Flat Tile Mount Specifications

All Patents Pending

| Pull-out (withdrawal) capacities (lbs) in typical lumber: |
| Machine Bolt specifications - 5/16" x 2" (2 each per Mount) |
| 5/16" Toggle (2 each per Mount) |
| Minimum repetitive pull out testing exceeded 1000 lbs in each: |
| 1/2" plywood |
| 1/2" OSB (oriented strand board) |

** Note: To maintain waterproofing of substrate it is important to make sure the Peel and Stick Flashing is properly placed over the Mount Base, and under the course of paper above. If the paper above does not reach due to layout, place an additional piece of roofing paper over the Peel and Stick and under the next course of paper above. (See instructions page 4.)
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. Remove a tile and see what is underneath. On a tile roof it is important to know as much as possible about: the manufacturer of the tile, the size of the tile, age of tile, type of substrate (plywood or oriented strand board [OSB]) the rafter size and spacing, 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. If the roofing manufacturer is known, it is then easy to obtain the written manufacturer’s installation instructions for the roofing materials you are dealing with. Typically the tile roof manufacturer puts a stamp of some sort on the back of each tile. This stamp can be defined by the roofing yard, or by a little on-line surfing. The manufacturer’s instructions will spell out exactly what does and does not void the warranty of their roofing product. 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.

Product Selection
The Quick Mount Flat Tile Mount is intended to fit within most flat tile roof systems, but not all. Specifically it is sized to fit within a standard 12” wide x 17” tall flat concrete tile roof system of either standard weight or light weight. To confirm that the Quick Mount Flat Tile Mount profile will match your roof, it is best to measure an existing roof tile. The “exposed” surface width (exposed surface not including left side gutter) should measure between 10 3/4” and 12” wide. The height should measure 17” +/- 1/2”. If it turns out the roof tiles are a non-standard size and the Quick Mount Flat Tile Mount does not fit, the alternative method is to use a Quick Mount Curved Tile Mount instead. In this case, follow the directions for the Quick Mount Curved Tile Mount and omit the step pertaining to the bending of the flashing.  (Coming Soon: Curved Tile Instructional Video at www.quickmountpv.com/tech.php)

Toggle Instructions:
1. Drill ¾” (19mm) diameter hole.
2. Hold the metal channel flat alongside plastic straps and slide channel through pre-drilled hole. With one hand, pull ring so metal channel rests flush behind OSB sheathing. Slide plastic cap along straps with other hand until flange of cap is flush with roof decking.
3. Place thumbs between straps. Push thumbs side to side, snapping off straps level with flange of cap.
4. Prepare Base Plate as per instructions pg.4 photo 4
5. Place Base Plate over flange, insert Bolt and tighten until snug against roof deck OSB, then stop.

Waterproofing
On a tile roof it is actually the building paper below the tiles that is waterproof. The tiles are considered water resistant. It is assumed that water will travel under the tiles. The tiles are there for aesthetics, thermal absorption, and to protect the building paper from U.V. and the elements. It is imperative to follow standard roofing practices with the paper. The Peel and Stick Flashing that we provide needs to go over our Mounting Base Plate with 1” minimum sticking to the roof paper below the mount. On the top side of the mount, the Peel and Stick must extend under the existing lap in the paper course directly above the mount. In the common occurrence that the paper is too far up the roof to reach, you must supply and install another piece of building paper (usually 30 lb.) under the row of paper above, and over the top 2 inches of Peel and Stick Flashing. This paper should be wider than the Peel and Stick Flashing, and either stapled down or nailed. If a baton board is in the way, pry it up and slip the paper under the baton.

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 photo’s of your jobs using Quick Mount Products and submit them to us, we’ll put them up in our web gallery. Submit them to info@quickmountpv.com Subject - Gallery Photo
5/16-18 x 1" SS Machine Bolt

5/16" ID Fender Washer

5/16" x 1" Grade 8 Bolt

5/16" ID x 1 1/4" OD Sealing Washer

1 1/4" x 5 1/2" Aluminum Post

EPDM Rubber Counter Flashing

Peel and Stick Flashing 12" x 11"

Racking of Choice (Not Included)

5/16"-18 x 2" TAP Bolts for OSB Substrate

5/16"-18 Toggles

Cast Aluminum Base Plate 5" x 3.5" x 0.5"

Aluminum Flashing

5/16"-18 x 1" Stainless Steel Machine Bolt

Plywood Attachment Method:
4 - Lag Screws, 1/4" x 1 1/2"
through Base Knock-out Holes

10.625"

16.75"

5.3"

6.250"

1.75" H

0.563"

0.375"

1"

1.5"

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Tools required to install (see list on specification page).

Remove Tile at location of Mount. Measure up 6 5/8” to center of Mount. Mark paper, then measure 5 1/2” from exposed edge of adjoining right tile to center of mount, and mark paper.

Use the Base Plate as a template to mark the drilling of the top and bottom holes. Remove Base Plate, drill 3/4” hole through deck. Insert toggler bolts per Toggle Instructions (see page 2).

Insert Machine Bolt under Base Plate in hex slot so threads point upward. Place Base Plate over Toggles and secure with 2 ea 5/16” x 1 1/2” Machine Bolts into Toggles.

Carefully clean the building paper & press the Peel and Stick firmly around Base and paper. Work from the center out removing any air pockets. (* below, ** page 1)

With wedge still in place on the leading edge of tiles above, lift left side tile and set Aluminum Flashing into place.

You are now ready for the rack of your choice. Follow all of 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.

* Make sure the Peel and Stick is firmly adhered and that all air bubbles are pushed out.

For Questions Call 925-687-6686

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