

Quick Mount PV[®]

Your *Solution* in Mounting Products

Solar • H₂O • Conduit • HVAC • Custom

Composition Mount Specifications

Quick Mount PV[®] is an all-in-one waterproof flashing and mount to anchor photovoltaic racking systems, solar thermal panels, air conditioning units, satellite dishes, or anything you may need to secure to a new or existing roof. It is made in the USA of all aluminum and includes stainless steel hardware. It works with all standard racks, installs seamlessly and saves labor by not needing to cut away any roofing, will out live galvanized 2 to 1, and is a better low-profile mount.

Flat Washer 1" x 5/16"

EPDM Rubber Washer 60 Durometer

Sealing Washer 3/4" x 5/16"

Hanger Bolt 5/16" x 6"

1-1/4" Machine, 1-3/4" Spacer, 3" Lag

Mount & Flashing Aluminum

Mount 2-1/4"l x 1-1/4"w x 1-1/4"h

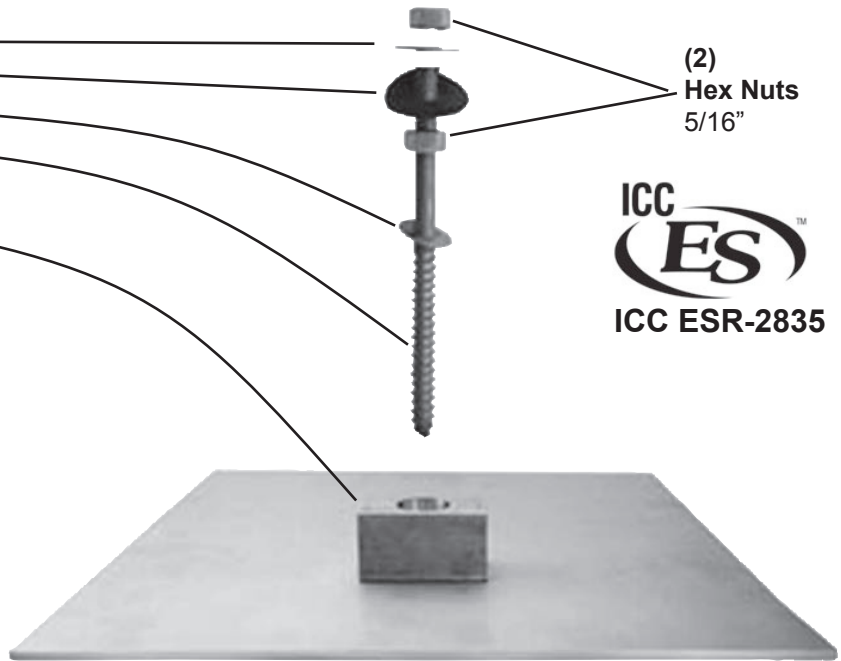
Flashing .05" thick

For standard composition roofs: flashing is

12" x 12", mount is attached 3" off center

(2)
Hex Nuts
5/16"

ICC
ES[™]
ICC ESR-2835



Lag pull-out (withdrawal) capacities (lbs) in typical lumber:

| | Specific gravity | Lag Bolt Specifications | |
|---|------------------|---------------------------------|---------------------------------|
| | | 5/16" shaft per 3" thread depth | 5/16" shaft per 1" thread depth |
| Douglas Fir, Larch | .50 | 798 | 266 |
| Douglas Fir, South | .46 | 705 | 235 |
| Engelmann Spruce, Lodgepole Pine (MSR 1650 f & higher) | .46 | 705 | 235 |
| Hem, Fir | .43 | 636 | 212 |
| Hem, Fir. (North) | .46 | 705 | 235 |
| Southern Pine | .55 | 921 | 307 |
| Spruce, Pine, Fir | .42 | 615 | 205 |
| Spruce, Pine, Fir (E of 2 million psi and higher grades of MSR and MEL) | ..50 | 798 | 266 |

Sources: Uniform Building Code; American Wood Council

Notes: 1) Thread must be embedded in a rafter or other structural roof member.

2) Pull-out values incorporate a 1.6 safety factor recommended by the American Wood Council.

3) See IBC for required edge distances.

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Know Your Roof

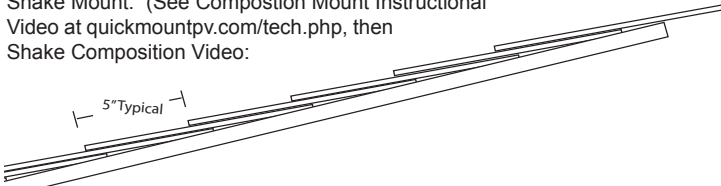
It is a good idea to do a thorough roof evaluation prior to your project installation. At this time you should do a layout on the roof confirming everything on the drawing will fit as it is intended. Any irregularities should be noted now, so that you can deal with them simply on install day. The quality of the roofing should be determined, so that any repairs or replacement can happen before or in conjunction with the installation. On a composition roof it is important to know as much as possible about: the manufacturer, the age of roof, the type of substrate (plywood or oriented strand board [OSB]), the rafter size, the spacing and span, the age of roof structure, who roofed it, who built it, etc.

Photos should be taken of all of the roof variables and associated with the job file for any future reference either short term or long. Typically the building owner can look in a file and find the composition manufacturer. If not, take a piece to the roofing yard, they can usually recognize the maker and the rough vintage. It is then easy to obtain the written manufacturer's installation instructions for the roofing materials you are dealing with. The manufacturer's instructions will spell out exactly what does and does not void the warranty of their roofing product. Most have a clause about roof temperature. This is commonly missed, but can easily be noted if you read the instructions. Officially, the roofing manufacturer's instructions supersede our instructions, as our product is weaving into theirs. It is also important to have their instructions in the job file, for any future reference. If the manufacturer cannot be found, there is obviously no warranty in place.

On a roof that has a material and labor warranty in place (new roof), it is recommended to at least consult the roofer of record. Often the roofing contractor will void the labor portion of their warranty if another trade modifies their work. Give the roofing contractor the option of handling the roofing modifications, or at least give them the opportunity to inspect and approve the modifications you make. There will be fees to this roofer, but if it maintains the labor warranty it should be good money spent.

Product Selection

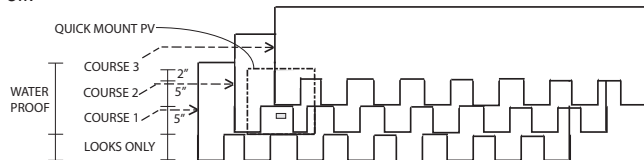
The Composition Mount is intended to fit within most composition and wood shingle roof systems, but not all. Specifically it is sized to fit within a standard 5" to 5 1/2" row or course. To confirm that the Comp Mount will match your roof, measure the course exposure of your roof. The "exposed" surface course height should measure no more than 5 3/4". If it turns out the roof tiles are a non-standard size greater than 5 3/4", the alternative method is to use a Quick Mount Shake Mount instead. In this case, follow the directions for the Quick Mount Shake Mount. (See Composition Mount Instructional Video at quickmountpv.com/tech.php, then Shake Composition Video:



High Definition Comp - Presidential

Irregular surface - If the penetration lands in a low between two highs, it is best to shim the low under the flashing with extra asphalt to level out the surface.

Irregular tooth pattern - If the shingles have a tooth pattern wherein the bottom edge jogs up and down to give it a higher profile look, it is important to understand that the excess shingle that hangs lower than the rest of the shingle is for looks only. The 5" rule starts at the top of the tooth. If a tooth interferes with the mount block, cut the tooth off.



How Many Mounts Per Module?

There are two questions that must be asked when adding anything to a roof.

1. Can the roof / building / foundation handle the additional load?
2. What is to keep the new load from blowing away?

It is assumed that a licensed solar installer can answer these questions. If he / she can't, he / she will need to find somebody that can. A licensed engineer is the easiest solution. Some of the racking manufacturers have guides to calculating a code compliant install as well. Many variables must be considered and determined to complete the calculation. The spacing between mounts has the variables of: strength of rail, distance between parallel rails, cantilever of modules over rails, pull out strength of mount, slope of roof, height of roof, wind zone, roof type, structural integrity of roof framing, etc. The only values in the variables above that we can provide is pull out strength and shear of mount. We provide structural test reports on all of our mounts as needed. You will need to do the calculation of variables as you are the only one who knows them all.

Further Resources

In the process of all the research we have done, we came up with what we call the "Wheel of Accountability". It is a graphical look at the many official entities that govern how waterproofing should be done. At our web site you can click on any wedge of the wheel and get the code snippets that pertain to that entity's focus on roof penetrations.

Please don't hesitate to use it to your advantage. And of course if you have any feed back pro or con, let us have it. Take photos of your jobs using Quick Mount Products and submit them to us at info@quickmountpv.com, we'll put them up in our web gallery. Put Photo Gallery in the Subject line.

Product Includes

The units are sold in 12 packs. Each 12 pack includes the mounting hardware and the mount with flashing to install 12 mounts, with written instructions.

Alternative Attachment Methods

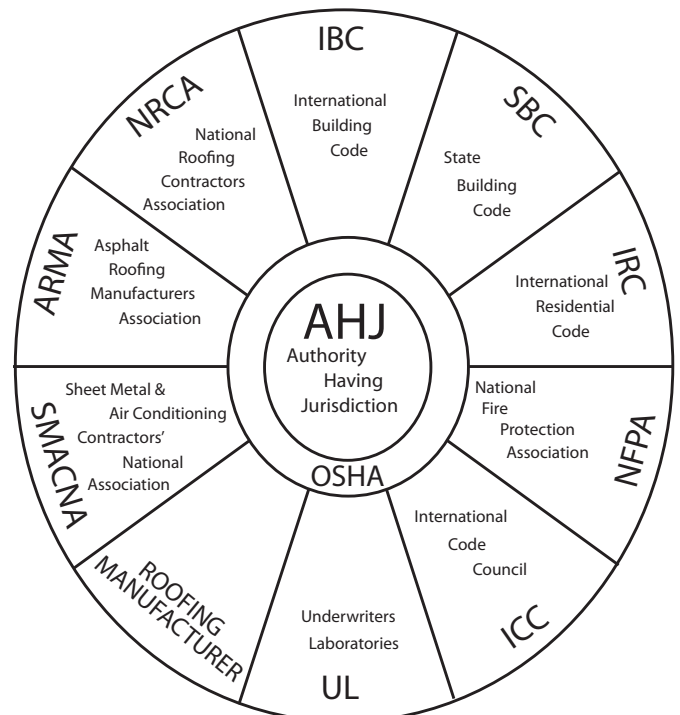
The Composition Mount is intended to be attached into a lumber rafter. Mounts are usually laid out based on the location of the rafters. In some cases it is desired to place a mount where there is no rafter. In this case it is possible to place a block between rafters, then lag into the block. In the case of metal rafters, lumber blocking the rafters is a solution, but should be done per the building's engineer of record.

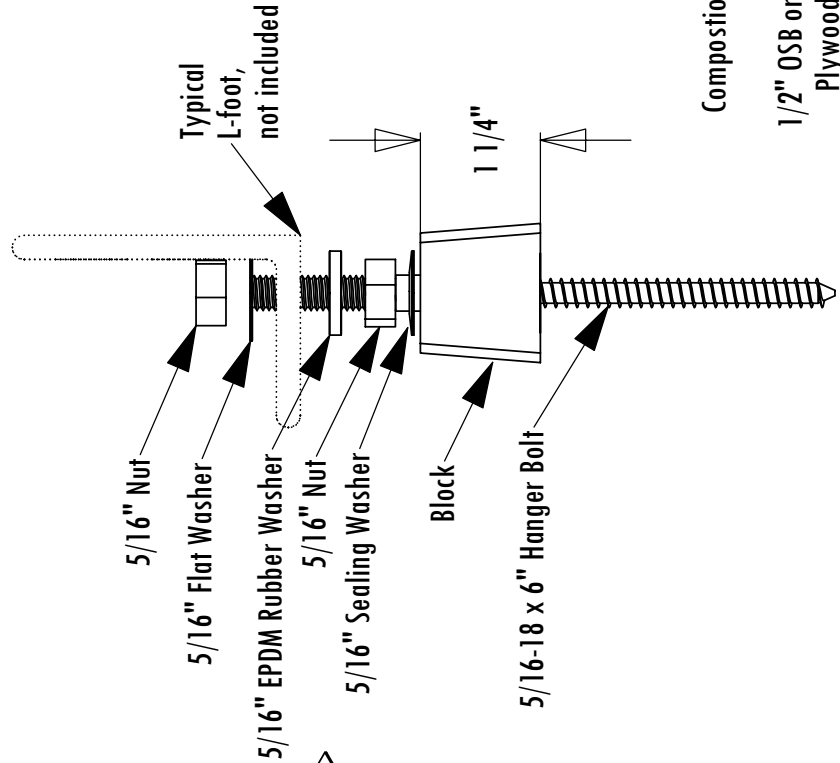
Shared Rail & 5" Rule

On a shared rail system, where the mounts must be in an exact spot, it is important to make sure the unit is flashed properly. Normally the vertical placement is guided by the exposed front edge of the shingle. If (on a 5" exposure comp) the flashing is flush with this, then you have 5" of flashing over course 1, 5" of flashing under course 2, and 2" of flashing under courses 2 and 3. This is important because if there is a vertical joint in course 2 the water cannot find its way under the flashing because it extends under course 3. When the flashing must be shifted to catch a shared rail, it is advised to shift the mount up the roof only, leaving less flashing over course 1, and more flashing under course 3. If it is necessary to shift downward, it is advised to move down a whole course and then shift up accordingly.

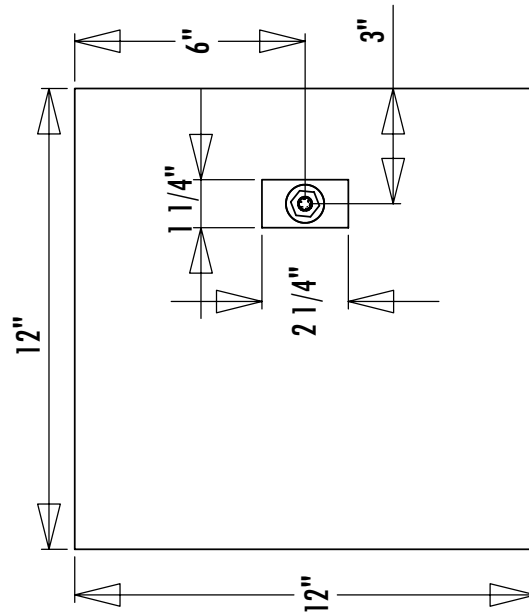
Sealants

It is important to put a compatible sealant into any and all holes drilled into a roof. We have been recommending Geocell 2300, but there are many that are compatible with: asphalt, wood, aluminum, and stainless steel. In the freeze-thaw zones, it is important to follow the manufacturers' rules for freeze-thaw conditions.

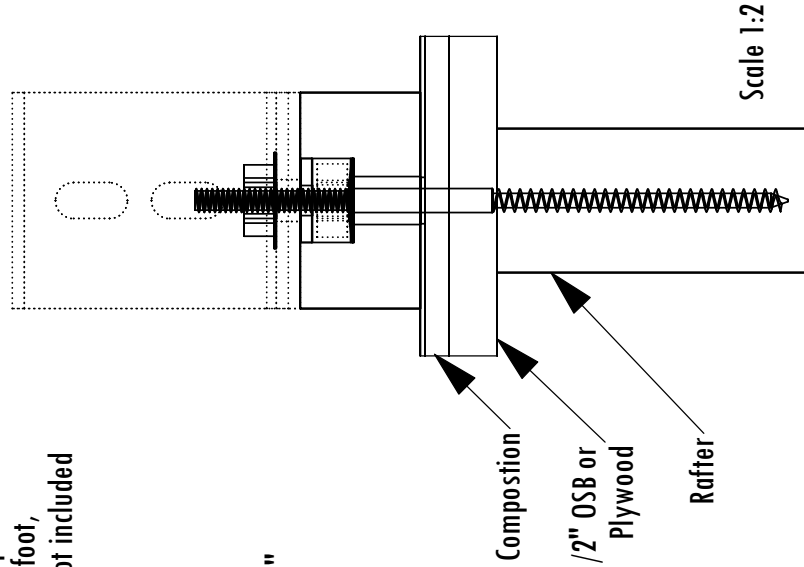




Block pivots on flashing with water-tight seal



Scale 1:5



Scale 1:2

| | |
|----------|--------------------|
| TITLE: | QM-PV-Comp - 5/16" |
| COMMENTS | |
| DATE | 8/08/08 |
| REVISION | 2 |
| DRAWN BY | A.B.K. |



FILE NAME QMSC3125_EXP
Quick Mount PV
 Your Solution in Mounting Products
 Solar • H₂O • Conduit • HVAC • Custom

Quick Mount PV[®]

COMPOSITION MOUNTING INSTRUCTIONS 5/16"

Installation Tools Required: Tape Measure, Roofers Bar / Shingle Ripper, Chalk Line, Stud Finder, Caulking Gun, 1 Tube of Appropriate Sealant, Drill with 1/4" long bit, Drill or Impact Gun with 1/2" Deep Socket.



1 Locate, choose, and mark centers of rafters to be mounted. Select each row course of roofing for Mount placement of Quick Mounts.



2 Lift Composition roof shingle with Roofers Bar, just above placement of Quick Mount.



3 Slide Mount into desired position. Remove any nails that conflict with getting Mount flush with front edge of shingle course. Mark center for drilling.



4 Using drill with 1/4" long bit, drill pilot hole into roof and rafter, taking care to drill square to the roof.



5 Clean off any saw dust, and fill hole with Sealant.



6 Slide Mount back into position. Prepare Hanger Bolt with 1 Hex Nut and 1 Sealing Washer, insert through Block into hole and drive Hanger until Block is tight.



7 Insert EPDM Rubber Washer over Hanger Bolt into Block.



8 Using the Racking Hardware, secure the rack of your choice. Tighten to 16 foot pounds.

You are now ready for the rack of your choice. Follow all the directions of the rack manufacturer as well as the module manufacturer.

All roofing manufacturers' written instructions must also be followed by anyone modifying a roof system. Please consult the roof manufacturers' specs and instructions prior to touching the roof.