



SimpleBlock-PV

Installation Manual PV MOUNTING SYSTEM FOR STANDING SEAM METAL ROOFS

www.ecofastensolar.com 877-859-3947



REV	NOTES	DATE	INT
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TABLE OF CONTENTS:

- 2. Revision table
- 4. Assets of design & features
- 5. System components
- 6. SimpleBlock-PV Assemblies
- 7. Simple Block-PV Coupling Assemblies
- 8. System layout Installation Guide
- 9. SimpleBlock-PV Installation Instructions
- 10. Typical Array Layout
- 11. Ground Lug Installation
- 12. Rock-It Inverter Clip Installation Instructions
- 13. Grounding information, bonding assembly and bonding path, maintenance jumper bonding path
- 14. Approved modules
- 15. Periodic re-inspections
- 16. Load ratings



ASSETS OF DESIGN & FEATURES

SimpleBlock-PV

Designed with the installer in mind. EcoFasten Solar specializes in solar roof attachments that are fast and easy to install, straightforward, secure and cost-effective. EcoFasten offers a wide variety of standard products as well as custom solutions, for a one-stop source for all of your rooftop anchoring needs. Products are rigorously tested and approved above and beyond industry standards, in-house and by third party agencies. EcoFasten's patented conical sealing system has been in service in the snow guard and solar industries for over two decades.

Features

- •Designed specifically for standing seam metal roofs
- •Fast, easy to install fixed-position mounting
- •Integrated electrical bonding
- Accommodates low profile & high profile mounting
- •SIMPLE- minimal components

EcoFasten Solar products are protected by U.S. Patents: http://www.ecofastensolar.com/pdfs/Patent.pdf



SYSTEM COMPONENTS











SIMPLEBLOCK

SR-X° MID-CLAMP

HARDWARE

SIMPLEBLOCK COUPLING

K SR-X° END SPACER*

TECHINCAL SPECIFICATIONS:

Material Types:

All Extruded Components: 6061-T-6 Aluminum Hardware: 300 Series Stainless Steel

Bonding and Grounding: Integrated into the SR-X° MID-CLAMPS



32MM 35MM 40MM *OPTIOINAL SIZES





SIMPLEBLOCK-PV ASSEMBLY

SimpleBlock-PV Components

- 1. SIMPLEBLOCK
- 2. SR-X° MIDCLAMP
- 3. 0.375-24X0.875 SET SCREWS
- 4. SR-X ° ENDSPACER
- 5. BOLT 0.3125-18X2.25
- 6. FLANGE NUT 0.3125-18

FEATURES:

- Arrives pre-assembled and ready for installation
- Integrated grounding pins in the SR-X° MID-CLAMP for bonding
- Module mounting
- Installation aid
- Aligns leading edge of module





SIMPLEBLOCK-PV COUPLING ASSEMBLY

SimpleBlock-PV Coupling Components

- 1. MLPE-CLIP
- 2. SR-X MIDCLAMP
- 3. FLANGE NUT 0.3125-18
- 4. BOLT 0.3125-18x2.5

FEATURES:

- Arrives pre-assembled and ready for installation
- Integrated grounding pins in the SR-X° MID-CLAMP for bonding
- Connects modules for bonding
- Mounts easily to typical module flange



SYSTEM LAYOUT INSTALLATION GUIDE*

- 1. Determine appropriate array location
- 2. Select starting course
- 3. Mark next row of attachments and repeat for remaining rows
- 4. NS distance equals module width +0.50"
- 5. Locate 1st seam closest to array edge (inside array footprint) and mark
- 6. Find next seam for attachment base on appropriate span and continue marking to end of array
- 7. Span

Ν

S

8. Mark each attachment point for array on seams.

*Modules must be installed in landscape orientation only.



SIMPLEBLOCK-PV INSTALLATION GUIDE



Lift up on SimpleBlock until lip engages folded seam on roof



Install SimpleBlock-PV to standing seam metal roof

- Attach to standing seam per manufacturer instructions
- Tighten set screws to 150 inch/lbs using x/xx Allen head bit
- Verify proper row to row spacing for module size (Mod NS + 0.50")
- Ensure that SimpleBlock-PV roof attachments in each row have sufficient engagement with the standing seam for proper attachment.





SIMPLEBLOCK-PV COUPLING INSTALLATION GUIDE

Install SimpleBlock-PV to standing seam metal roof

- Attach coupling to panels by sliding coupling between the two panels and tighten to 150 in/lbs
- Couplings should be placed N & S between panels
- Bonding pins must engage panels for proper bonding path
- See next page for layout







GROUNDING LUG INSTALLATION GUIDE



Necessary Components:

- Burndy CL50-1TN Ground Lug (UL Listing #KDER.E9999)

Note: Drill and deburr hole in Ground Lug prior to installation

- 14 AWG 4 AWG Copper Ground Wire* 8-32 x
- 0.5" Serrated Flange Head Bolt (300 Series SS)
- 8-32 Serrated Flange Nut (300 Series SS)

- 11/32" and 1/4" wrenches or ratchets/sockets

Installation Instructions:

1 Insert the flange bolt into the module ground hole. Place Ground Lug over the bolt and turn to desired orientation.

- 2 Install Flange Nut.
- 3 Tighten Flange Nut/Bolt.

4 Place wire in Ground Lug channel and tighten set screw to complete assembly.

Torque Values: 14-10 AWG= 20 in-lbs. 8 AWG= 25 in-lbs. 6-4 AWG= 35 in-lbs.

Wire should be sized in accordance with the National Electrical Code, NFPA 70, Section 690.45, and a minimum of 1/4" clearance required between bare copper wire and aluminum.



OPTIONAL ROCK-IT INVERTER CLIP INSTALLATION GUIDE



1 Locate all parts

•Locate the Rock-It Clip SS, micro-inverter/power optimizer, and the section of the module frame in which you will be mounting the micro-inverter/power optimizer. See fig. A for acceptable mounting locations.

2 Install the Rock-It Clip SS

Slide the Rock-It Clip SS onto the lip of the module frame.

Slide the micro-inverter/power optimizer into the opposite lip of the Rock-It Clip SS.

Tighten the bolt to 20 ft-lb to clamp the Rock-It Clip SS to the module frame and the microinverter/power optimizer to the Rock-It Clip SS.

Ensure that the lip on the clip is tight against the frame and that the micro-inverter/power optimizer flange is tight against the Clip flange to avoid rotation during tightening.



Grounding Information The SimpleBlock-PV System may be used to mount and ground PV modules that comply with UL 1703, only when that specific module has been evaluated for mounting and grounding, in compliance with the included installation instructions.

Note: Grounding lug must be visible to inspectors from the entire perimeter of the PV array.

Bonding Assembly and Bonding Path



Multiple Use Grounding Pins

Grounding pins within the Mid-Clamp are multiple use bonding/grounding devices. Modules will need to be adjusted if the Mid-Clamps are loosened to ensure there is "new" metal for the grounding pins to pierce into upon retightening.

Grounding Method

Each row of modules bonds E-W through the Mid-Clamps and End Clamps. One Burndy CL50-1TN ground lug is required per row of modules, limited to 300 modules, placed in landscape orientation.



Maintenance Jumper Bonding Path





MODULE COMPATIBILITY

The SimpleBlock-PV System may be used to ground and/or mount a PV module complying with UL 1703 only when the specific module has been evaluated for grounding and/or mounting in compliance with the included instructions.

Make	Models
Hanwha Q Cells	Modules with 32mm frames
Recom Solar	Modules with 35mm frames
Trina	Modules with 35mm frames
Jinko	Modules with 40mm frames



PERIODIC RE-INSPECTIONS

Periodic re-inspection for loose components

The system is subject to re-inspection as required by the PV module manufacturer or by the Authority Having Jurisdiction (AHJ). Re-inspection, as required, should include evaluation of any loose components or loose fasteners. All loose components and fasteners should be secured in accordance with these instructions. The system should also be evaluated for any evidence of corrosion. Any corrosion should be removed. Any affected part should be cleaned or replaced in accordance with these instructions.



LOAD RATINGS

Rating Details

Max no. of panels:	300 Modules per ground lug	Materials :	300 Series Stainless 6000 Series Aluminum
Max System Voltage:	1000VDC	Coating:	Mill Finish
Fire Rating:	Not Fire Rated	Lug Specifications:	Burndy CL50-1 TN Ground lug (UL Listed # KDER E9999)
Min/Max Roof Slope:	1/2:12/12:12	Max Down force/Uplift Rating:	30 PSF
SimpleBlock Load Rating:	1,980 lbs with two 3/8" Set Screws, 3.0 Safety Factor	Warranty:	10 Year Material and Workmanship

Application of Ultimate Loads/Capacities

The capacity of the Simple Block clamp is dependent on the roofing material and type to which it is fastened. The roofing type and material used in tests is noted in SimpleBlock Ultimate Capacity Laboratory Test. Appropriate factors of safety should be determined and applied by the design professional or qualified personnel to the noted ultimate values based on the specific circumstance and application, but under NO circumstance should the factor of safety be less than 2. The metal roofing must be adequately attached to the supporting roof system/structure to resist loads. The loads applied to the SimpleBlock clamp will be transferred to the roofing material and supporting members. Said roofing material and supporting members and their attachments must be designed or analyzed accordingly. The SimpleBlock is NOT approved for use as a fall restraint device.

For more information refer to SimpleBlock Ultimate Capacity Laboratory Test Results on our web page.