EcoFasten
For Installers. **By Installers.**

ROCKIT®

COMPLETE RAIL-LESS RACKING SYSTEM

INSTALLATION GUIDE

REVISION DATE: 12/02/22	**VERSION:** v3.1

ECOFASTENSOLAR.COM

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ROCKIT

The RockIt system conforms to UL 2703 and is the industry's premier rail-less PV racking system for composition shingle, tile, and metal pitched rooftops. Designed in conjunction with installers, RockIt quickly & easily installs with a single tool. It features an easy-to-position mount alignment and a top-down leveling system. RockIt is logistically intelligent with no need to ship or transport long rails. Components are available in a black finish that compliments both commercial and residential applications.

FEATURES

- Patented Watertight Technology
- Fully integrated bonding
- Top-down leveling system
- North-South adjustability
- Single tool install

FEATURES + BENEFITS

ROCKIT

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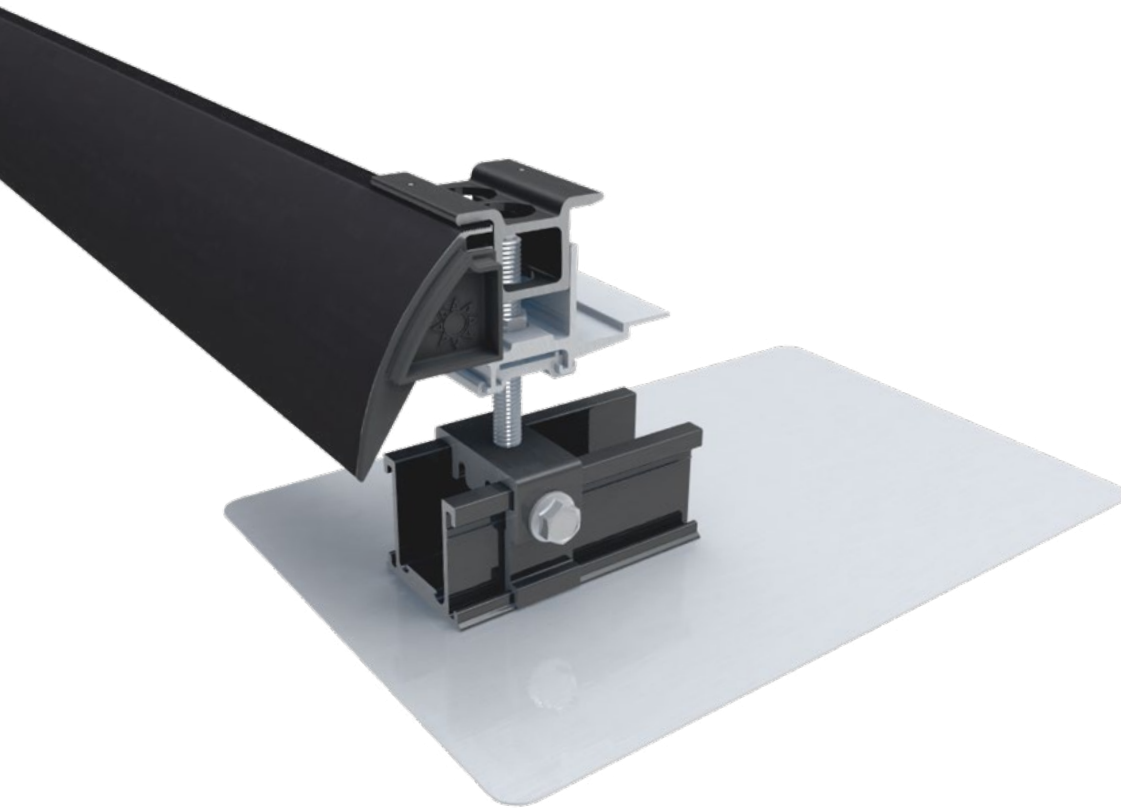
SYSTEM SPECS

ROCKIT SYSTEM SPECIFICATIONS			
Leveling Range	3"– 4" off the roof	**Coupling Box Qty**	24 units
Slide Comp/Steel N-S Range **Slide Tile N-S Range**	3" 7"	**Materials**	300 series stainless steel, 6000 series aluminum
Skirt Box Qty	8 units	**Finish**	Black anodization/Mill finish
Mount Box Qty	24 units	**Slide Fastening Hole**	5/16" diameter
Warranty	25 year material and workmanship		

PLEASE NOTE: Review module and any third-party manufacturer's documentation for compatibility and compliance with warranty terms and conditions.

WARNING: This product must be installed and used according to this written instruction. Any installation or use of this product not in accord with or not authorized by this written instruction shall void any and all warranties, express or implied, on the product or the use of the product and may cause failure, property damage and personal injury. EcoFasten is not liable for any unauthorized use. Install and use only with other EcoFasten products to ensure proper fit and function.

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SYSTEM COMPONENTS REQUIRED

COMPOSITION SHINGLE ROOFS

GF-1 FLASHING

COMP SLIDE

ROCKIT MOUNT

ROCKIT COUPLING

SMART SLIDE & SCREW

TILE ROOFS

TF-FLAT SIERRA TAN

TF-W SIERRA TAN

TF-S SIERRA TAN

TILE SLIDE

TILE BASE-FLAT LITE
(Flat, W and S to match flashing profile)

METAL ROOFS

STEELDECK SLIDE

SELF PIERCING SCREW

SIMPLEBLOCK-U

SKIRT & SKIRT CAP
PORTRAIT & LANDSCAPE IN 32MM & 38MM OR 35MM & 40MM

SYSTEM COMPONENTS ACCESSORIES

MLPE MODULE MOUNT

J-BOX COMP BRACKET

CONDUIT BRACKET - COMP

CONDUIT BRACKET - TILE

COMPONENTS

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RATINGS

Fire Ratings	Class A* and B** System Fire Rating
Max System Voltage	1500V
Max Fuse Rating	40A
Certification	Conforms to UL STD 2703
Markings	Product listing label is located on RockIt Mount
Roof Pitch	2:12 - 21:12
UL 2703 Allowable Design Load Rating	30 psf downward, 30 psf upward and 20 psf lateral
Max Module Size	24 sq. ft.
Maximum Cantilever	1/3 of span
Maximum Span	6 ft Landscape, 4 ft Portrait
Multiple use Rated Components (Position Independent)	RockIt Mount, RockIt Coupling & MLPE Module Mount

*Class A System fire rating with Type 1, 2, and 29 PV modules with no skirt required. Class A System fire rating with Type 4 and 5 modules with south edge skirt required. Any roof-to-module gap is permitted. This rating is applicable with any roof attachment.
**Class B System fire rating with Type 4 and 5 modules, no skirt required. Any roof-to-module gap is permitted. This rating is applicable with any roof attachment.
***Modules with flange widths shorter than 22mm cannot be installed in portrait.

UL 2703 MARKING EXAMPLE:
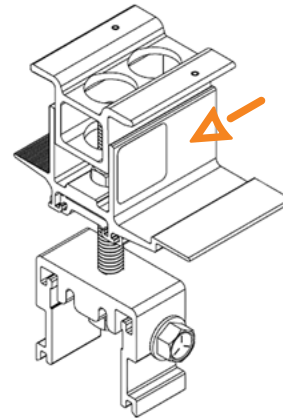
TORQUE SPECIFICATIONS

| Component	Torque (in-lb)	Notes
Lag Screws	N/A	Fully Seat. Use visual indicator of the black EPDM ring around the bonded washer for torquing.
Mount	200	
Coupling	200	
Steeldeck Slide Screw	N/A	Fully Seat. Use visual indicator of the black EPDM ring around the bonded washer for torquing.
MLPE Module Mount	144	
Ground Lug	N/A	Refer to specific ground lug manufacturer's installation manual
RockIt Pedestal Screw	150	

System components should be periodically re-inspected for loose components, loose fasteners, and corrosion such that if found, the affected components are to be immediately replaced.

RATINGS

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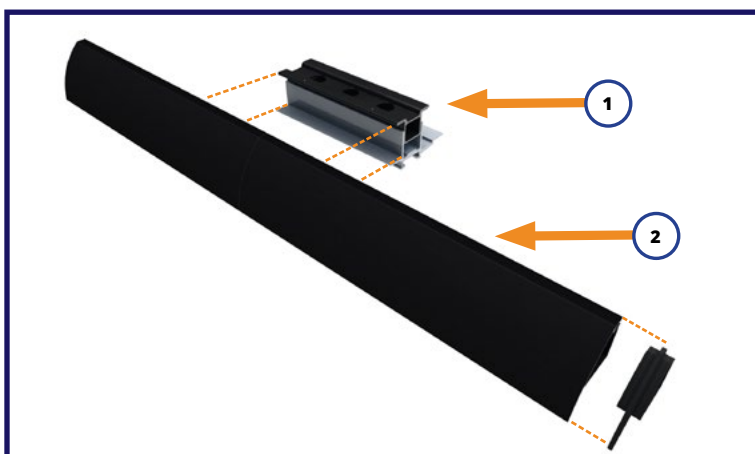For Installers. **By Installers.**

ASSEMBLING ROCKIT
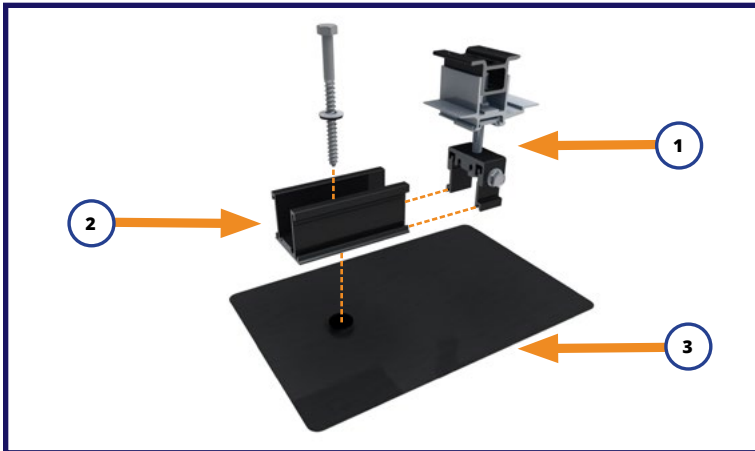
ROCKIT FOR COMPOSITION MOUNT ASSEMBLY

1. 2011012 - RI MOUNT

2. 2011013 - RI COMP SLIDE AL BLK with lag screw & 5/16" EPDM bonded washer

3. 3012010 - GF1 FLASHING GLV BLK 8X12" or 3012020 - GF-1 FLASHING GLV BLK 8X10"
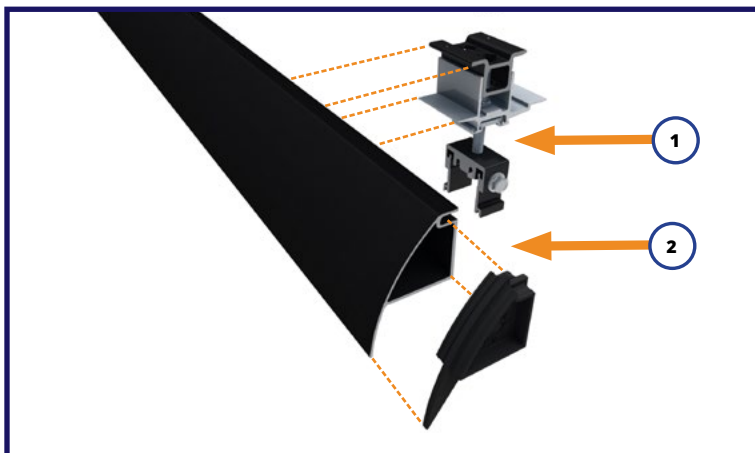

ROCKIT MOUNT ASSEMBLY WITH ARRAY SKIRT

1. 2011012 - RI MOUNT

2. SKIRT AL BLK - Portrait & Landscape - 32MM&38MM or 35MM&40MM mid clamp cap & skirt end cap


ROCKIT COUPLING ASSEMBLY WITH ARRAY SKIRT

1. 2011011 - RI COUPLING AL BLK

2. SKIRT AL BLK - Portrait & Landscape - 32MM&38MM or 35MM&40MM mid clamp cap & skirt end cap

ASSEMBLY

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ASSEMBLING ROCKIT
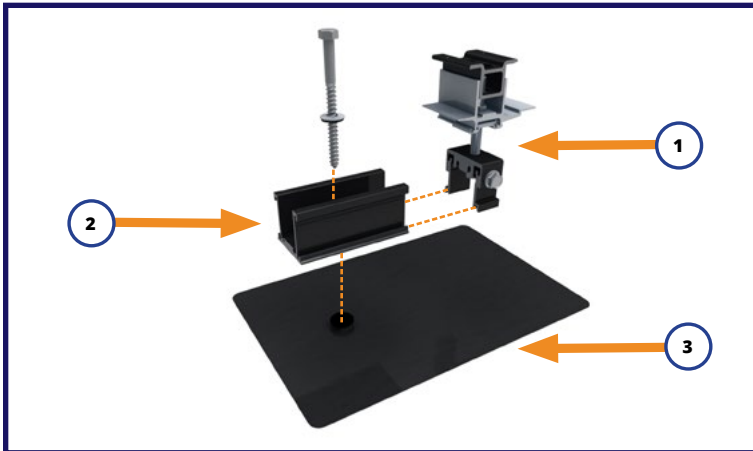
ROCKIT FOR COMPOSITION MOUNT COMP

1. 2011012 - RI MOUNT
2. 2011013 - RI COMP SLIDE AL BLK with 4" lag screw & 5/16" EPDM bonded washer
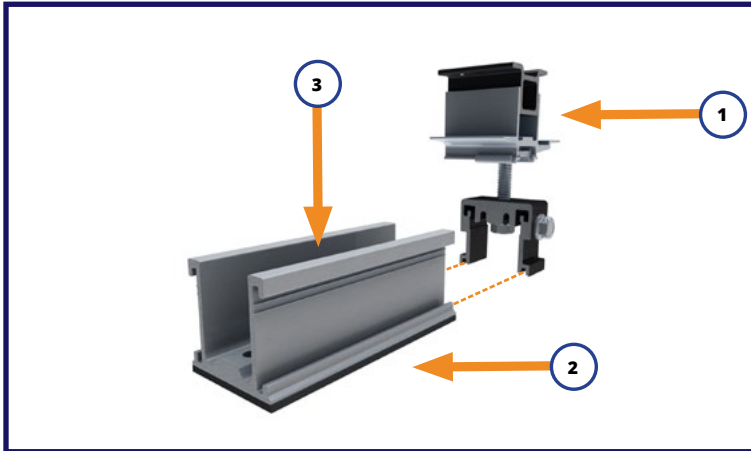3. 3012010 - GF1 FLASHING GLV BLK 8X12" or 3012020 - GF-1 FLASHING GLV BLK 8X10"
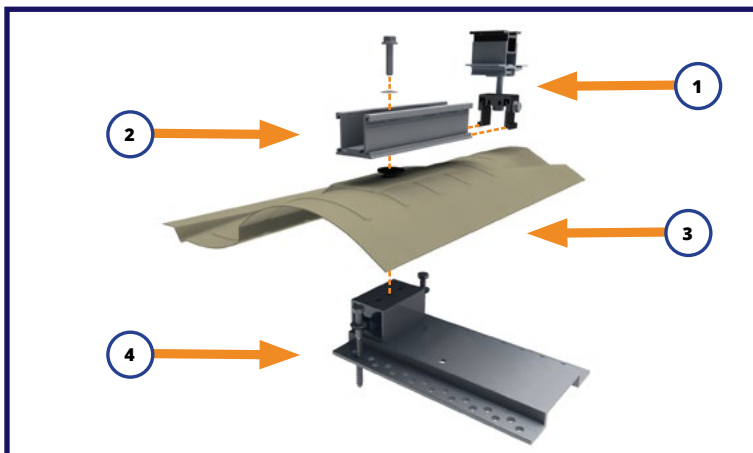
ROCKIT FOR S TILE MOUNT ASSEMBLY

1. ROCK-IT MNT - ROCK-IT MOUNT BLK
2. ROCK-IT SLIDETILE - ROCK-IT SYSTEM SLIDE TILE 8"
3. TF-S SIERRA TAN - TILE FLASHING S-SIERRA TAN
4. TILE BASE-S LITE - TILE BASE-S LITE ASSEM

ASSEMBLY

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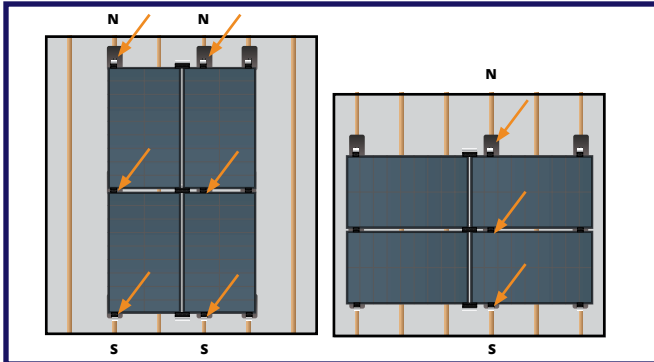# ASSEMBLING ROCKIT

ROCKIT STEEL - MOUNT ASSEMBLY

1. ROCK-IT MNT - ROCK-IT MOUNT BLK

2. ROCK-IT STEELDECK SLIDE

3. ROCK-IT SELF PIERCING SCREW

ROCKIT SMART SLIDE - MOUNT ASSEMBLY

1. SMART SLIDE

2. #12, 3" SCREW

ASSEMBLY

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MODULE SPACING

STRUCTURAL ATTACHMENT POINTS
- Find the required structural attachment points.

SPACING
- Spacing may vary depending upon project specific structural requirements: i.e. high snow and wind load areas may require lesser bracket spacing in the E-W axis vs. the maximum spacing.
- Max spacing is 48" OC for portrait orientation and 72" OC for landscape orientation.
- Consult project layout diagram for project specific bracket spacing on the roof.
- Install RockIt mounts to predetermined mount spacing.
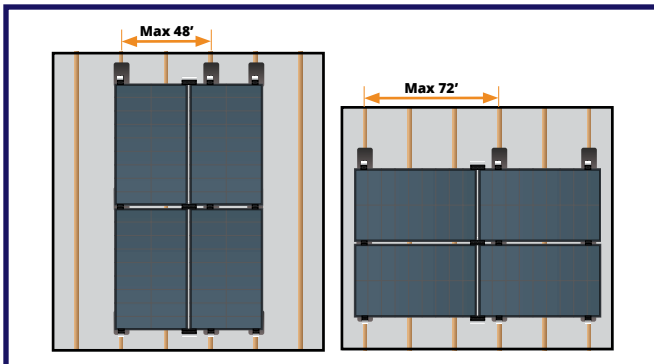
ARRAY SKIRT SECTIONS
- The RockIt array skirt sections are the width of a typical 60 cell module.
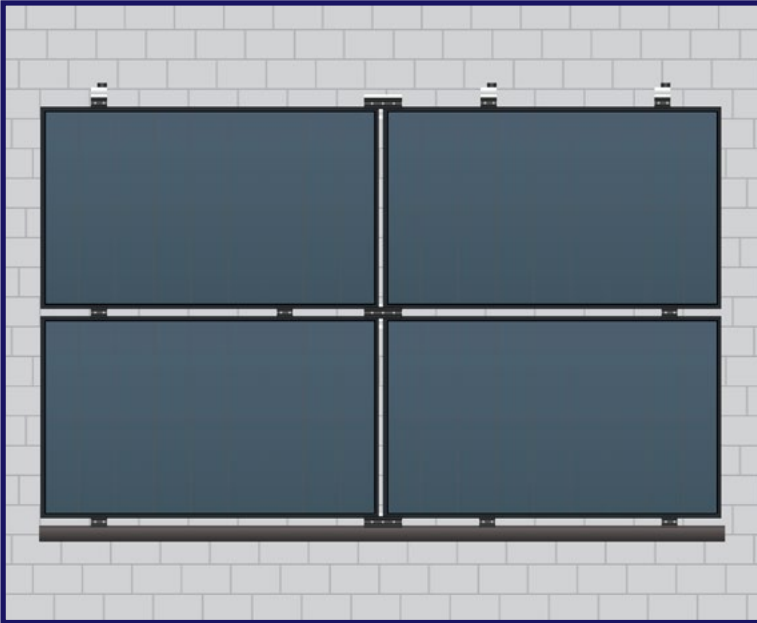- Use the RockIt array skirt as a guide to lay out module placement.
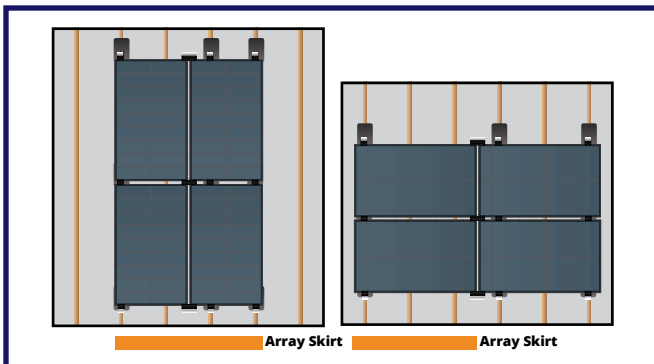
THE DISTANCE
- The distance between the rows of mounts is calculated by the module dimension N-S plus 1 5/16".
- Lag screw should be installed as close to center of exposed shingle as possible.

PLACEMENT

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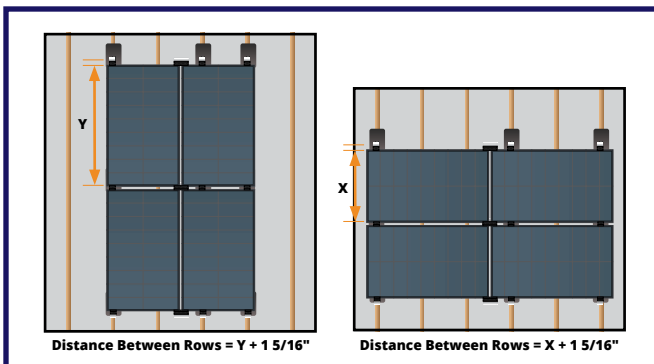
MOUNT PLACEMENT

STAGGERED LAYOUT WITH STAGGERED MOUNTING POINTS

- The array layout instructions in this installation manual offer a general overview of the layout. Periodically, due to a variety of factors (roof obstacles, shading, etc.) other layouts are required.

  RockIt Mount

  RockIt Coupling
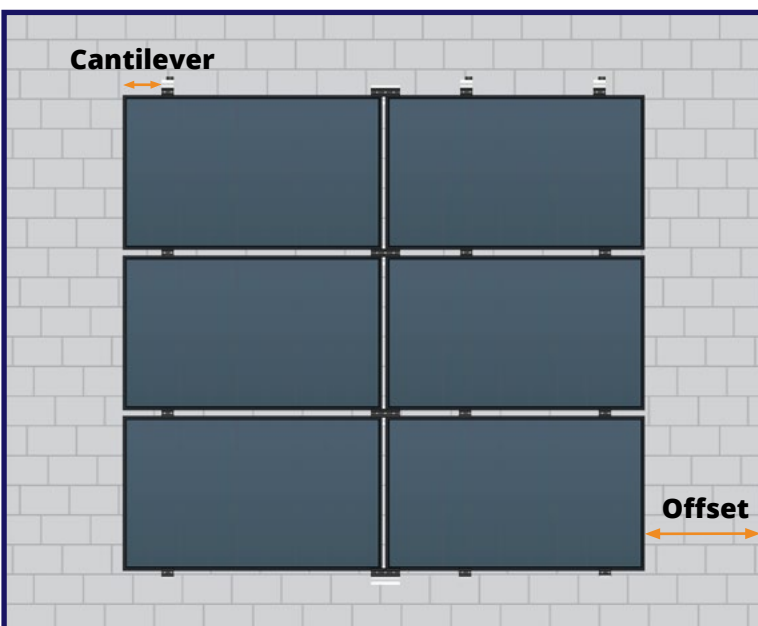
CANTILEVER & OFFSET

- Cantilever: Maximum cantilever is 1/3 bracket spacing. For portrait orientation installations, check layout prior to installing.
- Offset: offset from all roof edges depends on wind speed, snow loads, local fire and building codes per location.

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FLASHING & COMP SLIDE INSTALLATION

1 SNAP LINES
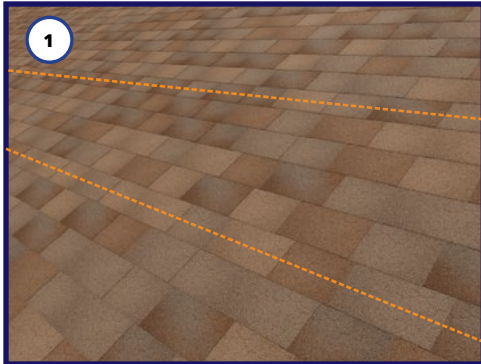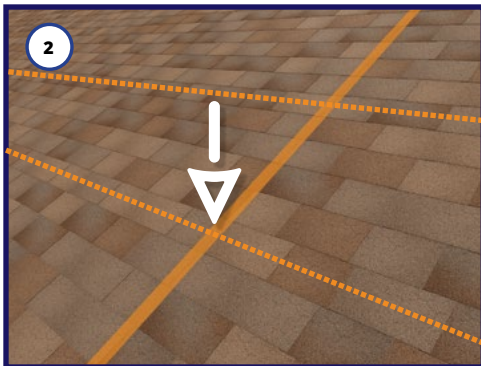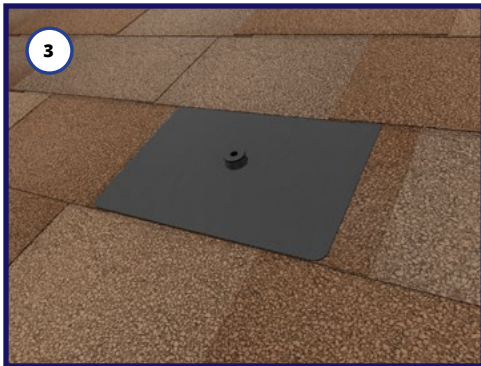Locate the rafters and snap horizontal lines to mark the installation position for each GF-1 flashing.

2 PILOT HOLE
Drill a 7/32" pilot hole into the rafter or structural member for the lag screw. Backfill with sealant compatible with the roof type.

3 INSERT FLASHING
Slide flashing up under the next row of shingles directly above the pilot hole, taking care to align the hole in the flashing with the pilot hole
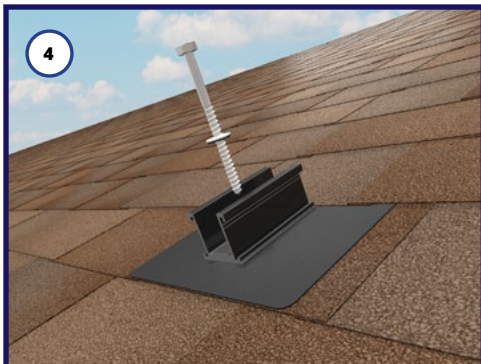
4 INSERT LAG BOLT
- Line up pilot hole with flashing hole.
- Insert the lag bolt through the EPDM bonded washer, the RockIt comp slide, the gasketed hole in the flashing and into the rafter.
- Torque: The range is between 100-140 torque inch-pounds depending on the type of wood and time of year. The visual indicator for proper torque is when the EPDM on the underside of the bonded washer begins to push out the sides as the washer compresses. If using an impact wrench to install the fasteners be careful not to over torque the fastener. You may need to stop and use a ratchet to finish the install.

*The Engineer of Record shall check capacity of rafter to support lag screw loading.

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SMART SLIDE INSTALLATION

ARRAY POSITIONING

EcoFasten's RockIt Smart Slide positioning is slightly different than our traditional GF-1 flashing and Comp Slide positioning. Instead of selecting your shingle course and marking 2-3" above the bottom edge of that course, you will now use the shingle overlap as your starting position to snap your first chalk line (See image below). We still recommend snapping chalk lines at every row to make sure every installation is completed with confidence and easy. After chalk lines have been snapped for each row, being as precise as possible, locate the rafters within the array making sure to follow the span chart and cantilevers.

NOTE: FOR ALL ROCKIT INSTALLATIONS THE N-S DISTANCE BETWEEN CHALK LINES WILL REMAIN THE SAME AT MODULE HEIGHT + 1 AND 5/16".
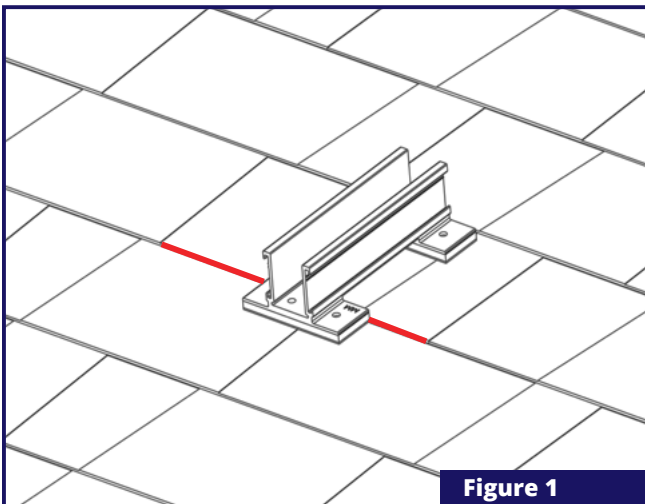
Figure 1

PLACING THE SLIDE

NOTE: BEFORE INSTALLATION, CHECK THE ROOFING MATERIAL QUALITY FOR BEST INSTALLATION PRACTICES. ONLY INSTALL ON CLEAN ROOFS FREE OF SNOW OR ICE. IF INSTALLING ON PRESIDENTIAL SHINGLES OF RARE THICKNESS OVER 0.100", CUT OFF THE SHINGLE TABS TO ENSURE THE SLIDE LIES FLAT.

Once the general location of each rafter is marked, clean the mounting location with a nylon brush for proper sealing. Before peeling off the release liners, please note the Smart Slide is designed to straddle the two shingle courses. It is important to make sure the bottom foot is flush and pushed up against the shingle course edge above (see figure 1). When you understand the general location of the rafter and slide, peel off the two release liners and place the slide within the chalk line over the general location of the rafter being as precise as possible cantilevers.

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SMART SLIDE INSTALLATION
SCREW PLACEMENT & DRIVING THE SCREWS

NOTE: ONCE THE SLIDE IS IN POSITION, IT WILL BE DIFFICULT TO REMOVE CLEANLY WITHOUT LEAVING ANY SEALANT ON THE ROOF. WHEN RAFTER MOUNTING, FOR ANY SCREWS THAT MISS THE RAFTER, DO NOT REMOVE THOSE SCREWS. ROCKIT SMART SLIDE IS DESIGNED TO GIVE THE INSTALLER MULTIPLE OPPORTUNITIES TO FIND THE RAFTER MAKING

With the slide in position, start by utilizing the center 4 screw locations between the vertical walls in the slide. In a perfect installation, the rafter should be aligned and parallel with the vertical walls of the slide. A, B, and C will now go over perfect, ideal, and acceptable installation methods.

NOTE: DO NOT REMOVE ANY SCREWS THAT HAVE MISSED THE RAFTER.

Figure 2

| CORRECT INSTALL | TILTED | NOT ENOUGH TORQUE | TOO MUCH TORQUE |

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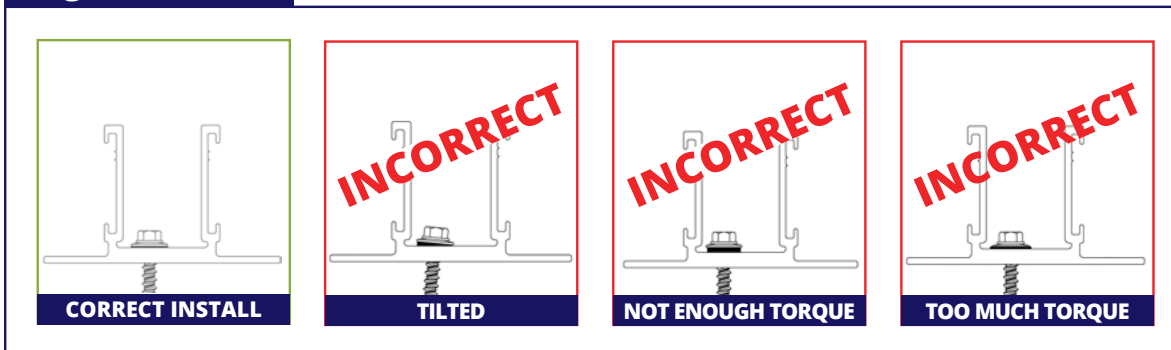
SMART SLIDE INSTALLATION

SCREW PLACEMENT

A. PERFECT INSTALLATION - Starting at the north end of the slide, ideally from left to right in the center 2 holes, drive the first screw down until the washer is correctly compressed to the base (as shown in figure 2). If a rafter is hit with the first screw, the second screw can immediately be driven directly below in the south end of the slide making sure the bonding washer is again, correctly compressed. No additional screws are needed if the first 2 screws hit the rafter (see figure 3)

B. IDEAL INSTALLATION - If the rafter is missed with the first screw as shown in figure 4 by the red circle, drive a second screw through the adjacent center north hole. If the rafter is hit with the second screw, the third screw can immediately be driven directly below in the south end of the slide making sure the bonded washer is again, correctly compressed. No additional screws are needed if the 2nd and 3rd screw hit the rafter. NOTE: Do not remove any screws that did not hit the rafter.

C. ACCEPTABLE INSTALLATION - In all installations when the rafter is hit on either end of the slide, all 8 screws must be installed. (See figure 5)

D. MISSED RAFTER - If a rafter is missed completely within the slide, you must add another slide to the previous rafter. You may then continue with your job specific attachment spans (See figure 6).

Figure 3

Figure 4

- ⬛ (dashed orange) **RAFTER**
- 🟢 **RAFTER HIT**
- 🔴 **RAFTER MISS**
- # **ATTEMPT NUMBER**

INSTALLATION

PAGE
14

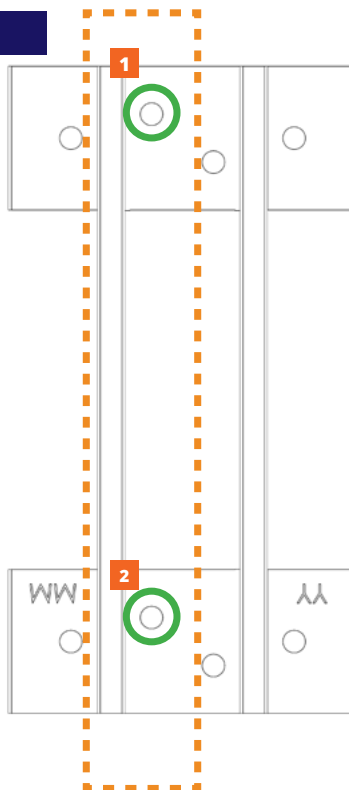**ROCKIT**
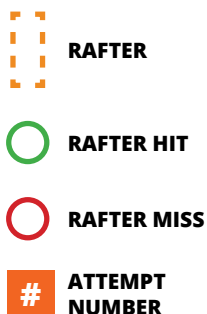INSTALLATION GUIDE

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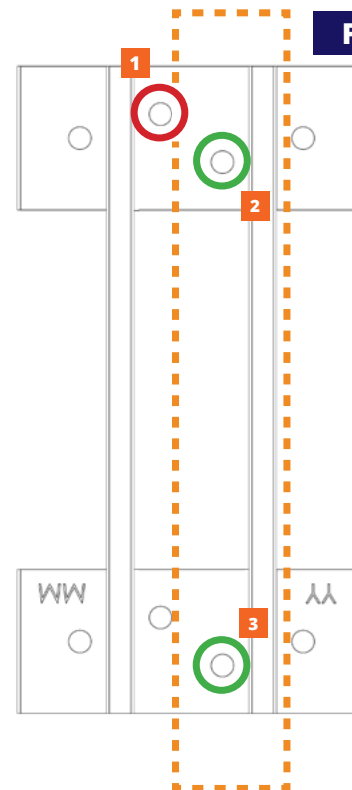
SMART SLIDE INSTALLATION

ACCEPTABLE INSTALLATION

Figure 5

RAFTER

RAFTER HIT
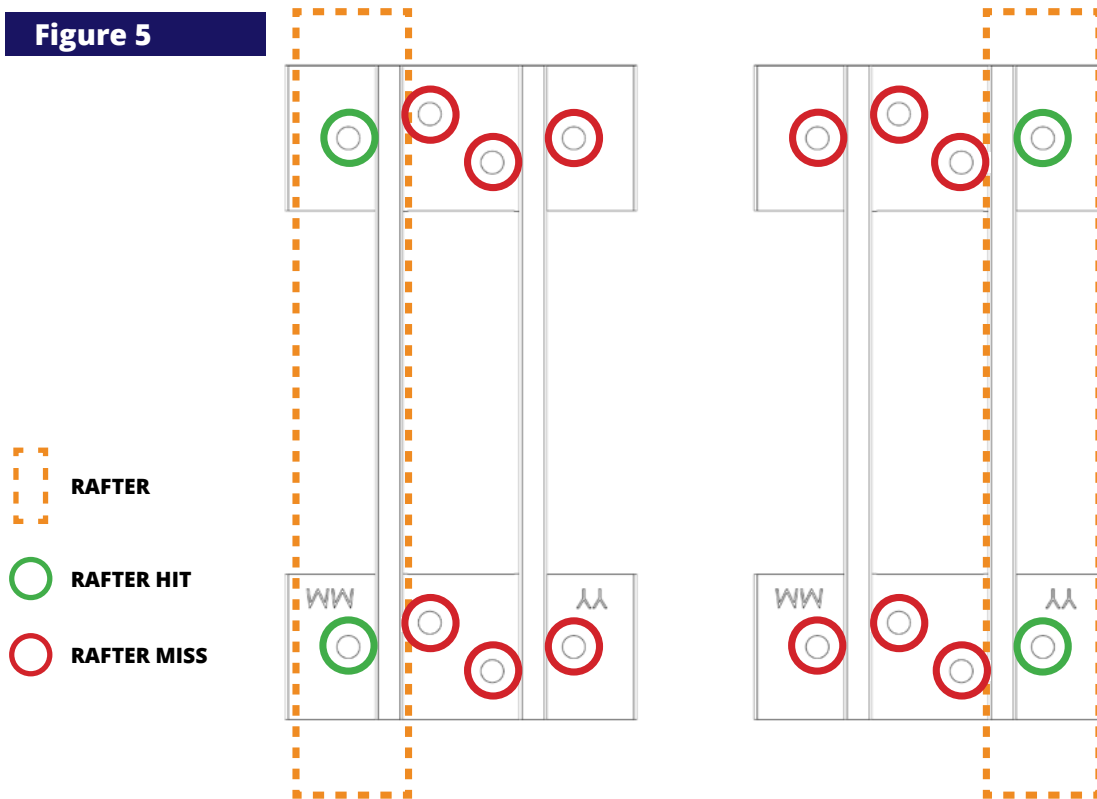
RAFTER MISS

NOTE: DO NOT REMOVE ANY SCREWS THAT HAVE MISSED THE RAFTER. ROCKIT FLASHLESS IS DESIGNED TO GIVE THE INSTALLER MULTIPLE OPPORTUNITIES TO FIND THE RAFTER MAKING INSTALLATION QUICK AND THOUGHTLESS.

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SMART SLIDE INSTALLATION

Figure 6
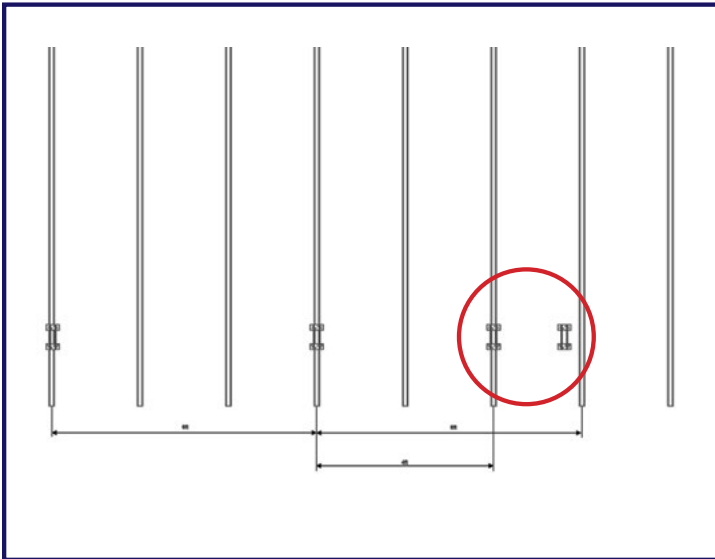
NOTE: IF A RAFTER IS MISSED COMPLETELY WITHIN THE SLIDE, YOU MUST ADD ANOTHER SLIDE TO THE PREVIOUS RAFTER.

BUTT JOINTS

Apply a bead of roof sealant over any exposed butt joints north (upslope) of a mounting foot.

Please reference our approved sealant list posted on our website.

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SYSTEM INSTALLATION

① INSTALL ECOFASTEN FLASHING WITH ROCKIT MOUNTS

- Follow EcoFasten installation instructions for flashings and brackets.
- Optimum vertical distance between lag bolts is 1 5/16" plus module dimension.
- Set mounts on eave most row so that the RockIt pedestal is on the South end of RockIt slide.
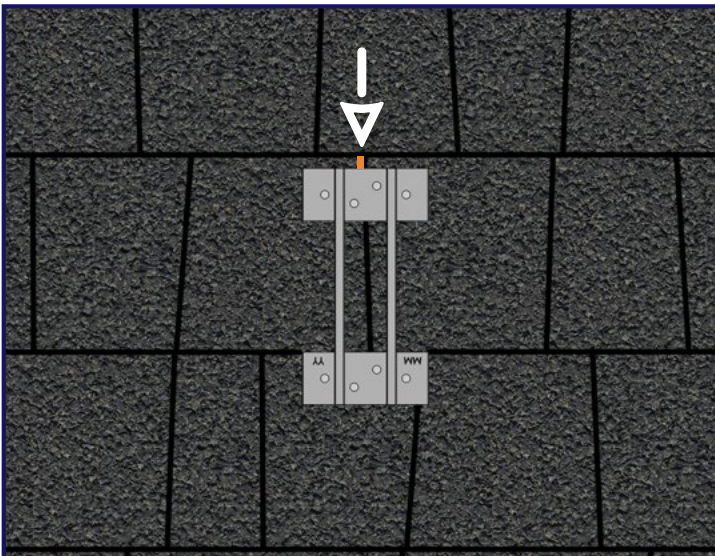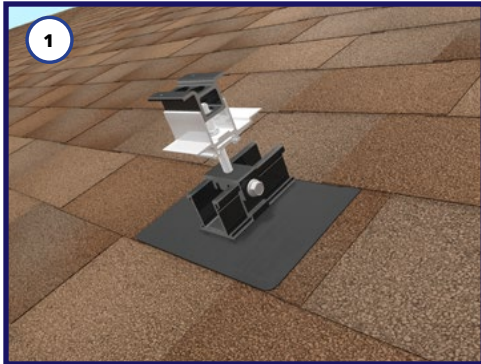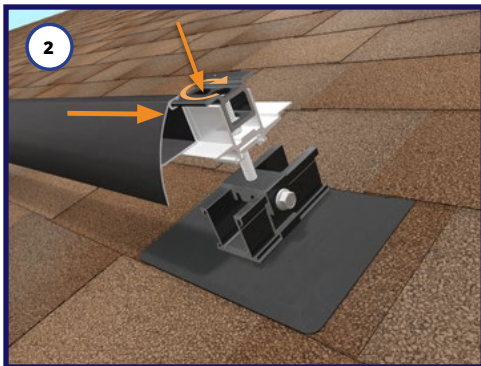- Set mounts on all upper rows to the North end of RockIt slides.

② INSTALL ROCKIT ARRAY SKIRT ONTO EAVE MOUNTS

- Slide RockIt array skirt into front channel on RockIt shelf.
- Tighten mid clamp bolt, clamping RockIt array skirt to mount. There are three options for skirts: **A**, **B** and **C**. The **A** & **B** skirts can be identified by looking at the inner channel, if it's ribbed then it is a **B skirt** and will use 32mm (inner channel) and 38mm utilizing the top of the skirt. A skirts will have a smooth inner channel and use 35mm (inner channel) and 40mm utilizing the top of the skirt. **C skirts** will only use 30mm skirts and do NOT have an inner channel.
- Torque to 200 in-lb.
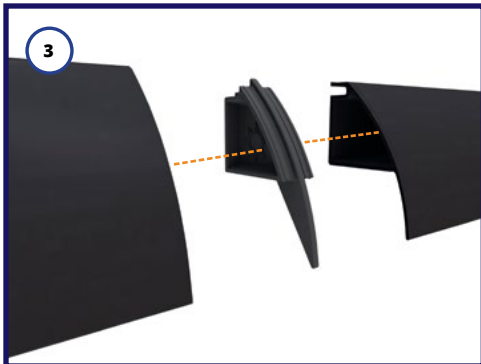
③ INSTALL ROCKIT ARRAY SKIRTS WITH END CAPS

- Array skirt end caps are pre-installed on the East end of each skirt section, and are used to couple the skirt sections where needed.
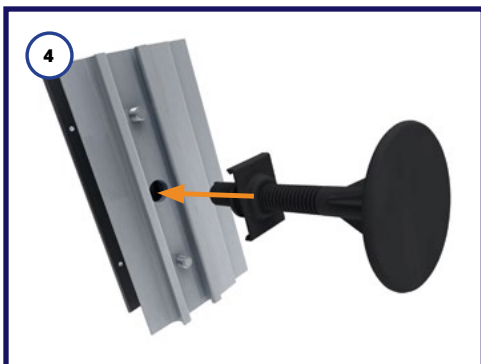
④ OPTIONAL: INSTALL COUPLINGS WITH A LOAD BEARING FOOT

- Prior to mounting on the roof, snap the bearing foot into the bottom of the RockIt coupling.
- Each load bearing foot is set to the same height as the RockIt mounts - adjust accordingly.
- Use a load bearing foot when joining 4 panels with a coupling.
- Use for additional support in higher snow load areas. This is not an attachment into the roof.

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SYSTEM INSTALLATION

5 **INSTALL ROCKIT COUPLINGS AND ARRAY SKIRT**
- On eave row only, slide RockIt array skirt onto RockIt coupling shelf.
- Torque to 200 in-lbs.

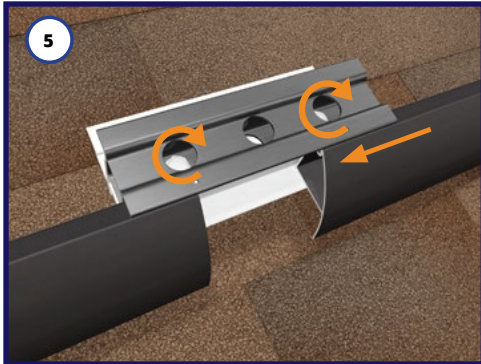**6** **ALIGN & STRAIGHTEN 1ST ROW WITH ROCKIT ARRAY SKIRT**
- Refer back to pg. 7, prior to starting this step.
- Use North-South adjustment of the RockIt Pedestal to straighten RockIt array skirt.
- Torque screw on side of RockIt pedestal to 150 in-lbs to secure it to the RockIt slide. The first row of RockIt mounts and array skirts should be level and aligned, with panel gaps evenly spaced before installing the level nut caps.
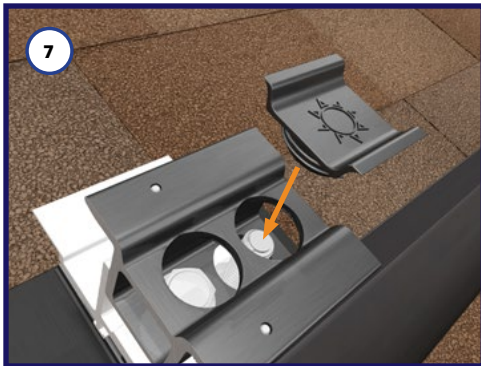
7 **INSTALL LEVEL NUT CAPS**
- Adjust flange level nut to level the system and install one level nut cap into the hole directly over the level nut on each RockIt mount mid clamp. This is to prevent accidental adjustment.
- If further leveling of the first row of panels or array skirt is required after the installation of the level nut caps, remove the mid clamps using the accessible bolt, reinstall the mid clamps with the level nut caps already installed, and re-level.

  NOTE: DO NOT REMOVE LEVEL NUT CAPS AFTER THEY HAVE BEEN INSTALLED IN THE ROCKIT MOUNT MID CLAMPS.

8 **INSTALL 1ST ROW OF PV MODULES**
- Place the modules into the first row of RockIt mounts and couplings at a 45 degree angle. Lower the modules until parallel to the roof. Confirm the modules are fully seated and then slide upslope mounts down to engage with the top frame of the module.
- Gap between modules (East/West) should be 1/2".

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SYSTEM INSTALLATION

9 **INSTALL 2ND ROW OF ROCKIT ROCKIT MOUNTS & COUPLINGS**

Install RockIt couplings on the upslope side of 1st row of panels.

10 **INSTALL 2ND ROW OF ROCKIT MOUNTS**

Torque 2nd row of mid clamps on RockIt mounts and RockIt couplings to 200 in-lb.

11 **INSTALL THE REMAINDER OF THE PV COMPONENTS**

Install balance of PV modules, ensuring that the RockIt pedestals are in the appropriate position, then torque mid clamps to secure modules.

NOTE: MANAGE WIRES AFTER EACH ROW OF MODULES IS INSTALLED
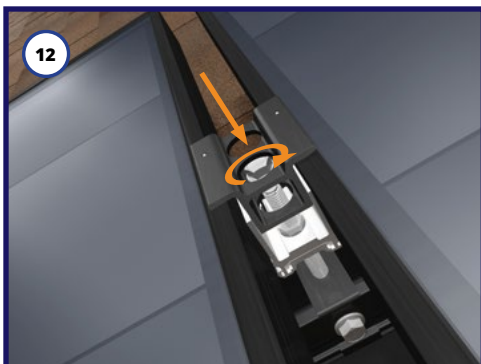
12 **CONTINUE THE PROCESS FOR EACH ROW OF MODULES**

• Torque remainder of mounts and couplings to 200 in-lb.
• When assembly is complete, level all subsequent rows of panels by adjusting flange level nuts (flange level nuts have no torque value).

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For Installers. **By Installers.**

ROCKIT TILE INSTALLATION
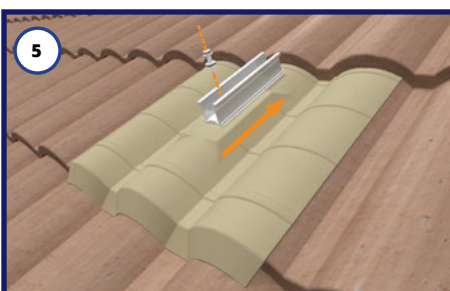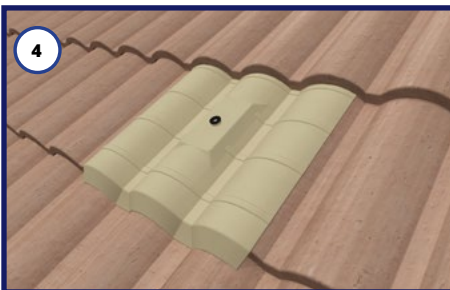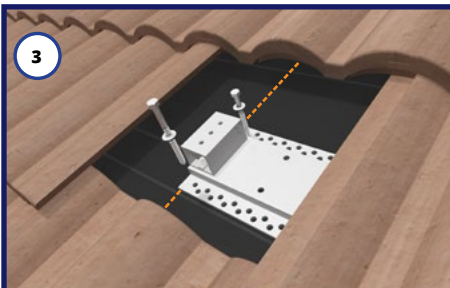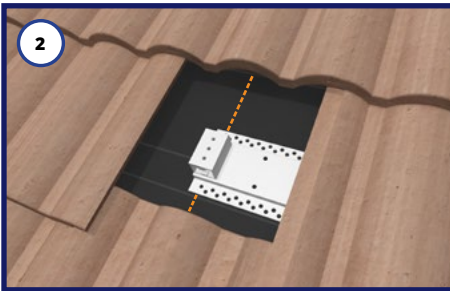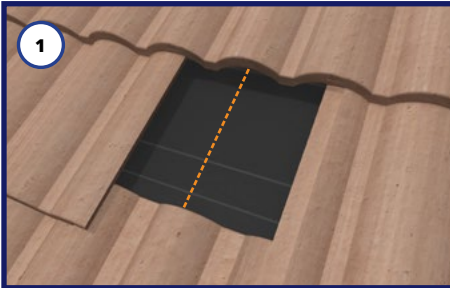
TILE MOUNTING SYSTEM INSTALLATION

1. Locate rafter in the typical manner. Remove tile.

2. Pre-drill lag bolt holes through base and butyl tape.

3. Remove release paper from bottom of butyl tape.

   • *Place base in proper location and press down firmly.*

   • *Backfill holes with sealant. Install lag bolts in pre-drilled locations.*

4. Install Flashing.

   • *Always install one flashing prior to installing fasteners to verify layout*

5. Attach Rockit Tile Slide with provided 5/16"-18 x 1.25" Hex Bolt and EPDM bonded washer, torque to 120-150 in-lb. (May be attached in either North-South orientation.)

NOTE: Re-align adjacent tiles as necessary to create a watertight roof connection.

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ROCKIT

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ROCKIT STEEL INSTALLATION
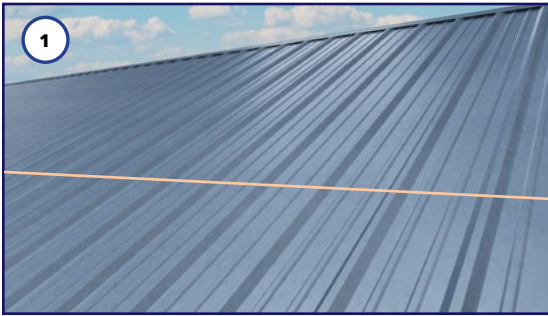
① EAST-WEST ROOF MARKING

Snap horizontal lines to mark the installation position for each Rockit Steeldeck slide.

② ROOF MARKING

Mark the center of the corrugation and draw a straight line to indicate where the mounting profile must be installed. Double check the ridge width (minimum of 0.75") and metal thickness (26ga).
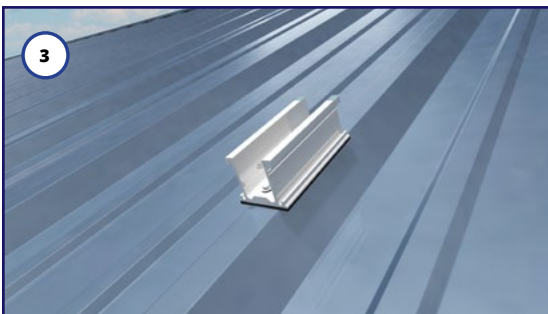
③ ATTACH MOUNTING PROFILES

Screw the mounting profiles onto the roof using the self piercing screws. Use a cordless screwdriver or impact driver with a 1/4" hex socket.*

*A WATERTIGHT SEAL HAS BEEN FORMED WHEN THE RUBBER ON THE WASHER CREATES A VISIBLE RING AROUND THE SCREW HEAD.
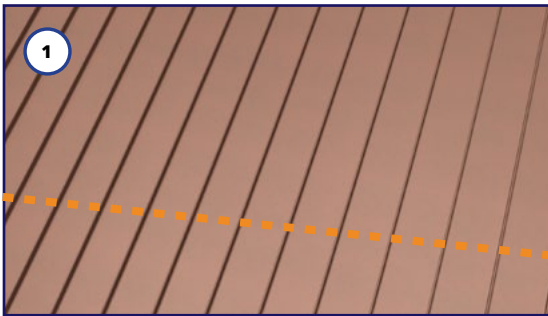
CORRECT INSTALL	TILTED	NOT ENOUGH TORQUE	TOO MUCH TORQUE
	INCORRECT	INCORRECT	INCORRECT

INSTALLATION

STANDING SEAM ROCKIT INSTALLATION

1 EAST-WEST ROOF MARKING

Snap horizontal lines to mark the installation position for each Rockit Mount.
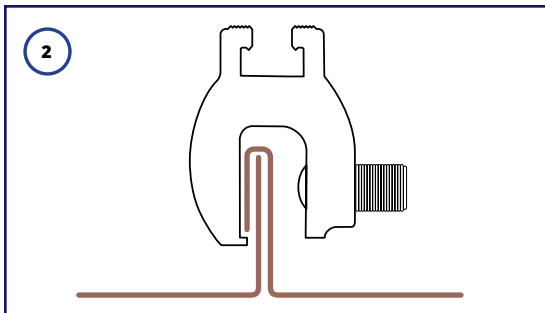
2 SIMPLEBLOCK

Place the SimpleBlock over the seam so that the North side of the block is aligned with the snapped horizontal lines. Lift up on the SimpleBlock until the lip contacts the seam in the fold. Torque the two set screws to 150 in-lbs using a 3/16" hex drive.
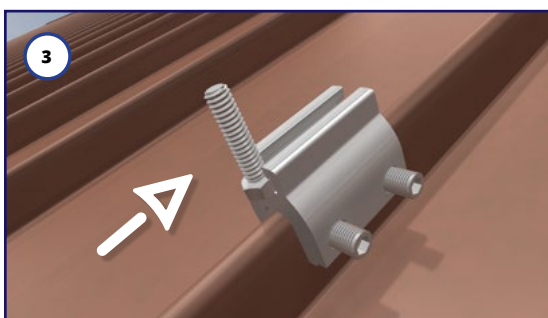
3 HEX BOLT

Slide the 5/16" - 1 1/4" hex bolt in the "T" channel on top of the block

INSTALLATION

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STANDING SEAM ROCKIT INSTALLATION
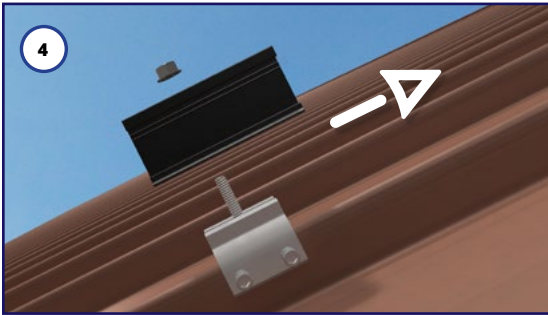
4 COMP SLIDE

Place the RockIt comp slide over the bolt with the long side of the comp slide facing upslope towards the eve of the roof. Position the bolt in the middle of the SimpleBlock and place the 5/16" flange nut over the bolt tip and torque to 150 in-lbs.
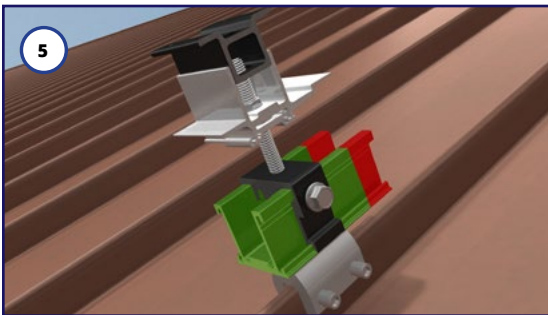
5 MOUNT PLACEMENT

When installing the RockIt mount along the comp slide, it cannot be placed anywhere within the last 1" of the comp slide as shown in red.

ACCEPTABLE STANDING SEAM PROFILES

½" MAX 1" MIN   ½" MAX 1" MIN   ½" MAX 1" MIN   ½" MAX 1" MIN

UNACCEPTABLE STANDING SEAM PROFILES

1"   1"

INSTALLATION

ROCKIT.
INSTALLATION GUIDE
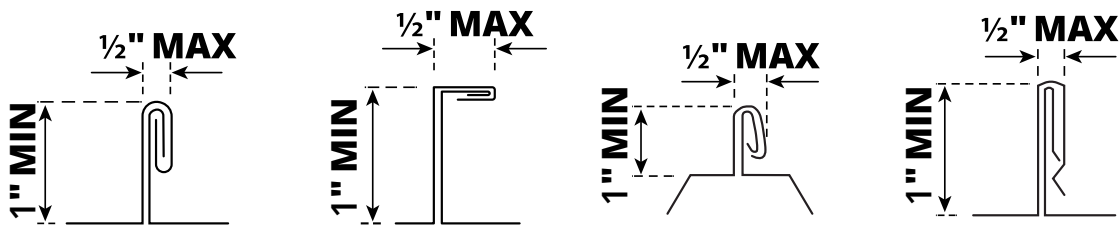
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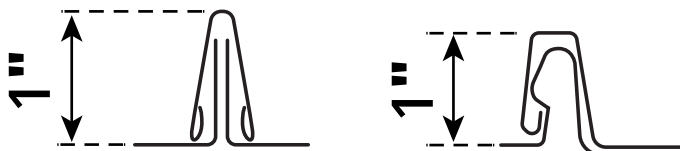
CONDUIT MOUNT INSTALL
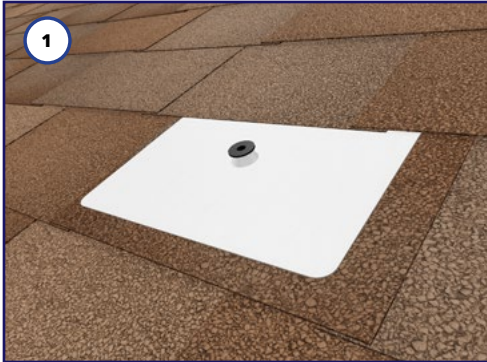
1 **INSERT FLASHING**

Select the appropriate position for the condiut mount and slide flashing up under the shingles.
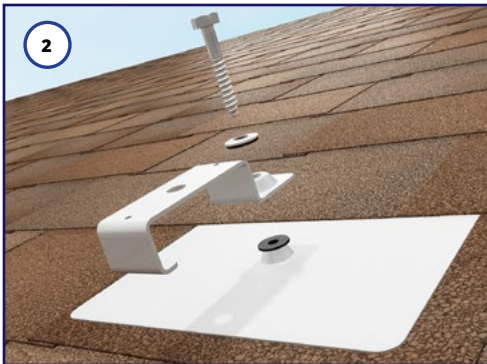
2 **INSERT LAG BOLT**

With the EPDM bonded washer threaded onto the lag bolt followed by the Conduit Mount Comp Bracket and then insert the lag bolt into the gasketed hole in the flashing.

The bracket can be rotated for orientation in any direction.

3 **TORQUE**

Drive the lag bolt down into the roof deck using an impact driver. The visual indicator for proper torque is when the EPDM on the underside of the bonded washer begins to push out the sides as the washer compresses. Do not over torque.

NOTE: Consult an engineer or go to www.ecofastensolar.com for engineering data.
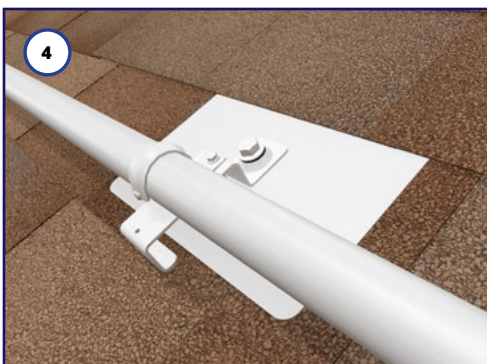
4 **INSTALL CLAMP**

Install a conduit clamp (Not included) using either one of the mounting holes on the top of the bracket

INSTALLATION

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TILE CONDUIT MOUNT INSTALL

1 INSERT MOUNT

Lift up the tile above which overlaps the Tile you want to run conduit across and slide the hook end of the Conduit Mount Tile under the tile and hook it on the tile below.

2 REPLACE TILE

Replace the top tile, taking care that it properly interconnects with adjacent tiles. The weight of the tile will hold the Conduit Mount Tile in place.

3 INSTALL CLAMP

Install a conduit clamp (Not included) using either one of the mounting holes on the top of the bracket

INSTALLATION

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FRAME MLPE MOUNT

INSTALL FRAME MLPE MOUNT ACCESSORY

- Slide the Frame MLPE Mount into the slot of the micro-inverter/power optimizer.
- Slide the micro-inverter/optimizer flange underneath the inside of the module frame with the frame MLPE mount on the outside of the frame.
- Tighten the bolt to 144 in-lb to clamp the Frame MLPE Mount to the module frame and the micro-inverter/power optimizer to the Frame MLPE Mount.
- 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.

FRAME MLPE MOUNT IS COMPATIBLE WITH:

- **ENPHASE:** M250-72, 250-60, M215-60, C250-72, S230, S280, IQ 6, IQ 6+, IQ7, IQ 7A, IQ 7+, IQ7 PD, IQ 7X, Q Aggregator; IQ8-60, IQ8PLUS-72, IQ8A-72, IQ8H-208-72, IQ8H-240-72, IQ8M-72, may be followed by -2-US
- **NEP:** BDM-300, BDM-300X2 and BDM-800
- **SOLAREDGE:** M1600, P300, P320, P340, P370, P400, P401, P405, P485, P505, P600, P700, P730, P750, P800p, P800s, P801, P850, P860, P950, P960, P1100, P1101, S440, S500, S1200, S1201

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JUNCTION BOX INSTALLATION

JUNCTION BOX PREP

Prior to installation, use step drill bit to place pass through holes for conduits or water-tight connectors. Drill bit starter locations are provided on the sides and front of enclosure. Do not install conduit facing up roof.

DECK MOUNTED INSTALLATION
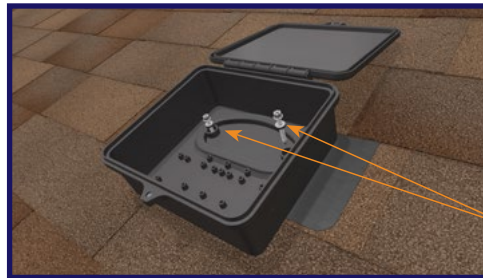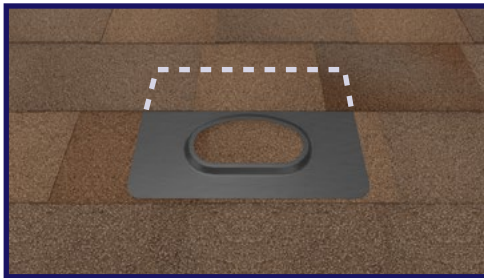
DECK SCREWS WITH
SEALING WASHERS (2X)

Align sealing oval of box to align with mating feature on flashing. An EPDM foam gasket is pre-installed to the underside of the junction box to seal the flashing to the box without the need for additional sealant. Secure with supplied #12 x 1- " deck screws (2x) until the junction box is pulled tight to the flashing. Do not over-tighten screws to avoid stripping screws in OSB.

If installing pass through fittings, ensure that the Junction Box and roof deck are both properly prepared. Complete installation process before attaching the Junction box to the deck.

FINALIZING INSTALLATION

Install wiring, conduit and fittings per NEC requirements and following local AHJ guidance. Using Philips Head Driver tighten the bolt.

For additional details refer to the full Junction Box Installation Manual.

ACCESSORIES

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BONDING AND GROUNDING

Bonding Path Direction
● **Grounding Lug**
— **Equipment Grounding Conductor (EGC)**
◄···► **Skirt Bonding Path**

HARDWARE
RockIt Coupling   RockIt Mount   RockIt Skirt
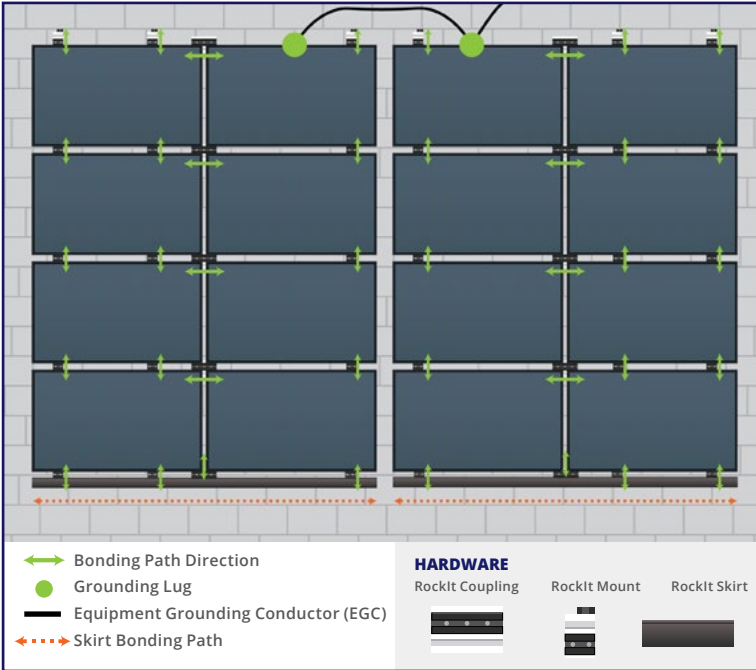
THERMAL EXPANSION & BONDING

- A thermal expansion gap is required per each continuous 40' length of modules.
- Omit a coupling and leave a 2" gap in the RockIt array skirt and also between the modules at that point.
- Bonding across the thermal gap should be accomplished with an approved ground lug for each array and an equipment grounding conductor.

Bonding Path Direction
● **Grounding Lug**
— **Equipment Grounding Conductor (EGC)**
◄···► **Skirt Bonding Path**

HARDWARE
RockIt Coupling   RockIt Mount   RockIt Skirt
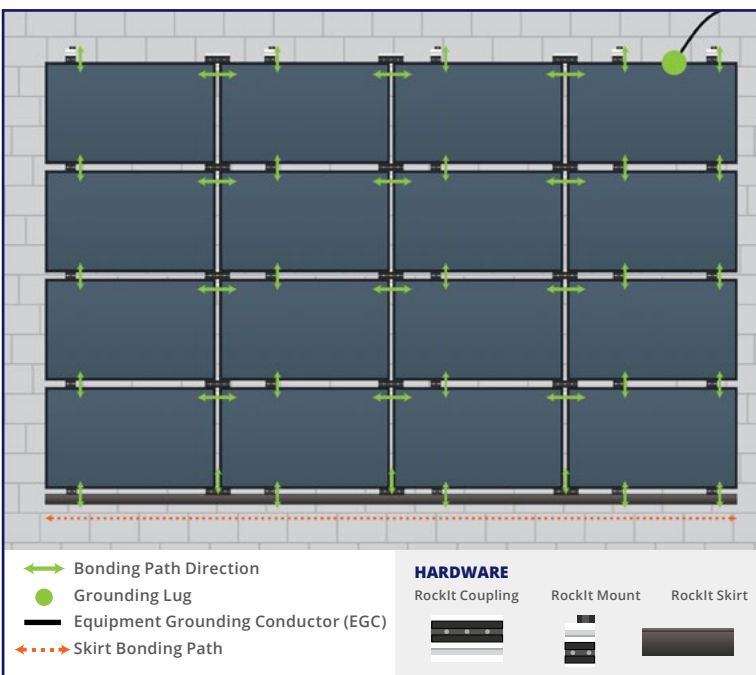
BONDING PATH & ASSEMBLY

- RockIt mount bonds N-S rows of modules.
- RockIt coupling bonds E-W rows of modules.
- RockIt array skirt is bonded to the array via the RockIt mount.
- One approved ground lug is required per continuous PV array.

GROUNDING

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BONDING AND GROUNDING
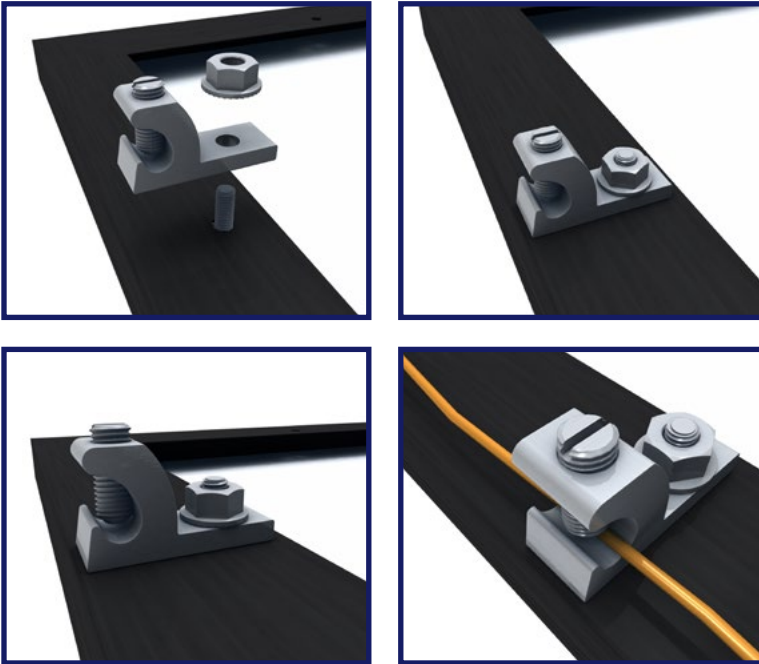
NECESSARY COMPONENTS

One of the following grounding lugs (or any UL 2703 Compliant ground Lug):

- Burndy CL50-1TN Ground Lug (UL2703 - E3514343 / UL 467 - E9999)
- ILSCO SGB-4 Ground Lug (UL2703 - E354420/ UL 467 - E34440)
- ILSCO GBL-4DBT (UL2703 - E354420 / UL 467 - E34440)
- ILSCO GBL-4DBTH (UL2703 - E354420 / UL 467 - E34440)
- ILSCO GBL-4SS (UL2703 - E354420 / UL 467 - E34440)

INSTALLATION

- Insert the flange bolt into the module ground hole. Place Star Washer over bolt. Place ground lug over the bolt and Star Washer, and turn to desired orientation.
- Install Flange Nut.
- Tighten Flange Nut/Bolt.
- Place wire in Ground Lug channel and tighten set screw to complete assembly.
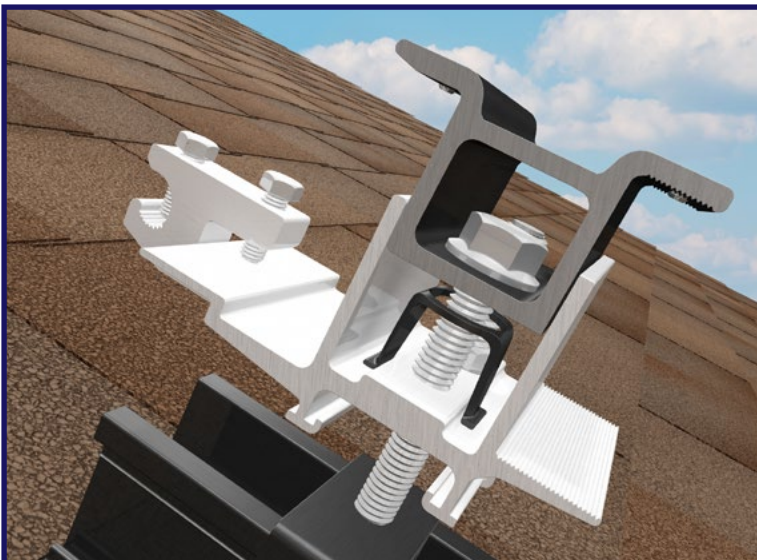
Above: Optional Location for grounding lug on last row upslope of array

GROUNDING

*Equipment grounding wire should be sized in accordance with the National Electrical Code, NFPA70 and a minimum of 1/4" clearance is required between bare copper wires and aluminum components.

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COMPATIBLE MODULES

The Rockit System has been tested and evaluated to UL 2703 for bonding, grounding, mechanical loading and fire classification, and may be used to ground and/or mount PV modules listed to UL 1703 or UL 61730. A list of approved modules is included below.

Unless otherwise noted, "xxx" refers to the module power rating and both black and silver frames are included in the certification.

*Class A System fire rating with Type 1, 2, and 29 PV modules with no skirt required.

NOTE: Modules with flange widths shorter than 22mm cannot be installed in portrait.

TYPE 1, 2 & 29 MODULES

MANUFACTURER	LIST OF UL 2703 APPROVED TYPE 1, 2 & 29 PV MODULES*
Adani	Adani modules with 35 and 40mm frames ASX-Y-ZZ-xxx Where "X" can be B, M or P, "Y" can be 6 or 7, and "ZZ" can be blank, PERC, B-PERC, or AB-PERC
AIONRISE	Aionrise modules with 35 and 40mm frames AIONyyG1-xxx Where "yy" can be 60 or 72
Aptos Solar	Aptos modules with 35 and 40 mm frames DNA-yy-zzaa-xxx Where "yy" can be 108, 120 or 144; "zz" can be MF or BF; and "aa" can be 10, 23 or 26
Astronergy Solar	Astronergy modules with 35 and 40 mm frames CHSMbbyyC/zz-xxx Where "bb" can be 60, 66, or 72; "yy" can be blank, 10 or 12; "C" can be M, M(BL), M-HC, P, P(BL) or P-HC ; and "zz" can be blank or HV
Auxin	Auxin modules with 40 mm frames AXN6M6YYMxxxZ Where "YY" can be 10 or 12; "Z" can be blank, A, B or C
Axitec	Axitec Modules with 30 and 35 mm frames AC-xxxY/aaZZ "Y" can be M, P, MH or MBT; and "aa" can be blank, 125 or 156; and "ZZ" can be 60S, 108V, 108VB, 120S, 120V or 120VB

MODULES

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MANUFACTURER	LIST OF UL 2703 APPROVED TYPE 1, 2 & 29 PV MODULES*
Bluesun Solar	Bluesun modules with 30 and 35mm frames BSMxxxM-AAA Where "AAA" can be 60HPH or 72HBD
Boviet	Boviet modules with 35 and 40mm frames BVM66aaYY-xxxBcc Where "aa" can be 9, 10 or 12; "YY" is M, or P; and "B" can be blank, L or S; and "cc" can be blank, H, H-BF, H-HC or HC-BF
Canadian Solar	Canadian Solar modules with 35 and 40 mm frames CSbY-xxxZ Where "b" can be 1, 3 or 6; "Y" can be H, K, L, N, P, R, V or Y; and "Z" can be M, MS, M-SD, MS-HL, MS-SD, P, PX, or P-SD
CertainTeed	CertainTeed modules with 35 and 40mm frames CTxxxYZZ-AA Where "Y" can be M, HC; "ZZ" can be 00, 10, 11; and "AA" can be 04 or 06
CSUN	CSUN modules with 35 and 40 mm frames CSUNxxx-zzAbb Where "zz" is 60 or 72; and "A" is M or MM; "bb" is blank or 5BB
Dehui	Dehui modules with 35 and 40mm frames DH-MYYYZ-xxx Where "YYY" can be 760, 772, 860, 872; and "Z" can be B or W
ET Solar	ET Solar modules with 35 and 40mm frames ET-YZZZxxxAA Where "Y" can be P, L, or M; "ZZZ" can be 660, 660BH, 672, 672BH, or 754BH; and "AA" can be TB, TW, WB, WW, BB, WBG, WWG, WBAC, WBCO, WWCO, WWBCO or BBAC
Freedom Forever	Freedom Forever modules with 35mm frames FF-MPa-BBB-xxx Where "a" can be blank or 1
Freevolt	Freevolt modules with 35mm frames ECP-PVGRAF-144HC-xxx

MODULES

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MANUFACTURER	LIST OF UL 2703 APPROVED TYPE 1, 2 & 29 PV MODULES*
Hanwha Q CELLS	Hanwha Q CELLS Modules with 32, 35 and 40mm frames aaYY-ZZ-xxx where "aa" can be Q. or B.; "YY" can be PLUS, PRO, PEAK, LINE PRO, LINE PLUS, PLUS DUO or PEAK DUO; and "ZZ" can be G3, G3.1, G4, G4.1, L-G2, L-G2.3, L-G3, L-G3.1, L-G3y, L-G4, L-G4.2, L-G4y, LG4.2/TAA, BFR-G3, BLK-G3, BFR-G3.1, BLK-G3.1, BFR-G4, BFR-G4.1, BFR G4.3, BLK-G4.1, G4/SC, G4.1/SC, G4.1/TAA, G4.1/MAX, BFR G4.1/TAA, BFR G4.1/MAX, BLK G4.1/TAA, BLK G4.1/SC, EC-G4.4, G5, G5/SC, G5/TS, BLK-G5, BLK-G5/SC, BLK-G5/TS, L-G5, L-G5.1, L-G5.2, L-G5.2/H, L-G5.3, G6, G6/SC, G6/TS, G6+, G6+/TS, BLK-G6, G7, BLK-G6+, BLK-G6+/AC, BLK-G6+/HL, BLK-G6+/SC, BLK-G6/TS, BLK-G6+/TS, BLK-G7, G7.2, G8, BLK-G8, G8+, BLK-G8+ L-G7, L-G7.1, L-G7.2, L-G7.3, BLK ML-G9, ML-G9+, BLK ML-G9+, ML-G9, BLK-G10+, BLK-G10+/AC, ML-G10, BLK ML-G10, ML-G10+, BLK ML-G10+, ML-G10.a, BLK ML-G10.a, ML-G10.a+ or BLK ML-G10.a+
Heliene	Heliene modules with 35 and 40 mm frames YYZZxxxA Where "YY" can be 60, 72, 108 or 120; "ZZ" can be HC, M or P; and "A" can be blank, M10-SL, M10-SL-BLK or M10-SL-Bifacial
HT-SAAE	HT-SAAE modules with 35 and 40 mm frames HTyy-aaaZ-xxx Where "yy" can be 60 or 72, "aaa" can be 156 or 166, "Z" can be M, M(V), M(S), M(VS), M-C, M(V)-C, P or P(V)
Hyperion	Hyperion modules with 35mm frames HY-DH108P8-xxx
Hyundai	Huyndai modules with 32, 35 and 40 mm frames HiY-SxxxZZ Where "Y" can be A or S; "S" can be M or S; and "ZZ" can be HG, KI, MF, MG, PI, SG, RG, RG (BK), TG or YH(BK) or XG(BK)
Itek	Itek Modules with 40 mm frames IT-xxx-YY "YY" can be blank, HE, or SE
JA Solar	JA Solar modules with 30, 35 and 40mm frames JAyyzz-bbww-xxx/aa Where "yy" can be M, P, M6 or P6; "zz" can be blank, (K), (L), (R), (V), (BK), (FA), (SE), (TG), (FA)(R), (K)(SE), (K)(TG), (L)(BK), (L)(TG), (R)(BK), (R)(TG), (V)(BK), (BK)(TG), or (L)(BK)(TG); "bb" can be 54, 60 or 72; "ww" can be blank, D30, S01, S02, S03, S09, S10, S17, S30 or S31; and "aa" can be MR, SI, SC, PR, RE, 3BB, 4BB, 4BB/RE, 4BB/1500V, PR/1500V, 5BB

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MANUFACTURER	LIST OF UL 2703 APPROVED TYPE 1, 2 & 29 PV MODULES*
Jinko	Jinko modules with 35 and 40 mm frames JKMYxxxZZ-aa Where "Y" can either be blank or S; "ZZ" can be M, P, PP, or -V; and "aa" can be blank, 60, 60B, 60H, 60HB, 60L, 60BL, 60HL, 60HBL, 60-J4, 60B-J4, 60B-EP, 60(Plus), 60-V, 60-MX, 72H, 72H-V, 72HL-V, 72HBL-V, 72L-V, 6RL3, 6RL3-B or 6TL3-B
LG	LG modules with 40mm frames LGxxxyaz-bb "y" can be A, E, M, N, Q, or S; "a" can be A, 1, 2 or 3; "z" can be C, K or W; and "bb" can be G4, A5, A6, B6, E6, E6.AW5, L5, N5, v5, V6
Longi	Longi modules with 35 and 40 mm frames LRa-YYZZ-xxxM Where "a" can be 4, 5 or 6; "YY" can be 54, 60 or 66 "ZZ" can be blank, BK, PB, PE, PH, HPB, or HPH
Maxeon	Maxeon modules with 35, 40 and 46mm frames SPR-AAAY-xxx-zzz Where "AAA" can be MAX or X; "Y" can be 3, 5, 6, 21 or 22; and "zzz" can be R, BLK or COM
Meyer Burger	Meyer Burger Modules with 35mm frames Meyer Burger Glass
Mission Solar	Mission Solar modules with 35, 40 mm frames YYYbb-xxxZZaa Where "YYY" can be MSE or TXS; "bb" can be blank, 6 or 60A; "ZZ" can be blank, SO, SQ, SX, 120 or 144; and "aa" can be blank, BB, BW, 4J, 4S, 5K, 5R, 5T, 8T, 8K, 9R or 9Z
Next Energy Alliance	Next Energy Alliance modules with 35 and 40mm frames yyNEA-xxxZZ where "yy" can be blank or US; "ZZ" can be M, MB or M-60
NE Solar	NE Solar modules with 30, 35 and 40mm frames NESExxx-zzMH-yy Where "zz" can be 54 or 60; and "yy" can be M6 or M10
Panasonic (HIT)	Panasonic modules with 40 mm frames VBHNxxxYYzzA "YY" can be either SA or KA; "zz" can be either 03, 04, 17 or 18; and "A" can be blank, E or G

MODULES

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MANUFACTURER	LIST OF UL 2703 APPROVED TYPE 1, 2 & 29 PV MODULES*
Panasonic (EverVolt)	Panasonic modules with 30 mm frames EVPVxxxA Where "A" can be blank or H, K or PK
Philadelphia Solar	Philadelphia modules with 35 and 40 mm frames PS-YzzAA-xxx Where "Y" can be M or P; "zz" can be 60, 72 or 144; and "AA" can be blank, (BF), (HC) or (HCBF)
Phono Solar	Phono Solar modules with 30 and 35 mm frames PSxxxY-ZZ/A Where "Y" can be M4, M4H, M5GF, M5GFH, M6, M6H, M8GF or M8GFH; "ZZ" can be 18, 20 or 24; and "A" can be TH, UHB, VH or VHB
Prism Solar	Prism Solar modules with 35mm frames PST-xxxW-M72Y Where "Y" can be H, HB or HBl
REC	REC modules with 30 and 38 mm frames RECxxxYYZZ Where "YY" can be AA, M, NP, NP2, PE, PE72, TP, TP2, TP2M, TP2SM, TP2S, TP3M or TP4; and "ZZ" can be blank, Black, BLK, BLK2, SLV, 72, Pure or Pure-R
Recom	Recom modules with 35 and 40 mm frames RCM-xxx-6yy Where "yy" can be MA, MB, ME or MF
Renesola	ReneSola 60-cell modules with 40 mm frames JCxxxY-ZZ "Y" can be F, M or S; and "ZZ" can be Ab, Ab-b, Abh, Abh-b, Abv, Abv-b, Bb, Bb-b, Bbh, Bbh-b, Bbv, Bbv-b, Db, or Db-b
S-Energy	S-Energy modules with 35 and 40mm frames SABB-CCYYY-xxxZ Where "A" can be C, L or N; "BB" can be blank, 20, 40 or 45; "CC" can be blank, 60 or 72; "YYY" can be blank, MAE, MAI, MBE, MBI, MCE or MCI; and "Z" can be V, M-10, P-10 or P-15
Seraphim USA	Seraphim modules with 35 and 40 mm frames SRP-xxx-YYY-ZZ Where "YYY" can be 6MA, 6MB, 6PA, 6PB, or BMD; "ZZ" is blank or HV

MODULES

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MANUFACTURER	LIST OF UL 2703 APPROVED TYPE 1, 2 & 29 PV MODULES*
SEG Solar	SEG Solar Modules with 35 and 40mm frames SEG-xxx-YYY-ZZ Where "YYY" can be BMB, BMD or 6MA; "ZZ" can be BB, BW, HV, TB, WB or WW
Shinsung E&G	Shinsung Modules with 35mm frames SSVxxx-144MH
Silfab	Silfab Modules with 35 and 38 mm frames SYY-Z-xxxAb Where "YY" can be IL, SA, LA, SG or LG; "Z" can be blank, M, P, or X; "A" can be blank, B, H, M, N; and "b" can be A, C, C+, G, K, L, N, T, U or X
Solar4America	Solar4America modules with 35 and 40mm frames S4Axxx-72yy Where "yy" can be MH5 or MH5BB
Solarever	Solarever modules with 35mm frames SE-zzz*yy-xxxM-aaa Where "zzz" can be 166 or 182; "yy" can be 83 or 91; and "aaa" can be 108 or 144
Solaria	Solaria modules with 35 and 40 mm frames PowerA-xxxR-ZZ Where "A" can be XT or X; and "ZZ" can be blank, AC, BD, BX, BY, PD, PL, PX, PZ, WX or WZ
SolarTech	SolarTech modules with 40 mm frames AAA-xxx Where "AAA" can be PERCB-B, PERCB-W, HJTB-B or HJTB-W
Sonali	Sonali Modules with 35mm frames SS-M-xxx
Star Solar	Star Solar modules with 35mm frames Star-xxxYYY-ZZZ Where "YYY" can be M60H or M60HB; and "ZZZ" can be blank or M10
Sunmac Solar	Sunmac modules with 30 and 35mm frames SMxxxMaaaZZ-BB Where "aaa" can be 660 or 754; and "ZZ" can be NH or SH
Sunpower	Sunpower modules with 35 and 40 mm frames SPR-A-xxx-YY Where "A" can be A or M; and "YY" can be blank , COM, G-AC, BLK-G-AC, H-AC or BLK-H-AC
Sunpreme	Sunpreme Modules with 40mm frames GxB-xxxT

MODULES

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Sunspark	Sunspark modules with 40 mm frames SYY-xxxZ-A Where "YY" can be MX or ST; and "Z" can be M, MB, M3, M3B, P or W; and "A" can be 60 or 72
Suntech	Suntech Modules with 35mm frames STPxxxS-zz/aa Where "zz" can be B60 or B72; and "aa" can be Vnh or Wnhb
Talesun	Talesun modules with 30mm frames TD6y72M-xxx Where "y" can be G or I
Tesla	Tesla modules with 40 mm frames TxxxY Where "Y" can be H or S
Trina	Trina modules with 30, 35 and 40 mm frames TSM-xxxYYZZ "YY" can be DD05, DD05A, DD06, DE05, DE09, DX05A, DE06X, PA05, PC05, PD05, PE14 or PX05; and "ZZ" can be blank or A, .05, .05(II), .08, A.05, A.08, A(II), A.05(II), A.08(II), C.05, C.07, C.05(II), C.07(II), H, H.05, H.08, H.05(II), H.08 (II), M, M(II) or M.05(II)
Universal	Universal Solar Modules with 35mm frames UNI-xxx-yyyZZZ-aa Where "yyy" can be 108, 120 or 144; "ZZZ" can be M, MH or BMH; and "aa" can be blank, BB or DG
URE	URE modules with 35 mm frames DyMxxxaa Where "D" can be D or F, "y" can be A, B, 6 or 7; "M" can be K or M; and "aa" can be C8G, H3A, H4A, H8A, E7G-BB or MFG-BB
Vikram	Vikram solar modules with 35 and 40 mm frames XVSyy.ZZ.AAA.bb Where "X" can be blank, Paradea, Prexos or Somera; "yy" can be MDH, MDHT, MH or MHBB; "ZZ" can be 60 or 72; "AAA" is the module power rating; and "bb" can be 05
VSUN	VSUN modules with 30, 35 and 40 mm frames VSUNxxx-YYz-aa Where "YY" can be 108 or 120; "z" can be BMH or M; and "aa" can be blank, BB or BW
Waaree	Waaree modules with 40mm frames WSyy-xxx where "yy" can be blank, M or MB

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Yingli	Yingli modules with 35 and 40 mm frames YLxxxZ-yy Where "Z" can be D or P; "yy" can be 29b, 30b, 34d, 35b, 36b or 40d
Yotta	Yotta modules with 30mm frames YSM-Bxxx-06-72-1
Zeus	Zeus Solar Modules with 40mm frames ZxxxM-HB
ZN Shine	ZN Shine modules with 35mm frames ZXM6-AAA-xxx/M Where "AAA" can be 72, NH120 or NHDB144

TYPE 4 & 5 MODULES

**Class A System fire rating with Type 4 and 5 modules with south edge skirt required. Class B System fire rating with Type 4 and 5 modules, no skirt required. Any roof-to-module gap is permitted. This rating is applicable with any roof attachment.

MANUFACTURER	LIST OF UL 2703 APPROVED TYPE 4, & 5 PV MODULES**
Bluesun Solar	Bluesun modules with 35mm frames BSMxxxM10-54HPH
Meyer Burger	Meyer Burger Modules with 35mm frames Meyer Burger Black or White
Talesun	Talesun modules with 30mm frames TP7G54M(H)xxx

MODULES