Manual

1. General Information

Thanks for choosing EON Solar roof mounting System. Our EON solar innovative design can be easily installed and it saves your labor cost and time. Our aluminum fixing nuts can be put into rail on any position directly and screw tightly with rails. All our mountings complys with AS/NZS1170.2 with 10 years warranty and 20 years service life.



2. Technical Specification

2.1. Features

- 6005-T5 Aluminum extrusion
- EON solar innovative design can be easily installed and it can saves your labor cost and time.
- Suitable for different conditions and most of solar panels at present market.
- Complies with Australian/New Zealand Standard on Wind Actions AS/NZS1170.2.2011
- Anodized finish

2.2. Installation condition

- Install site : Low profile roof or flat roof
- Tilt Angle : Flushed with the roof (10~60 deg)
- Building Height: Up to 20 m
Max Wind Speed: <60m/s
- Snow Load: <1.4KN/m2
Standard : AS/NZS 1170 and other international Standard
- Material : High Class Aluminum alloy Al6005-T5& Stainless steel 304
Color: Natural or Customized
- Anticorrosive: anodized aluminum & stainless steel

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- Warranty: 10 years warranty and 20 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, and angle grinder fitted with a continuous edge diamond tipped tile cutting blade; gloves, hearing protection, a face protection mask, and a suitably rated breathing protection mask for all people in proximity of grinding</p>	
<p>Gloves; Protect the hazard of the sharp corners.</p>	
<p>Cord or color pen; Mark the installation position;</p>	



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Spirit level	 A silver spirit level with a green bubble level in the center and two smaller ones at the ends.
Rule	 A silver and yellow tape measure with the blade extended.
If necessary, timber to shim the legs	



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4. Component list

Item	Component	Description	3D drawing
1	Aluminum Rail	<ul style="list-style-type: none"> ● EON-R-2560 EON Standard 2560mm rail ● EON-R-3405 EON Standard 3405mm rail ● EON-R-4200 EON Standard 4200mm rail ● Customized length 	
2	EON Rail Splice Kit	For connecting 2 pieces of base rail, with 2 pcs of M8*20mm hexagon screws	
3	EON 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	EON 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 	



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



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5. EON roof hooks

Item	Component	Description	3D drawing
1	EON Stainless Steel Hook 1#	<ul style="list-style-type: none"> ● Fix to the rafter below Roman tile roof ● 3pcs st6.3x80 wood screws ● 1pc of M8 Hexagon screw ● 1pc of spring washer ● 1pc of flat washer ● 1pcs of aluminum fixing nut. 	
2	EON Stainless Steel Hook 2#	<ul style="list-style-type: none"> ● Fix to the rafter below Roman tile roof ● 3pcs st6.3x80 wood screws ● 1pc of M8 Hexagon screw ● 1pc of spring washer ● 1pc of flat washer ● 1pcs of aluminum fixing nut. 	
3	EON Stainless Steel Hook 3#	<ul style="list-style-type: none"> ● Fix to the rafter below Roman tile roof ● 3pcs st6.3x80 wood screws ● 1pc of M8 Hexagon screw ● 1pc of spring washer ● 1pc of flat washer ● 1pcs of aluminum fixing nut. 	



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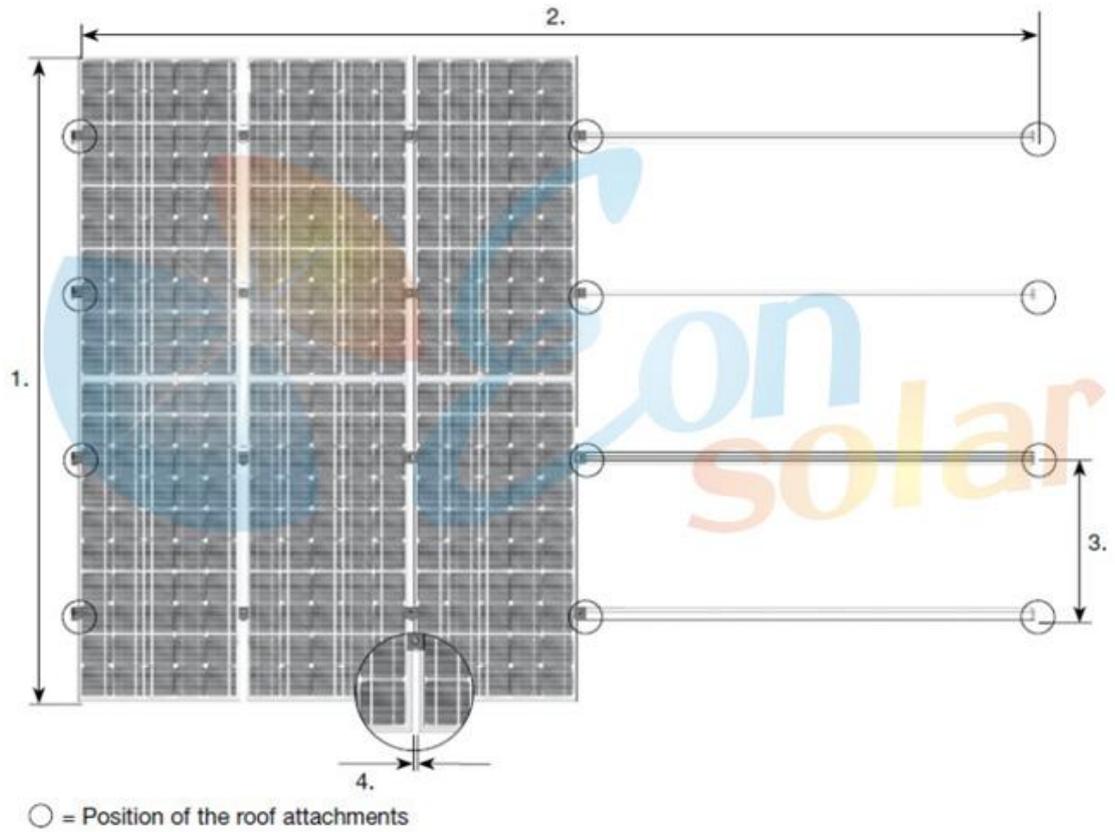


4	EON Stainless Steel Hook 4#	<ul style="list-style-type: none"> ● Fix to the rafter below flat tile roof ● 2pcs st6.3x80 wood screws ● 1pc of M8 Hexagon screw ● 1pc of spring washer ● 1pc of flat washer ● 1pcs of aluminum fixing nut. 	
5	EON Stainless Steel Hook 5#	<ul style="list-style-type: none"> ● Fix to the rafter below slate tile roof ● 2pcs st6.3x80 wood screws ● 1pc of M8 Hexagon screw ● 1pc of spring washer ● 1pc of flat washer ● 1pcs of aluminum fixing nut. 	
6	EON Stainless Steel Hook 6#	<ul style="list-style-type: none"> ● Fix to the rafter below Roman tile roof ● 3pcs st6.3x80 wood screws ● 1pc of M8 Hexagon screw ● 1pc of spring washer ● 1pc of flat washer ● 1pcs of aluminum fixing nut. 	
7	EON Stainless Steel Hook 7#	<ul style="list-style-type: none"> ● Fix to the rafter below Roman tile roof ● 3pcs st6.3x80 wood screws ● 1pc of M8 Hexagon screw ● 1pc of spring washer ● 1pc of flat washer ● 1pcs of 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 + 11/16 in (18 mm)) + 1-1/4 in (32 mm)
3. Vertical spacing of the roof attachment = approx. 1/2 of module height
4. Distance between the modules: 11/16 in (18 mm)

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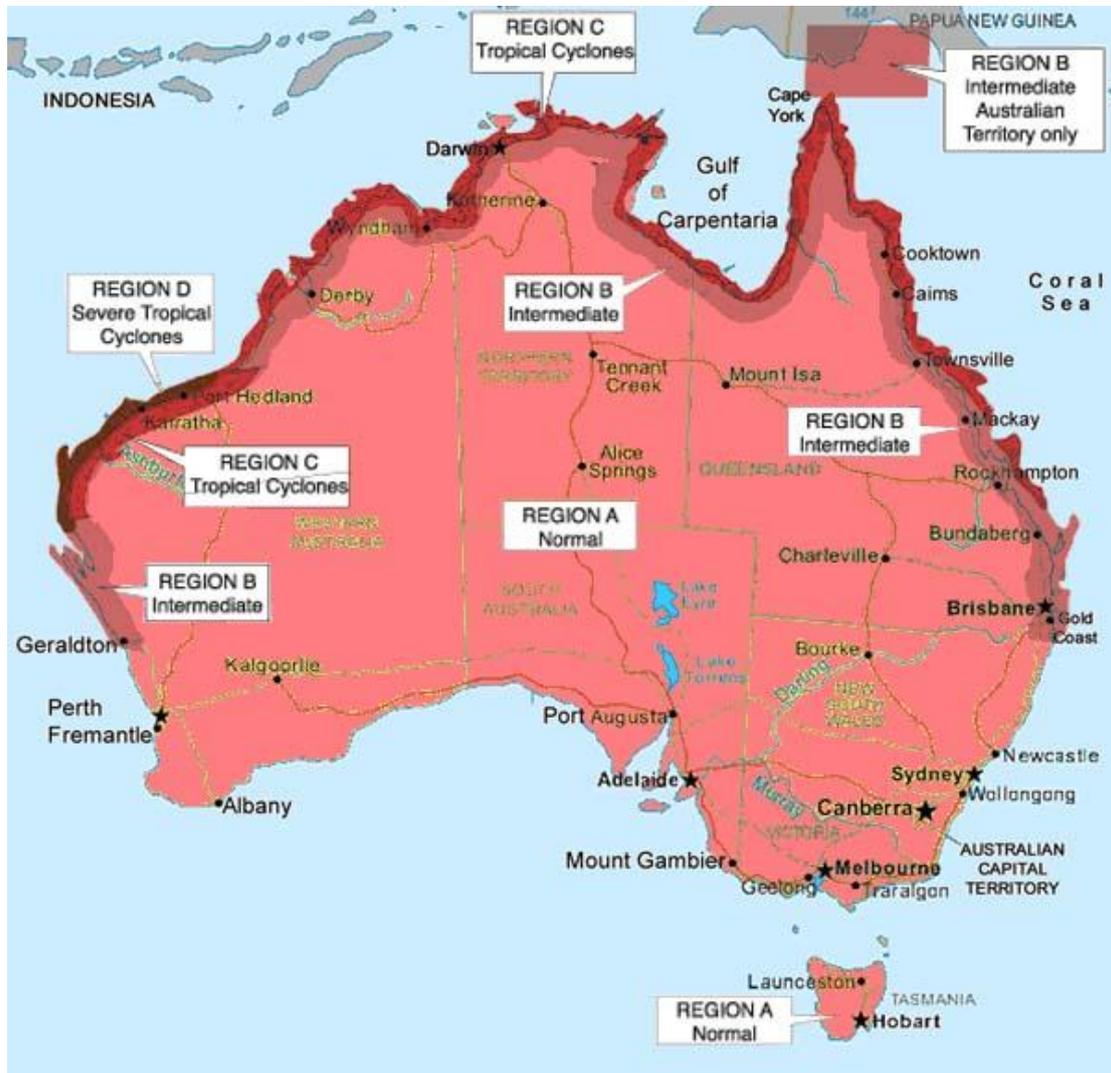
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7. Region Definition



I . 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



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II . 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:

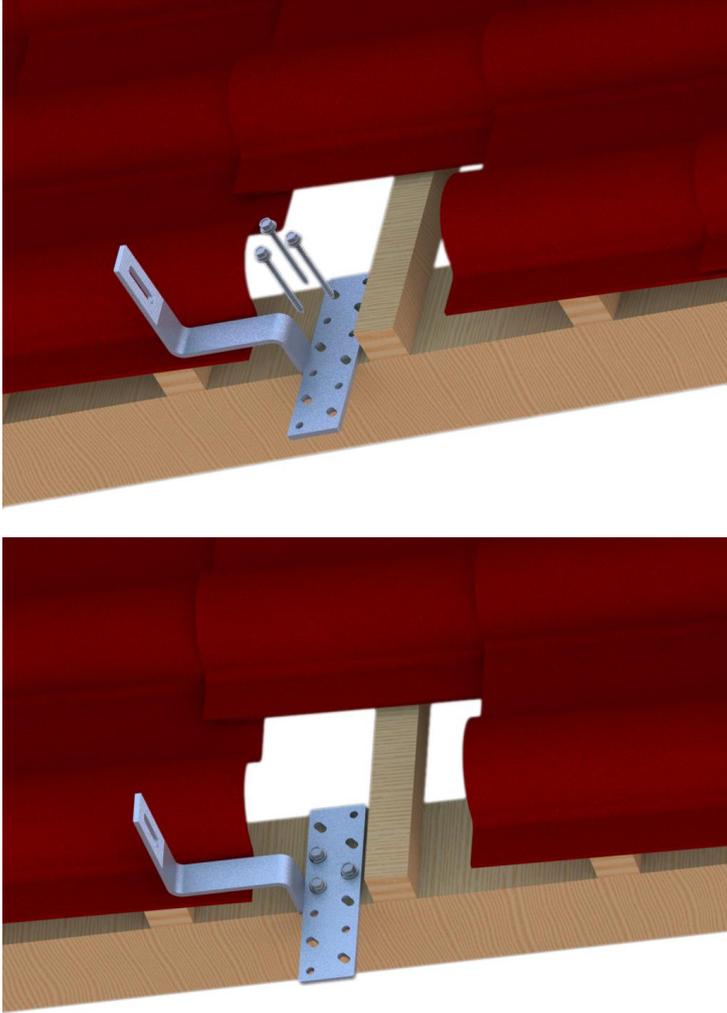
Installation Height	Region A & B (mm/in)	Region C & D (mm/in)
5 Meters(16ft)	1100/43.3	626/24.65
10 Meters(32ft)	1000/39.37	570/22.4
15 Meters(48ft)	970/38.19	535/20.87
20 Meters(64ft)	878/34.56	500/19.7

- The above figures are based on modules lengths of up to 1690mm, 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.
- For 35mm min embedment into timber or fixing into 0.55mm thickness sheet purlins the max length of module should be reduce to 1700mm the max spacing reduced by 20%





8. Installation Steps

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



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



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



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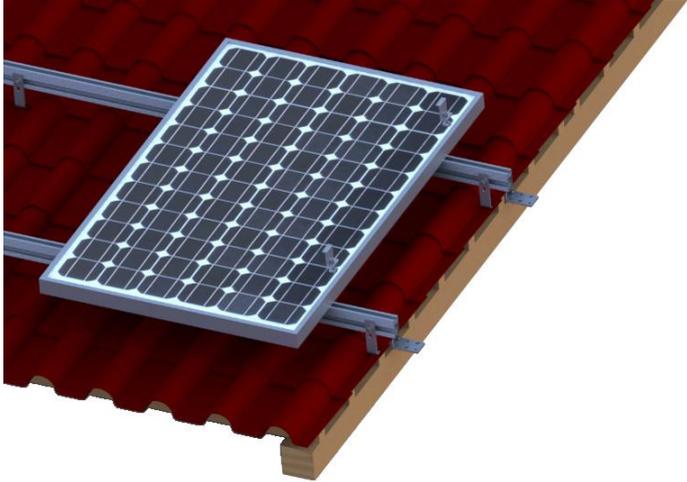
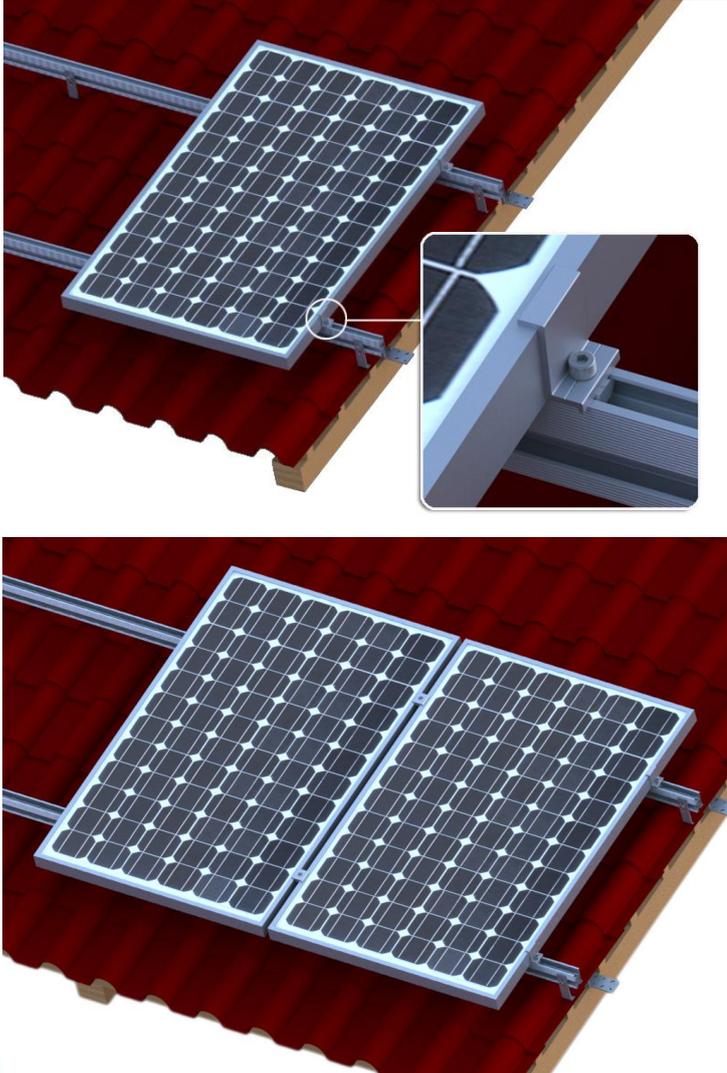


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<p>5</p>	<p>Put the solar panel in position on the rails</p>	
<p>6</p>	<p>Install the solar panels on the rail using end clamps with M8*25 Hexagon screw and fixing nuts, also splice the adjacent solar panels using middle clamps with M8 Hegaxon screw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



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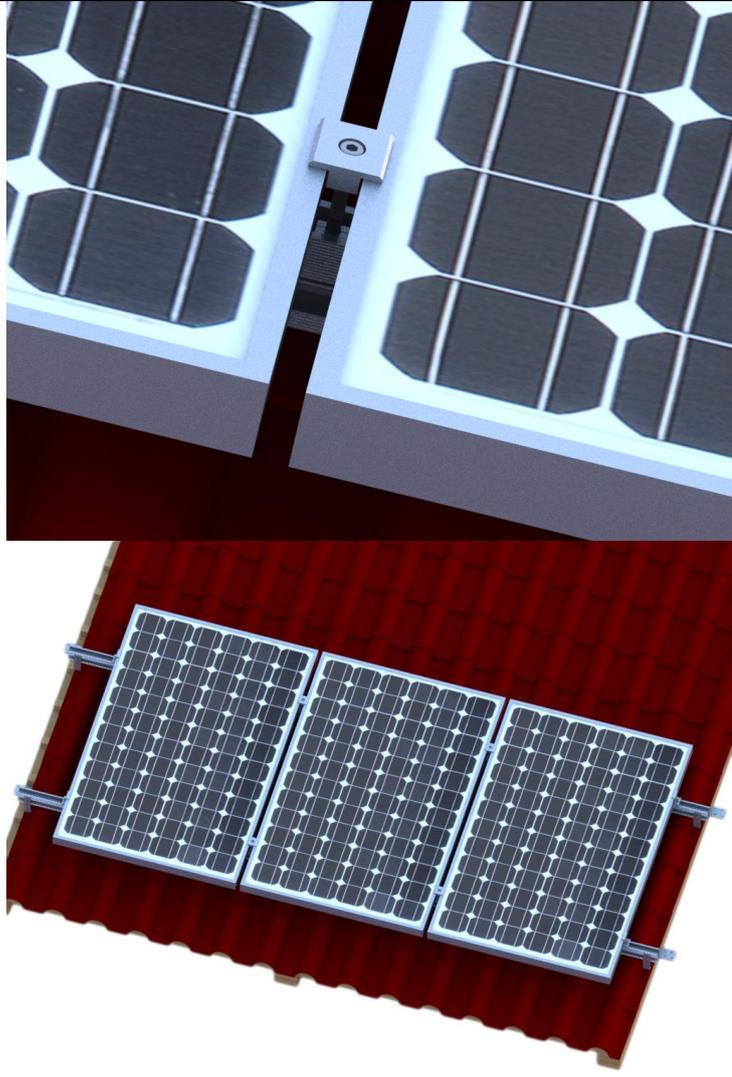
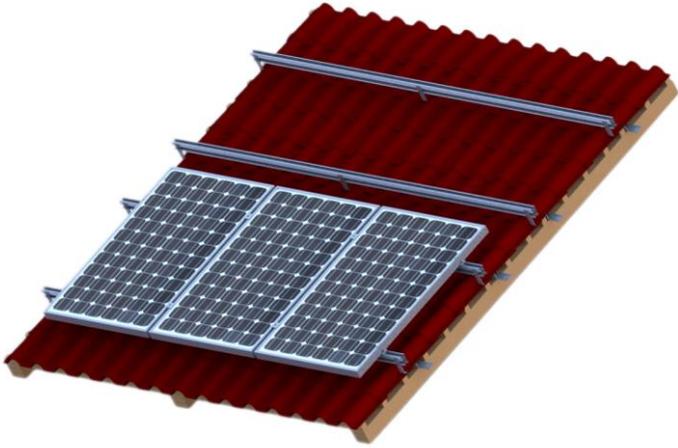


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	<p>lengthdetermined by solar panel's thickness) and fixing nuts.</p>	
<p>7</p>	<p>Install other solar panels same as above steps and finish the installation.</p>	



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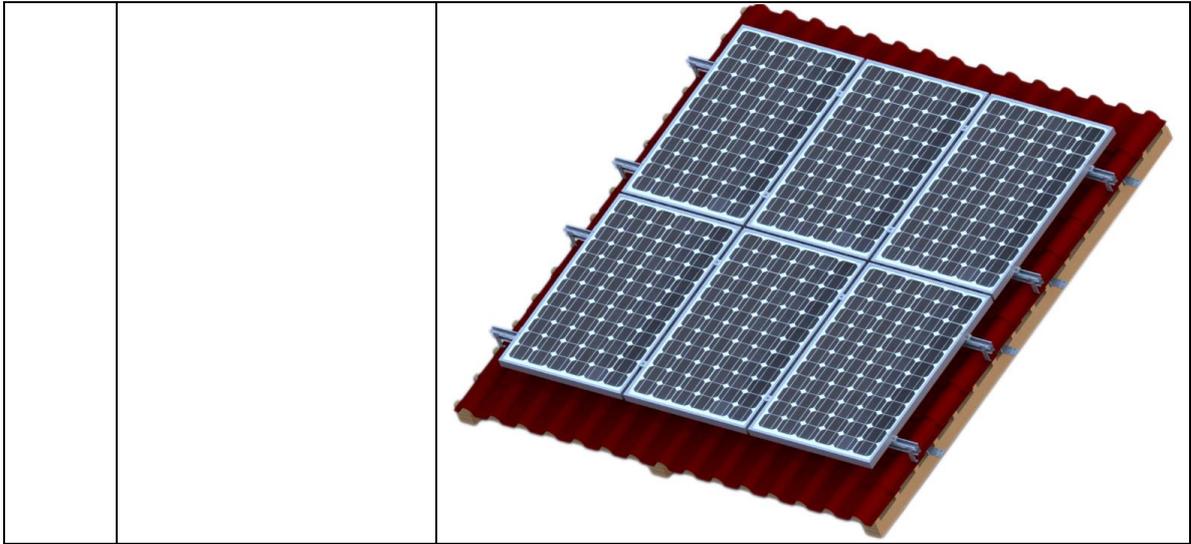


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EON Solar provide many types of roof hooks for your choice as to match different installation requirements.

The following are different hook installation illustration:



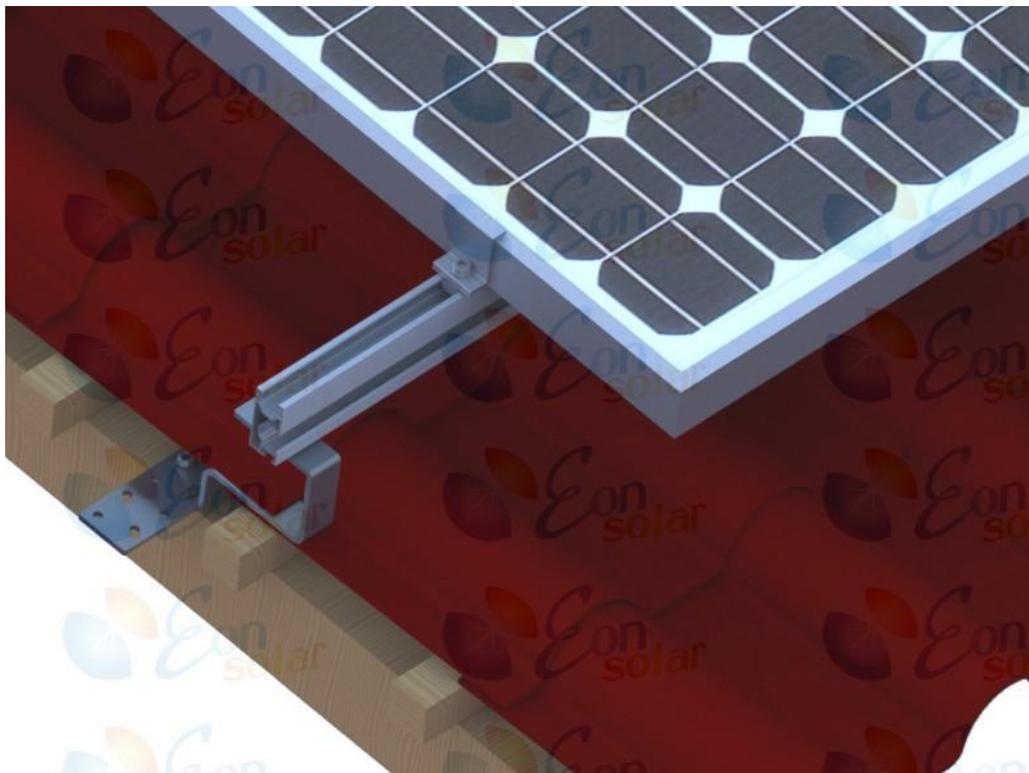
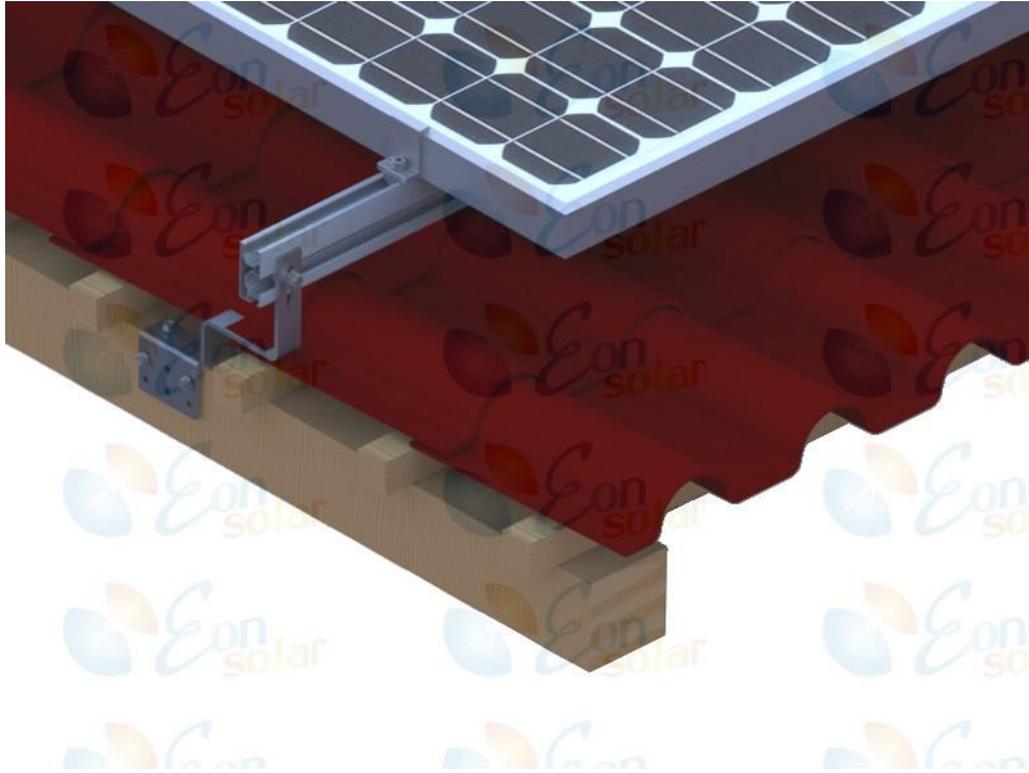
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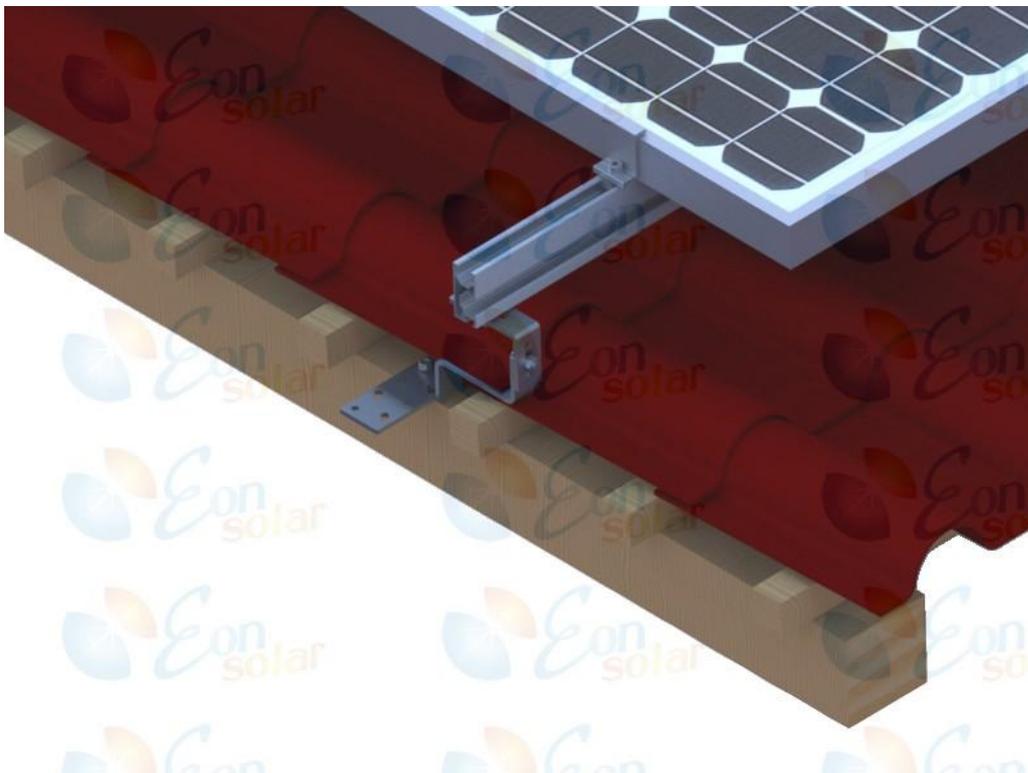
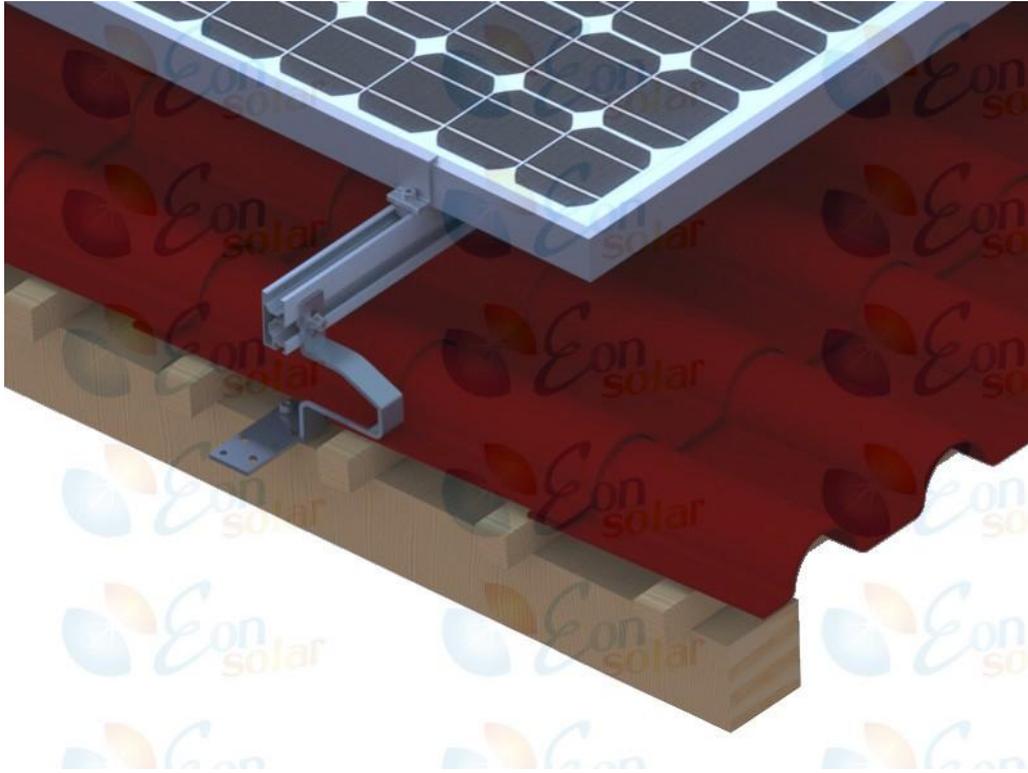
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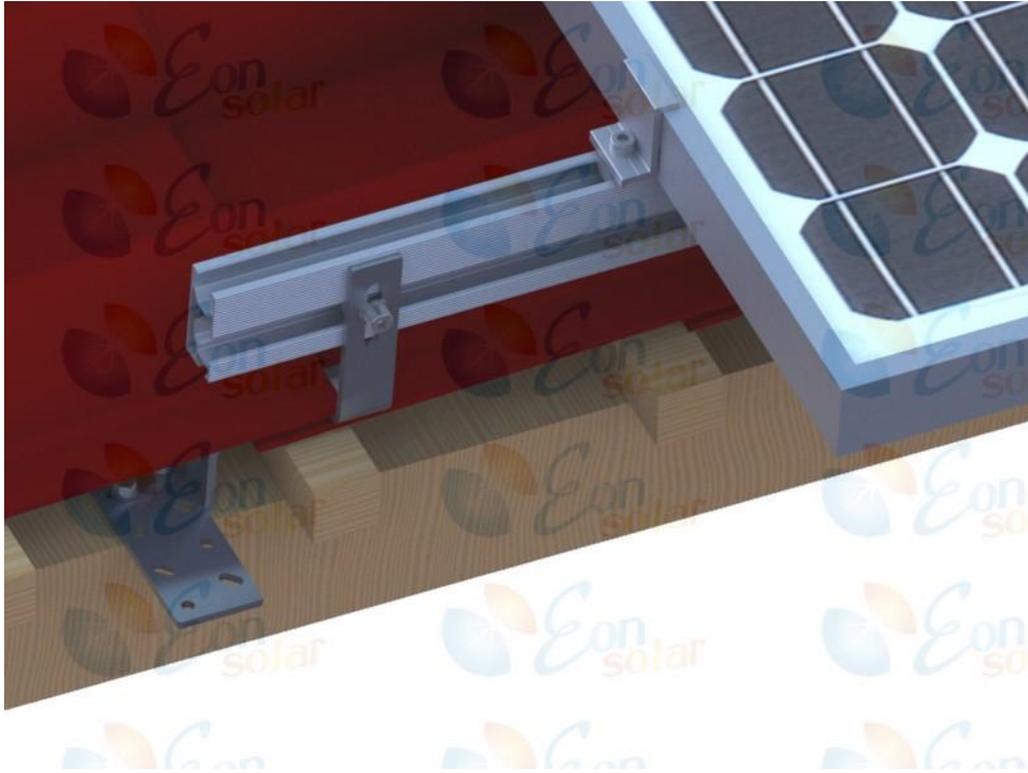
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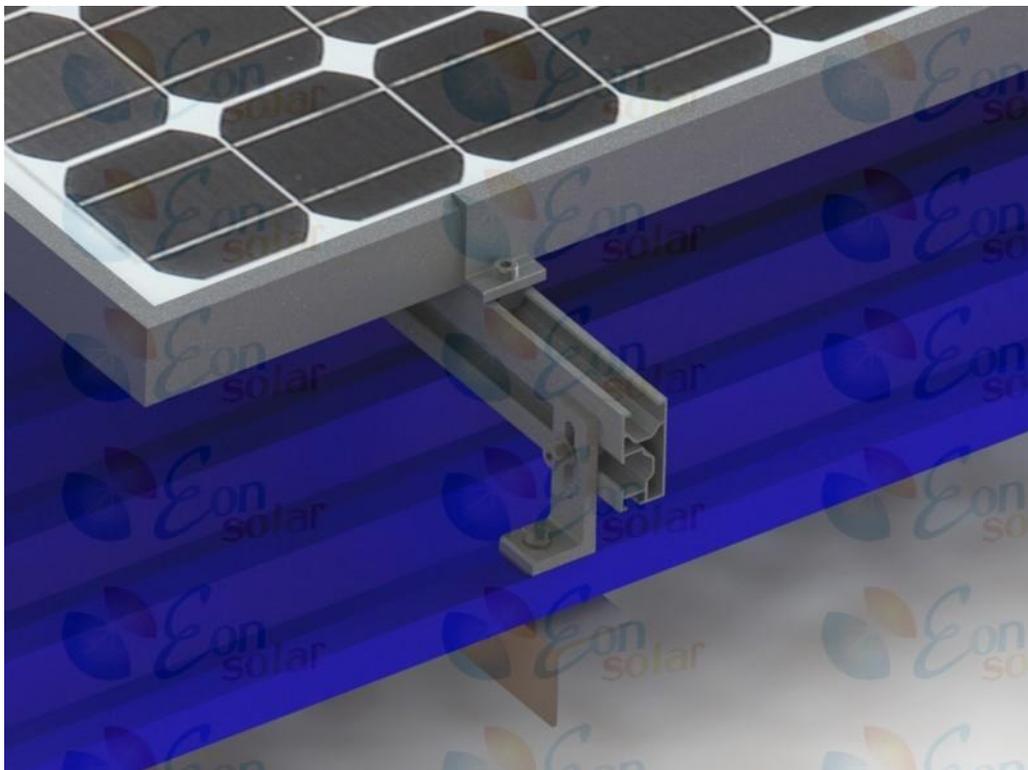
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For the metal roof, many solutions are also provided for your choice.



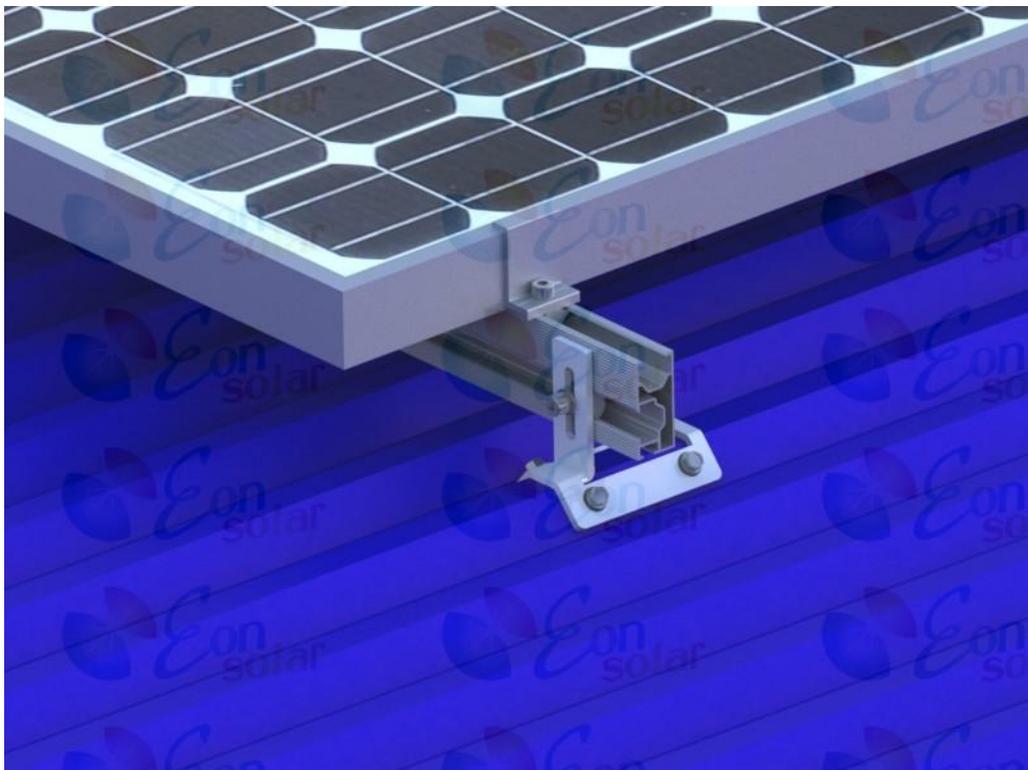
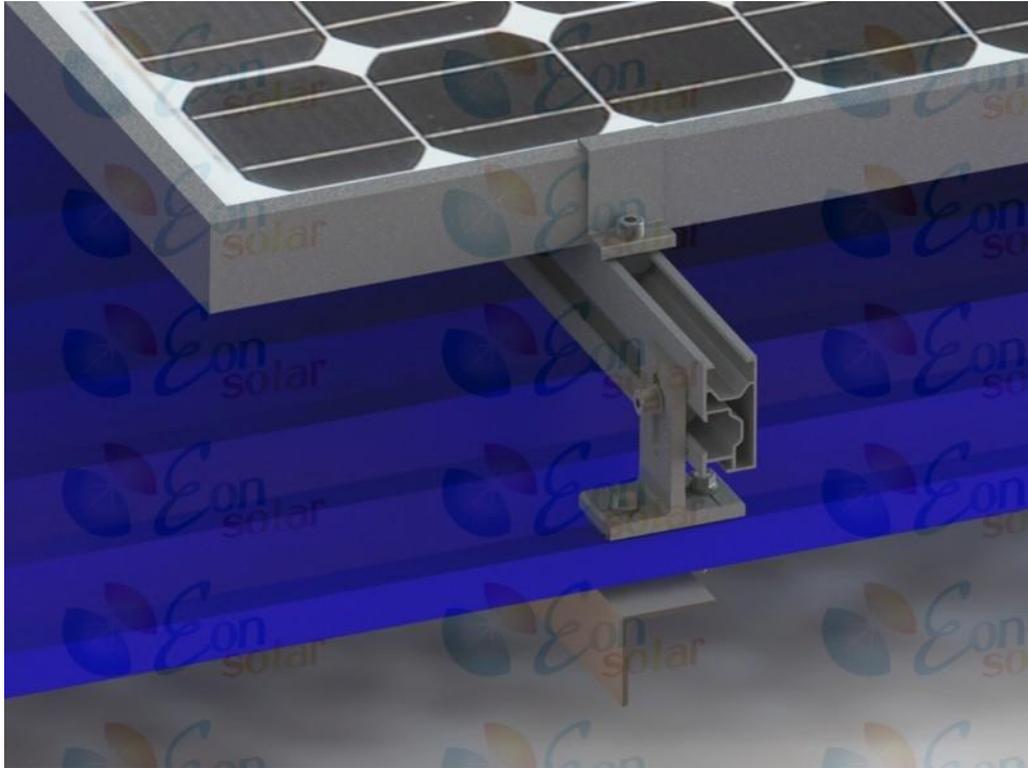
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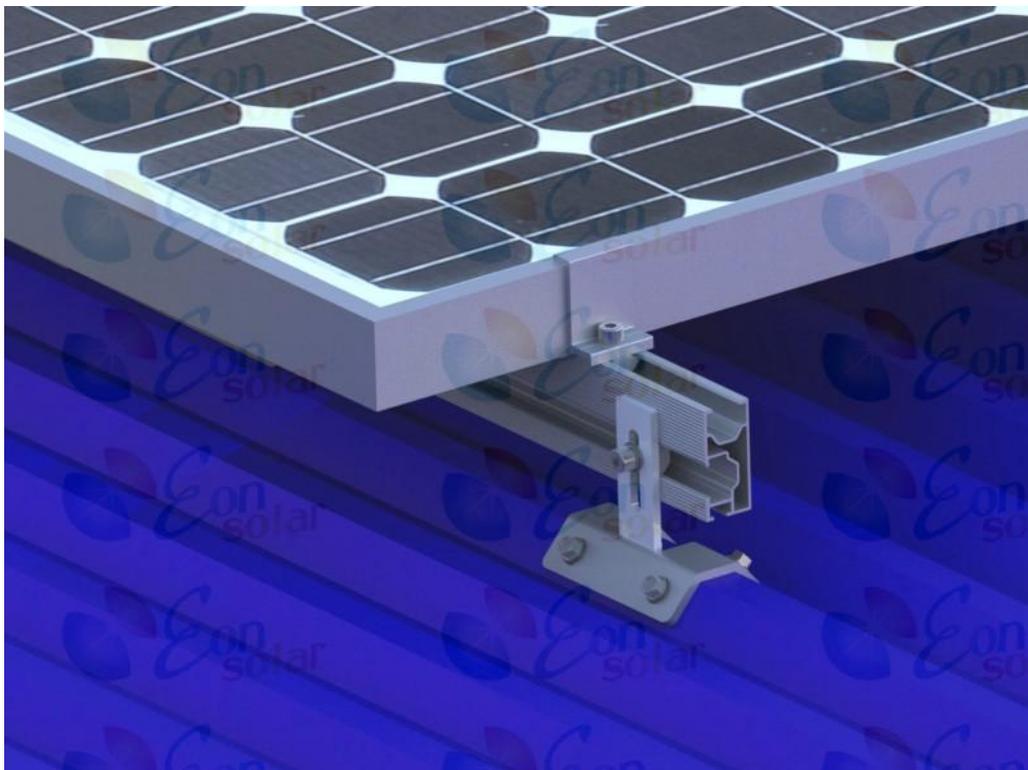
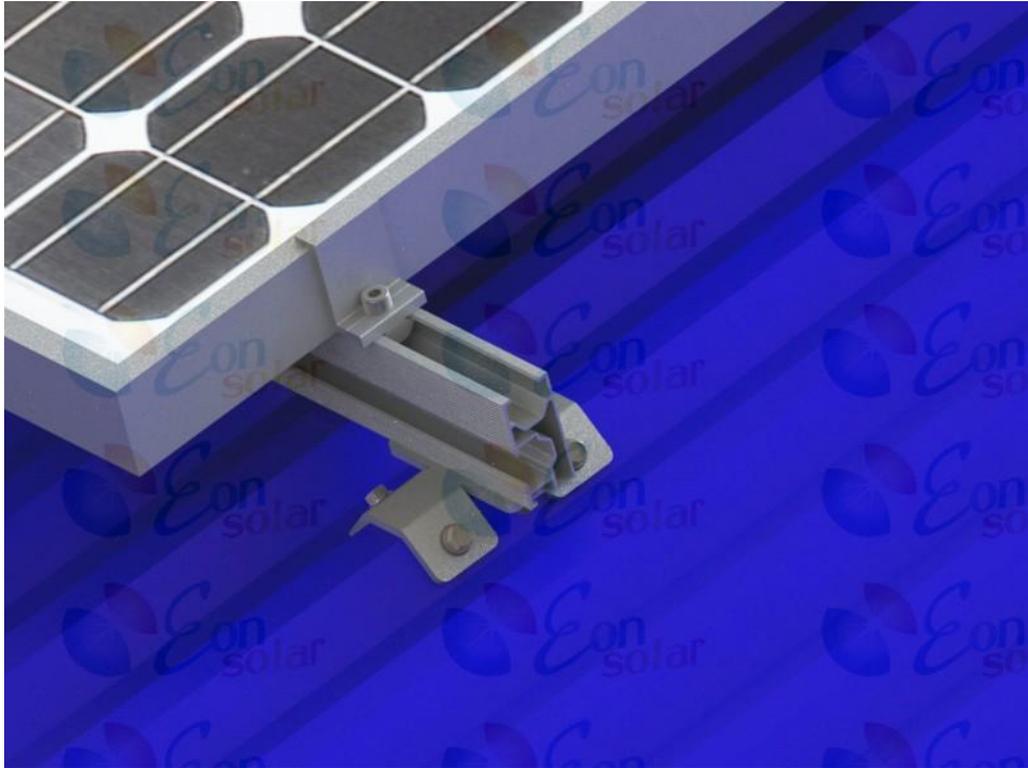
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9. Warranty

8.1 Scope of Warranty

EON Solar guarantees a 10-year warranty for the durability of the components provided that they are correctly mounted, installed and used under normal service conditions. Within the warranty period, EON Solar guarantees that it will replace or repair the defective components immediately or fund the cost of replacement of its discretion provided that expenses are limited to the original sales price.

This warranty is limited to the repair, replacement delivery or refund up to the sales price. These are the exclusive and only services provided by this warranty. The costs for examination and dismantling of the defective component, returning it to EON Solar and re-installation or compensation are excluded from this Warranty. Financial shortfalls resulting from any form of lost payment, in particularly from feed-in-tariffs for the electricity generated, are not covered by this warranty.

The Warranty is only valid if the mounting system has been treated as recommended and/or remained in the photovoltaic system originally installed, or if the PV system has been verifiable dismantled company during a change of location and subsequently got reinstalled in a professional manner.

The warranty period begins from the delivery or pick up date from EON Solar factory or warehouse. The replacement or repair of defective components does not extend the warranty period.

8.2 Exclusion of Warranty

This warranty is invalid if EON Solar, on the conducting its own inspection, establishes that the mounting system was incorrectly installed, put into operation, maintained or was used negligently, was subject to an accident, was damaged through misuse, modification, unsuitable installation or use or was damaged as a result of carelessness during storage, transport or handling. Or mounting system was repaired or changes made in any way by person other than EON Solar or third parties.

Warranty does not apply:

1. Improper installation, maintenance, repair or use of the system
2. Shipment or storage of the system
3. Misuse, modification or unsuitable installation.
4. Damage caused by chemicals, weathering, corrosion and/or other deposits or foreign matter.
5. In the event of damage caused by forces of nature, force majeure and other unforeseeable circumstances such as earthquakes, hurricanes, flooding, volcano eruptions, lighting strikes, snow damage, fires and explosions
6. In the event of vandalism, any other deliberate damage to the mounting frame, or as a result of damage caused by animals.



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