Guidelines for Mounting of PV Systems onto Interlocking Metal Shingle Roofs

PV installers are encountering interlocking metal shingle roofs and they are scratching their heads trying to come up with a mounting solution. Most interlocking metal shingles have a pattern stamped into them and the use of an EZ Metal Roof Mount, as designed, will not work since it requires a smooth flat surface. The use of flashing type mounts will not work since the shingles are interlocked and the flashing cannot be slipped under the upper shingle. SunModo has a method to mount to interlocking metal shingle roofs.

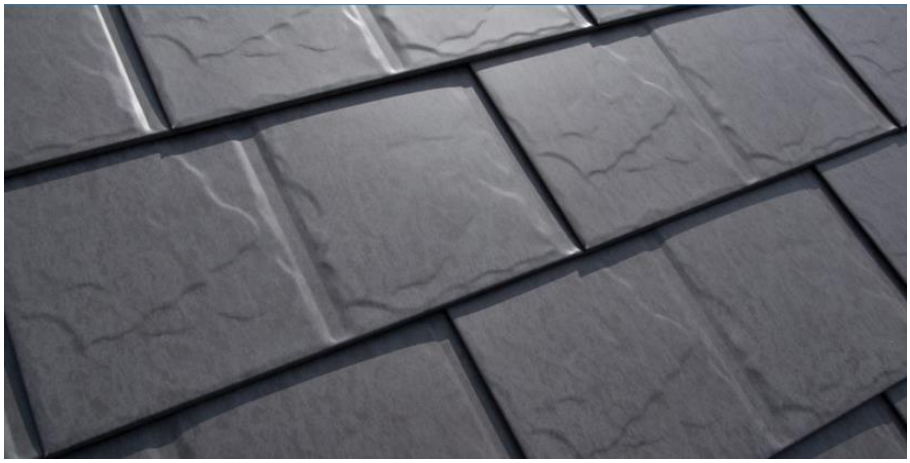


Figure 1 – Typical Interlocking Metal Shingle Roof

Figure 2 – Cutaway of Metal Shingle roof shows the interlock both horizontally and vertically between the shingles.

The one sure way to mount to the interlocking metal shingles is to drill a hole through the shingle and fasten a mount such as the EZ Metal Roof Mount to the underlying sheathing and rafter. A rubber boot is then fastened to the interlocking metal shingle using small sheet metal screws and sealant to insure a water tight seal.

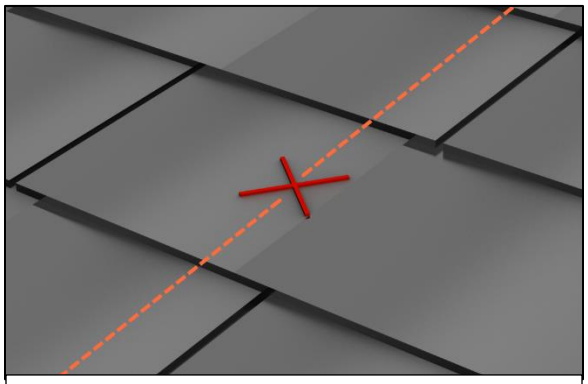
Figure 3 – A small rubber boot is used to cover the roof penetration and provide a good water seal.

Figure 4 – A rubber boot is shown on a roof vent pipe fastened to the metal roof with sealant and small sheet metal screws.

Installing EZ Metal Roof Mounts onto an Interlocking Metal Shingle Roof:

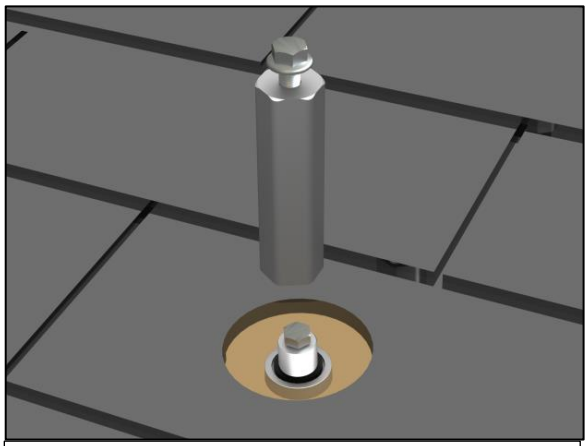
A layout of the desired mounting grid for the PV system should be laid out on the roof in the same manner as if on a composite shingle roof. Attention should be paid to the rafter locations such that the mounts can be fastened into the rafters of the roof. This task is made more difficult with metal shingles since a stud finder will not work through the metal shingles. Careful measurements and possibly attic inspection of the roof structure maybe required to accurately locate the rafters.

A 3 inch hole saw should be used to penetrate the metal roof shingle; care should be taken to make a clean hole. It is recommended that you use a finder bit (6 inch by 3/16 drill bit) to verify the exact center of the rafter.

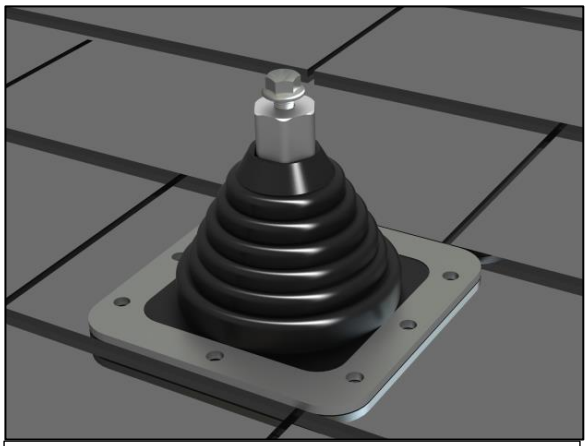


Step 1: Locate the desired mount location on the roof relative to the rafter locations.

Step 2: Use a 3 inch hole saw to make a clean hole in the metal roof shingle.



Step 3: Install an EZ Metal Roof Mount through the hole into the rafter and install a Standoff.



Step 4: Install a Rubber Roof Boot over the Standoff and secure using Sealant and small Teks screws.