

Geodesic Dome Exact Fit Platform Build



PHOENIX DOMES

Why not a round platform?



While a round platform can work alright for larger domes (4V or higher frequency), it is not recommended for our most popular 3V domes as the curve would stick out in between the hubs.

Follow our precision designed Exact Fit Platform Plans for the best results!

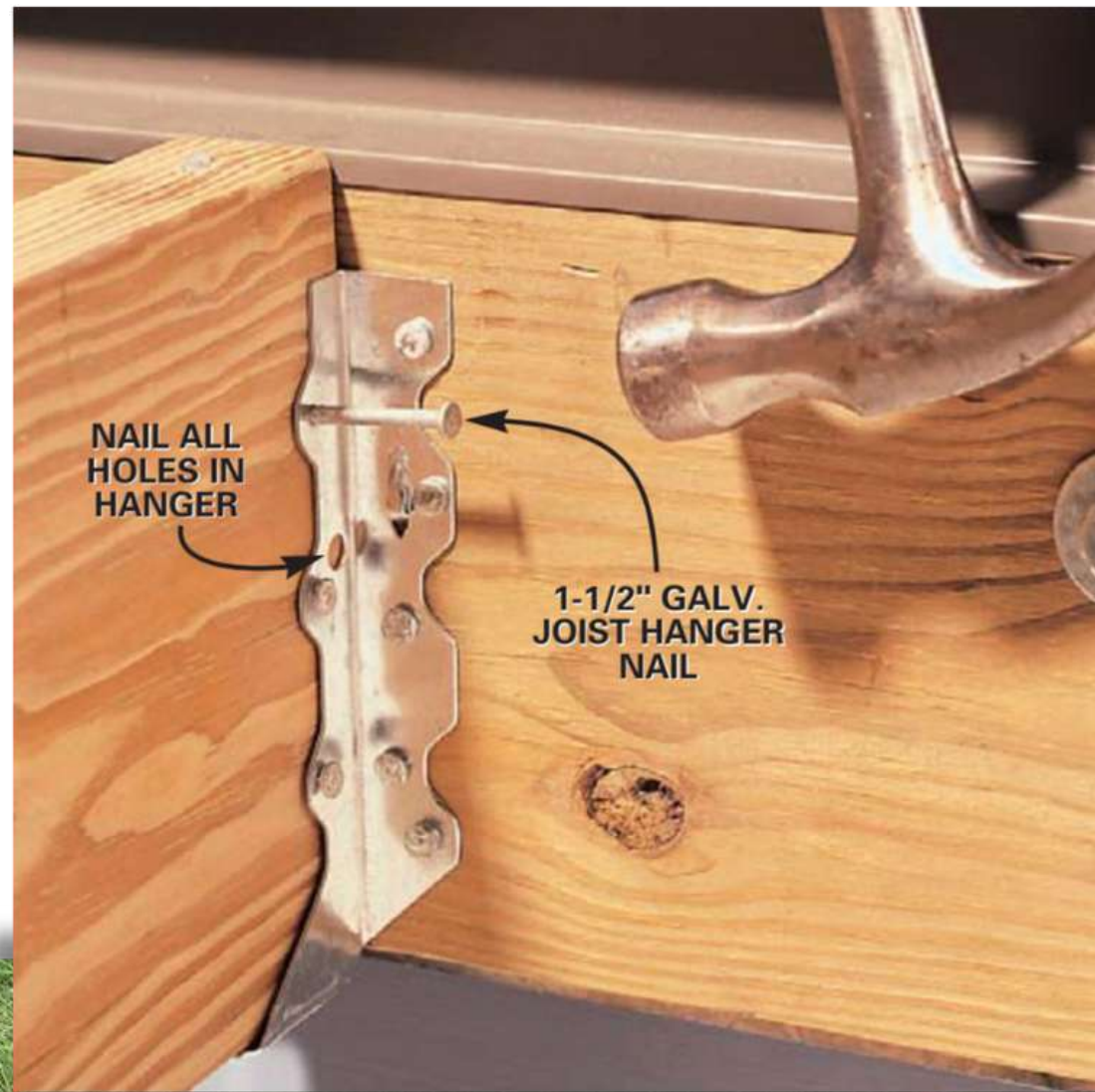
Deck Blocks and Runners

- These are the bottom supporting structure. Please note that the runner structure has less sides than the upper joist structure - this may seem strange, but it saves material, time, cuts, and deck blocks, while supporting all sides of the joist structure!
- They are cut out of treated 4x6 beams. If you cannot find these at your local building supply, a triple layer of 2x6 lumber will also work like in the picture below.
- On level ground, the runner structure can rest directly on post saddles on the deck blocks.



- On sloped ground, you will need to use posts or screw piles in order to build up the support structure.





Use post saddles on top of the deck blocks - they will need to be larger than the beams to accommodate for the angle
Use simpson strong ties on the corners and joist hangers where the joists meet the perimeter.

Now we are coming to the most confusing part we always get asked about:

How does the bottom layer of plywood sit on the runners?

The answer is - it doesn't. It is attached to the underside of the joist structure.

Build your 2x6 joist structure according to the plans and cut list, using joist hangers and tie plates.

Then slide the plywood underneath piece by piece with some help and screw it into the underside of the joists from the bottom.

You may want to build the joist structure in sections to make this easier.



It may make sense to build the joist structure in sections so that it is easier to attach the plywood to the underside.



Once all the bottom plywood is in place, trim the edges and you can place the insulation batting between the joists. We recommend Rockwool as it is more resistant to moisture and critters don't like to live in it.

The bottom plywood provides more structural rigidity, however we have seen people use hardware cloth (fine, rodent proof stainless steel mesh) on the bottom to hold the insulation as well.



At this point you will also want to make sure that all your services are in place - plumbing, wiring, ducting etc.



Lay our the subfloor 3/4" plywood on the joists according to the pattern on the plans and screw it down. You may want to use wood filler in the cracks.



Tip: for a low-budget yet beautiful floor, you can use a tiger torch to lightly burn the plywood and bring out the wood grain, and then apply a couple of layers of clear flooring finish to seal it. Please make sure to do this BEFORE you set up your dome so it doesn't light on fire!



Rectangular decks

What is wrong with this picture?

Nothing, you may think - it looks like the perfect luxury Dome resort setup!

It may be nice to have a larger deck around your dome so you can walk around it and have a sitting area, like in this picture.

However, this can bring with it some complications for weatherproofing and insulation. Also, decking is expensive, so why waste it underneath the flooring of your dome? Floor Insulation is a factor as well - without it, your dome will be 3-season at best.

We strongly advise against simply plopping a dome onto a rectangular deck. Water will run under the edge, quite possibly causing rot, mold, insect infestation and other problems.

There are a few ways to help avoid these issues:

1. At the very minimum, cut a perimeter gap in the decking so that rain water can drain through and down and cannot travel into the dome, and tuck the cover skirt through that gap to the best of your ability.



Plan for better weatherproofing from the start:

- Build your larger deck structure, then lay out a plywood subfloor on top in the measurements of our exact fit platform plans.
- Insulate the subfloor from underneath by adding blocking and insulation or sprayfoam from the bottom
- Cut the dome skirt in order to tuck between the joists, and ideally add a weatherproofing membrane on the joists where the water will run off the dome.
- Then run the decking up to the outside of the dome with a drainage gap for water.
- This is still not ideal as water will still continuously run down the joists when it rains, but at least water will not be able to seep into the dome, or sit on your decking - but much better than the centerpede infestation, rot and mold we have seen under the wet flap...



Build up from the deck:

- Build your larger deck structure, then build up the top joist structure only of exact fit platform plans - including the insulation and top plywood.
- don't waste expensive decking underneath the platform - 3/8 plywood will do!
- ideally leave a drainage gap around the exact fit platform to avoid excessive moisture on the decking



Dome floor integrated in deck:

- This is another way of doing it - the joist structure is integrated in the deck only raised up a little bit - but don't forget that drainage gap for the cover skirt to tuck through!



More pictures to illustrate this option



Build your sitting deck where you need it

You may only need a sitting deck or porch on one side of the dome - a walk-around deck often has a lot of wasted space (and expensive lumber) where it will rarely ever be used.

Just build a deck where you need it after the platform is built - and again, make sure to leave that drainage gap (not in picture) for runoff water to shed.



Weatherproofing your Dome

Start by stapling the cover skirt to the outside edge of your exact fit platform.

With the removable panorama window, you will not want to staple the skirt below the window. You could apply sticky velcro tape to seal it and still be able to open it.

We have found a type of PVC trim on a roll (shur trim wall base at home depot) useful for both the outside and inside edges of the dome. You can staple or screw it and caulk the screw holes.



Concrete Slabs

A number of customers have opted for concrete slabs, often with integrated in-floor heating. This may be more cost-effective considering lumber prices, and definitely a long-lasting and comfortable option.

To create your concrete form, start from our exact fit platform plans, use the perimeter measurements and cut angles. Use the measurement on the SHORT side of your lumber instead of the long side. That way your concrete slab will be the same size as the wooden platform would it be.

All the services can be integrated into the concrete slab.

For anchoring the bolt, you will use expansion bolts through the dome brackets. It may be advantageous to have some type of perimeter drainage around the dome (gravel etc.) to make sure that all water can run away from the structure.



