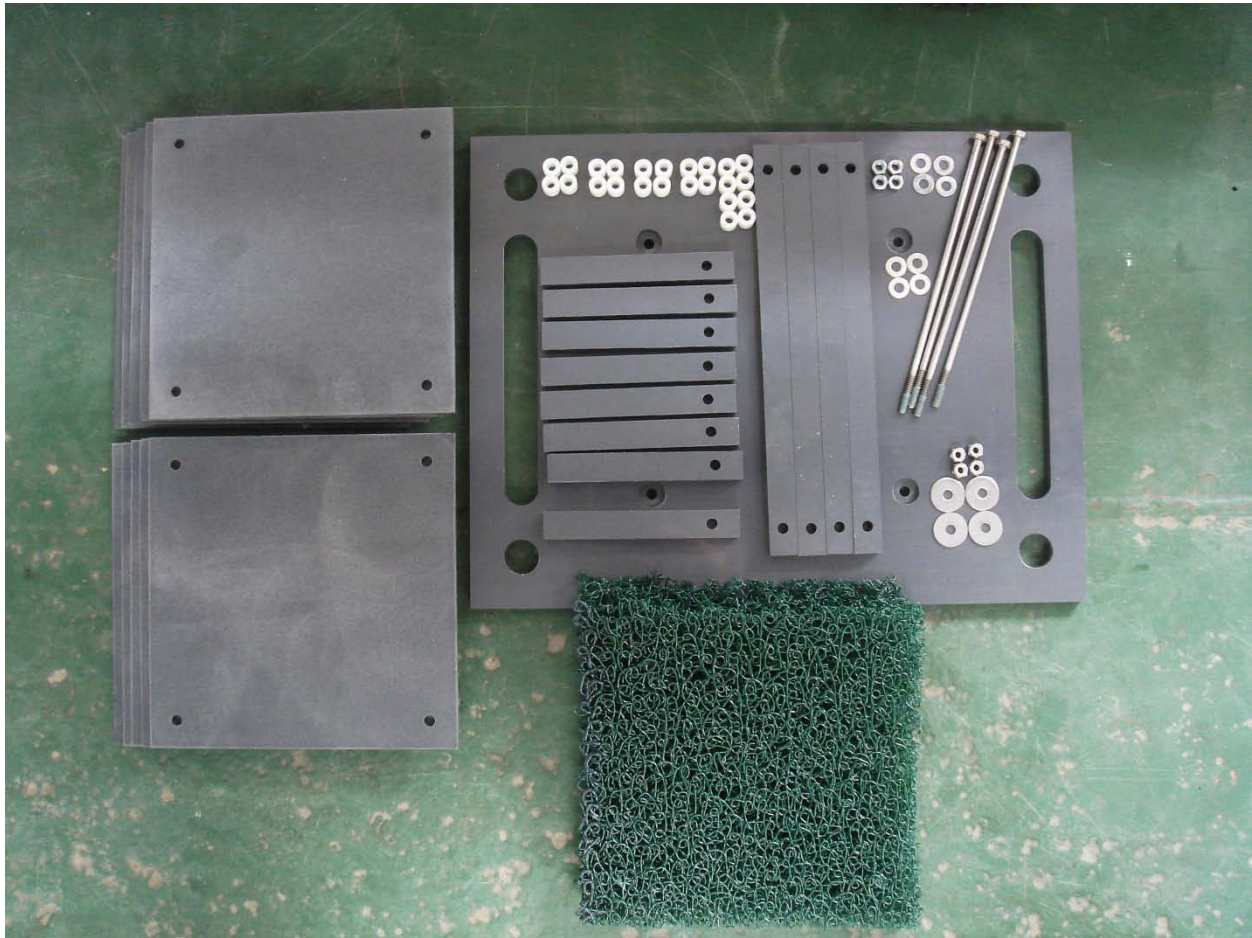


How To Build the ARMS (Autonomous Reef Monitoring Structure)

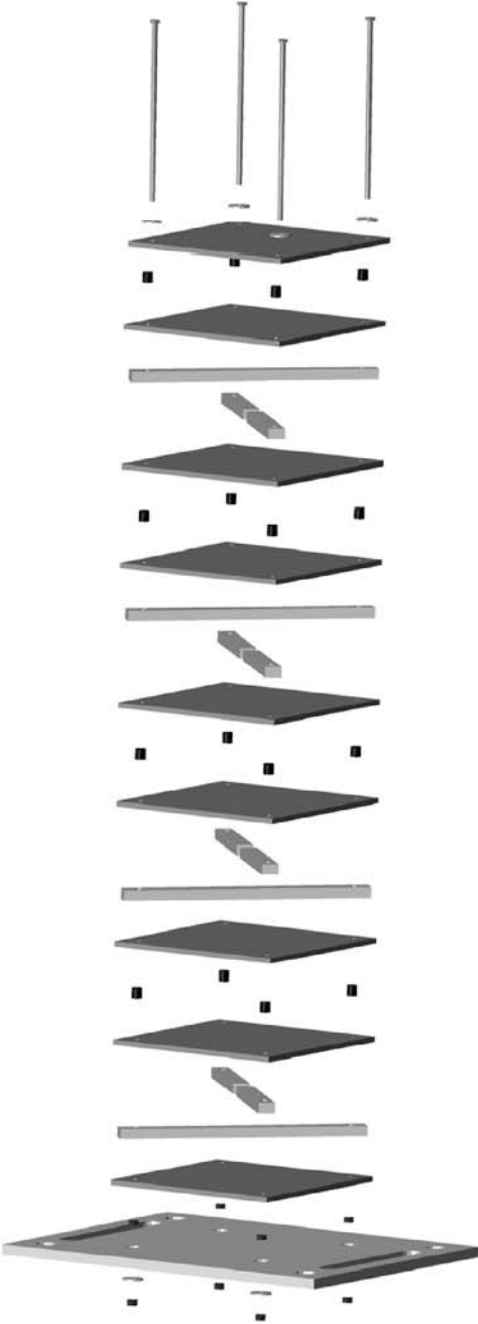
ARMS Assembly

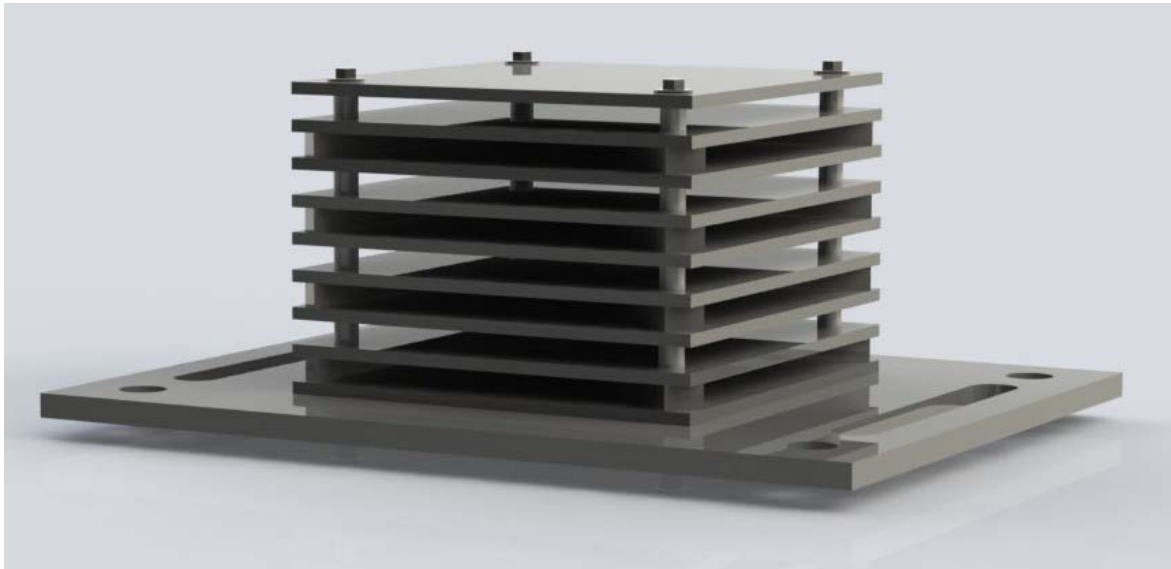
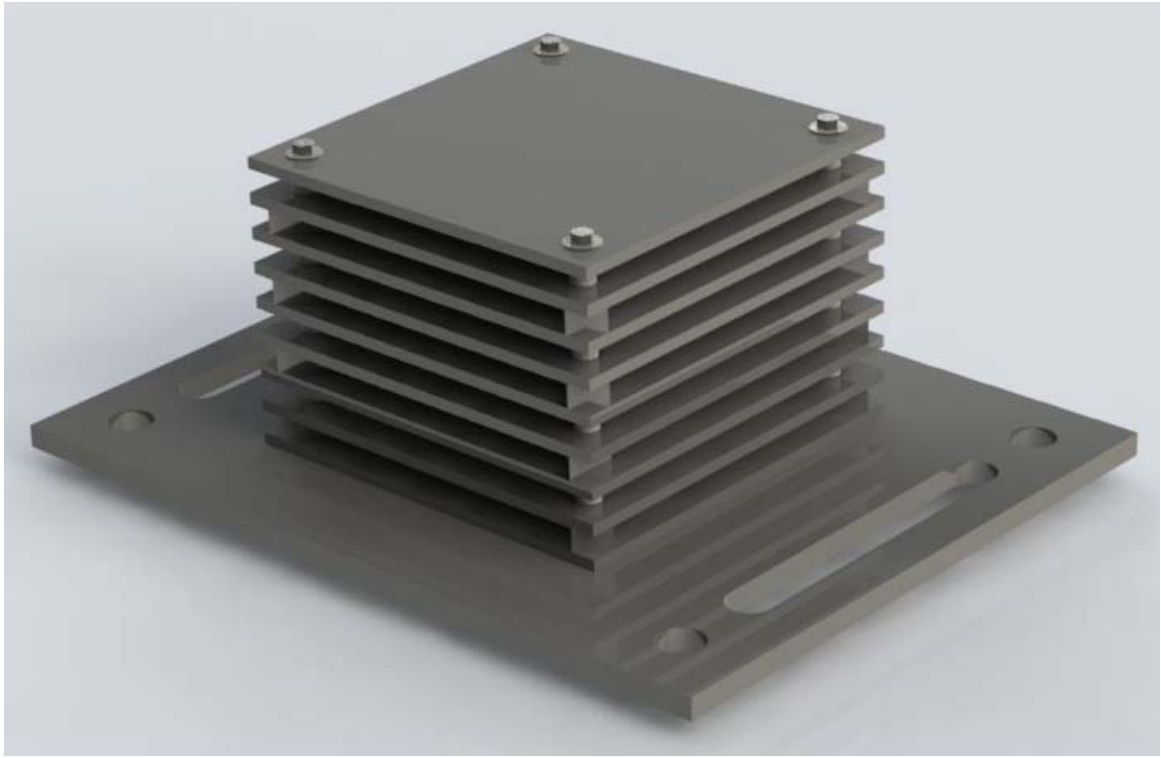
Materials



QTY	Description
9	PVC Layer Plates (225mm x 225mm x 6.3mm)
1	PVC Base Plate (450mm x 350mm x 12.7mm)
8	PVC Short Cross Spacers (140mm x 20mm x 12.7mm)
4	PVC Long Cross Spacers (300mm x 20mm x 12.7mm)
16	1/2"-tall Nylon Spacers for 1/4" Bolts (0.257" ID x 0.500"OD x 0.500")
4	1/4"-20 x 8.5 Bolts, Stainless Steel
12	1/4" Flat Washers, Stainless Steel (two different sizes pictured above as larger washers were used for the baseplate)
8	1/4"-20 Jam Nuts, Stainless Steel

ARMS Assembly Schematic

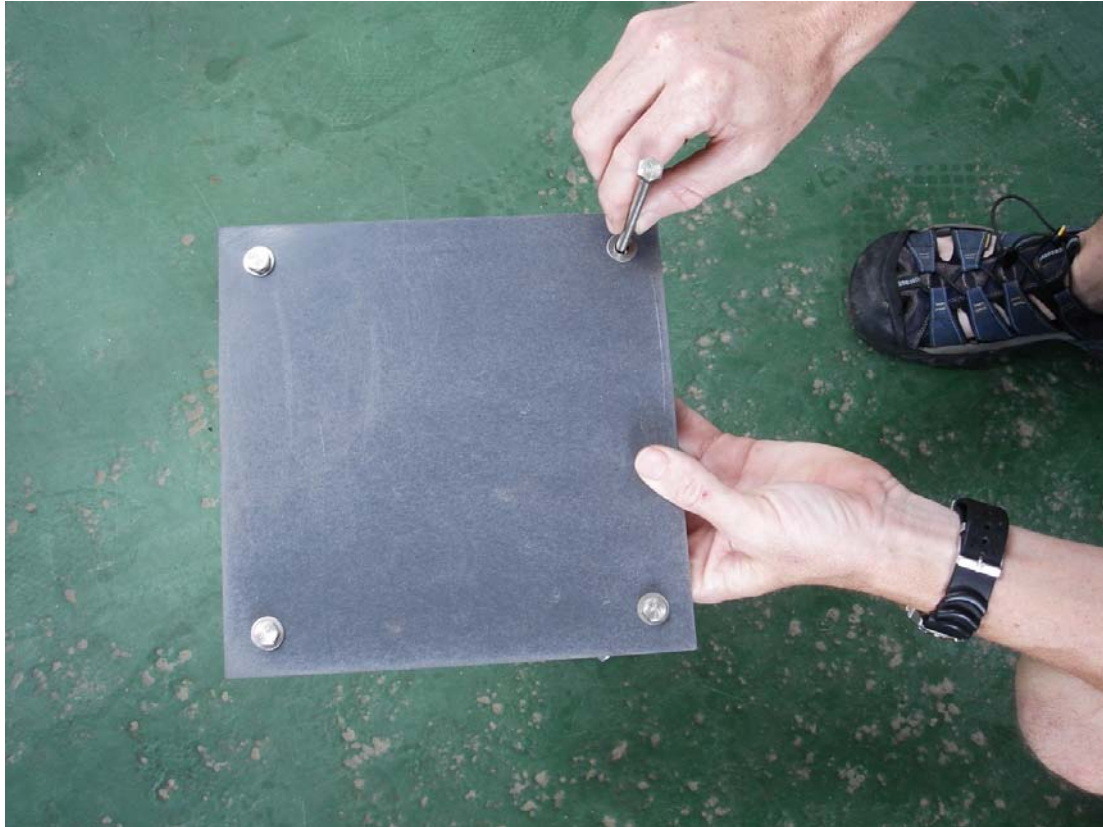




ARMS Assembly Procedures

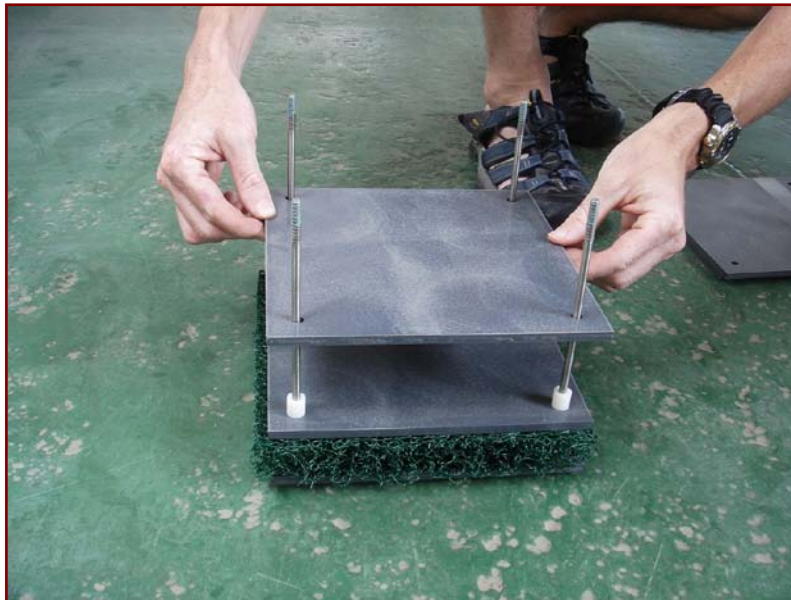
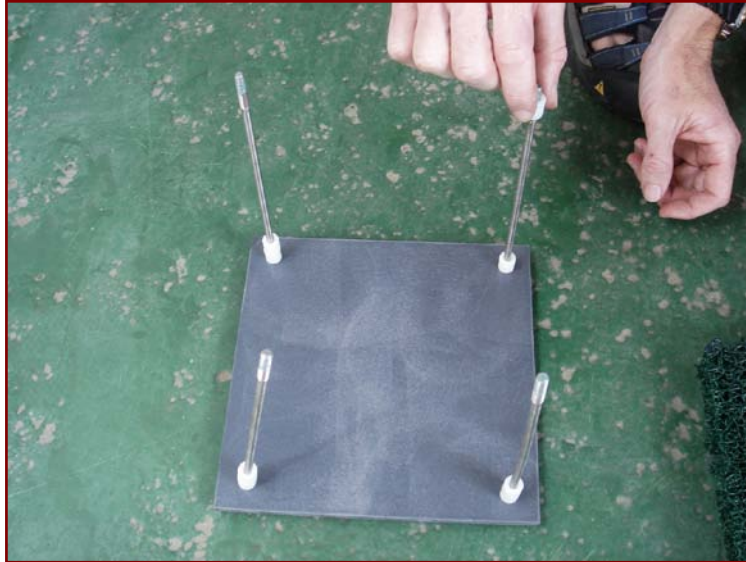
Step 1: Top Plate

Place a washer on each of four bolts, and then run the bolts through the four corners of a single layer plate. This plate will now be the top plate of the ARMS under construction.



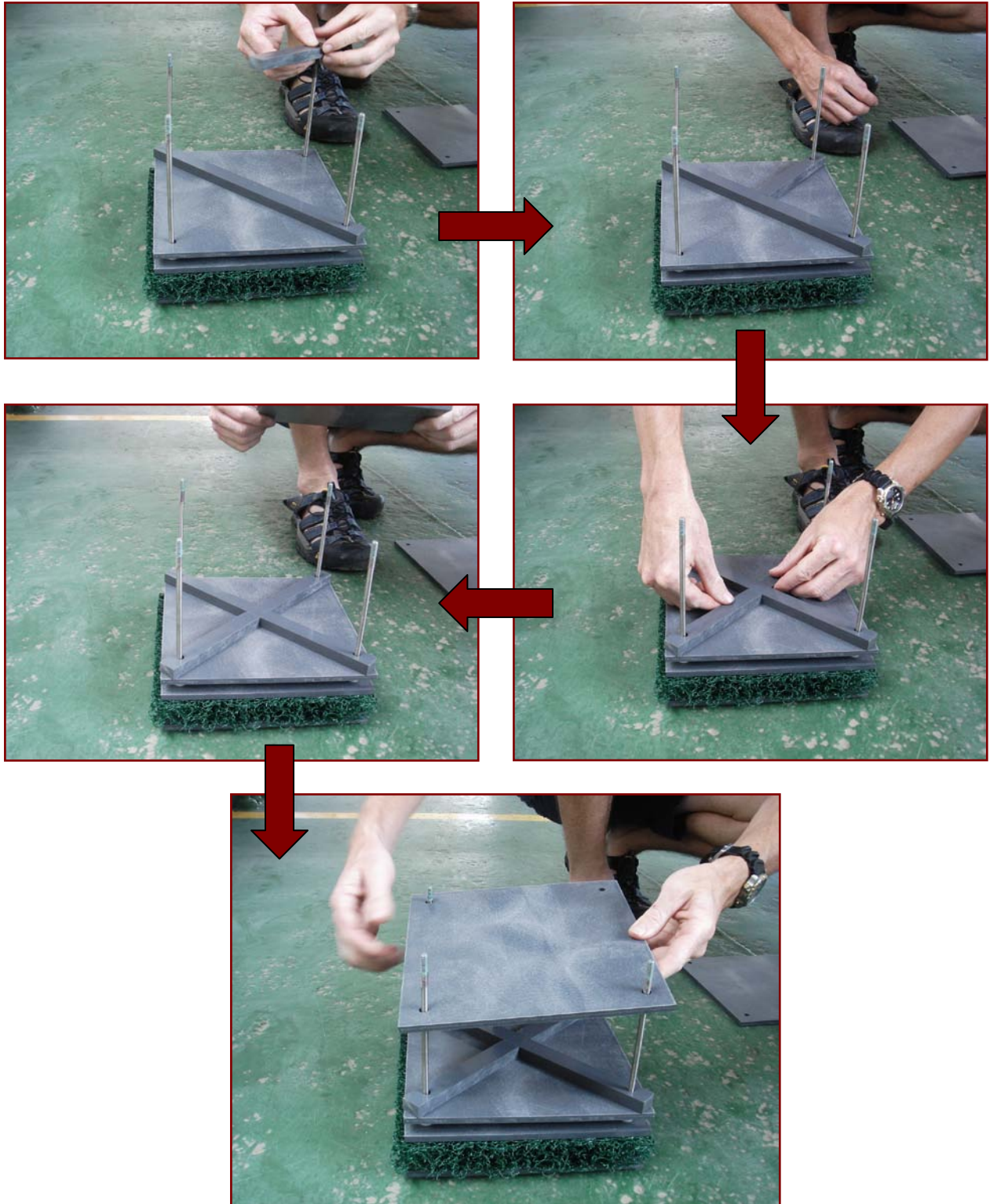
Step 2: Open Layer

Turn the top late over, so the bolt heads and washers are down and the bolts are sticking up through the plate. Begin constructing the various layers of the ARMS. Slide 1/2" nylon spacers onto each bolt then add a PVC plate.



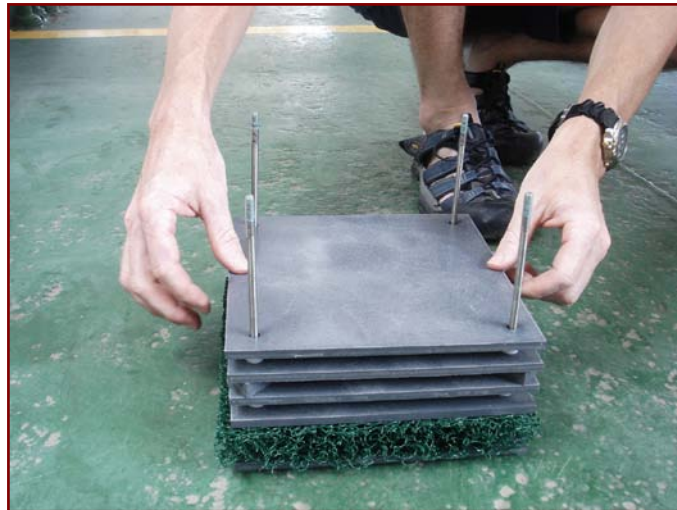
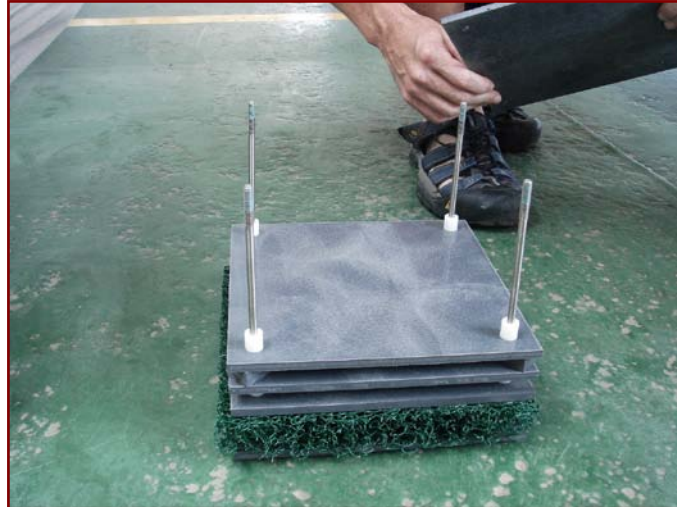
Step 3: Closed Layer

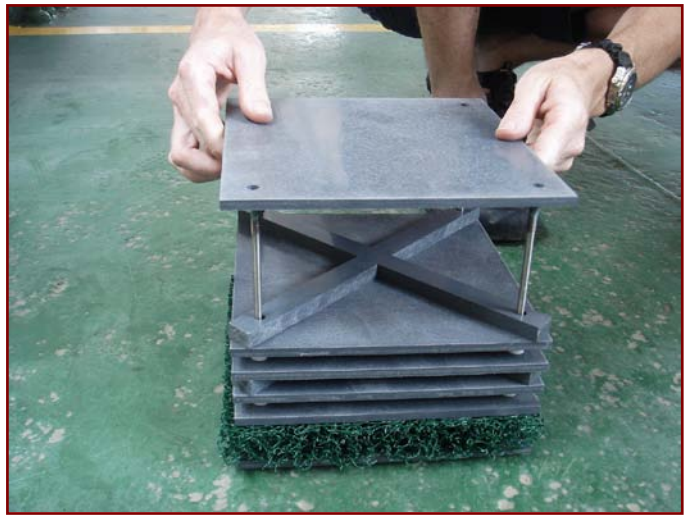
Closed layers are created by using one Long PVC Cross Spacer and two Short PVC Cross Spacers. Slide a long spacer onto bolts located diagonally across the ARMS. Slide the short spacer on the remaining bolts such that they each contact the long spacer at a right angle, thus creating 4 equally sized triangular spaces on the plate. Finally, add another layer plate to complete this first closed layer.



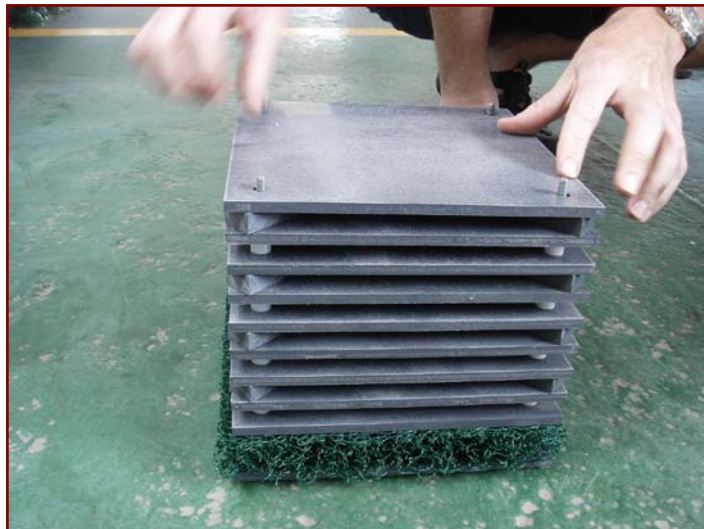
Steps 4-9: Additional Layers

Continue to alternate construction of open layers and closed layers, until there are three more layers of each type. As such, the completed ARMS will be comprised of one Matala Mat layer, four open layers and 4 closed layers. The following slides will illustrate.









Step 10: Completing the Arms Tower

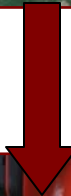
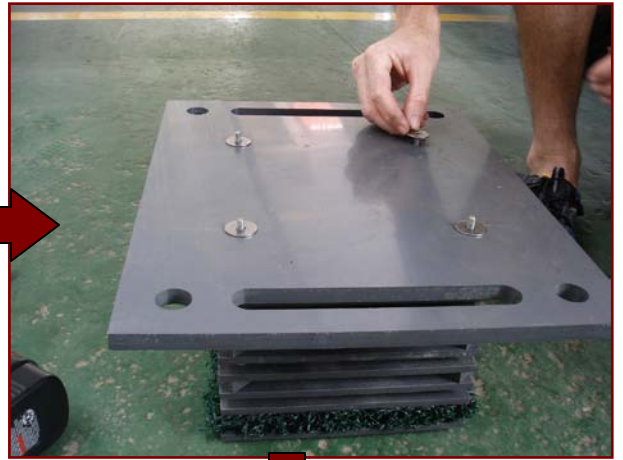
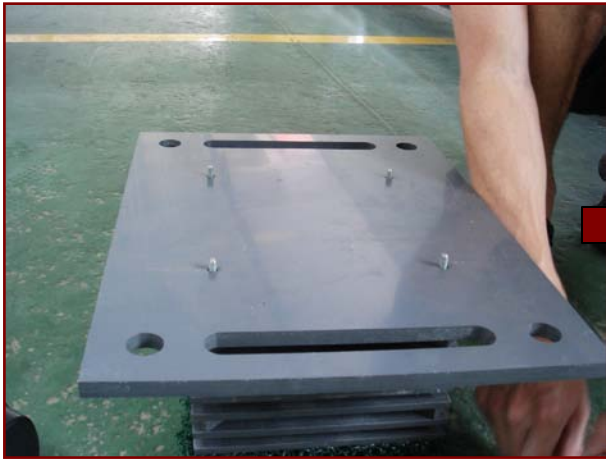
Once the last layer plate is added, thus completing the final closed layer, add a flat washer and jam nut to each of the four bolts and tighten each nut securely. (Note: It is highly advisable to add Aqualube/Aquashield™ or silicone grease to the threads of each bolt to prevent nuts from freezing to the bolts as a result of deployment in saltwater. This will greatly facilitate subsequent removal of the nuts during ARMS processing.)



Step 12: Base Plate Assembly

The final step in ARMS construction is to attach the base plate to the tower of layers. Simply lay the base plate over the bolts (with the counter sunk side down) and add a washer and a lock nut to each bolt. Tighten securely.





Completed ARMS

With the base plate attached, the ARMS is now fully assembled.

