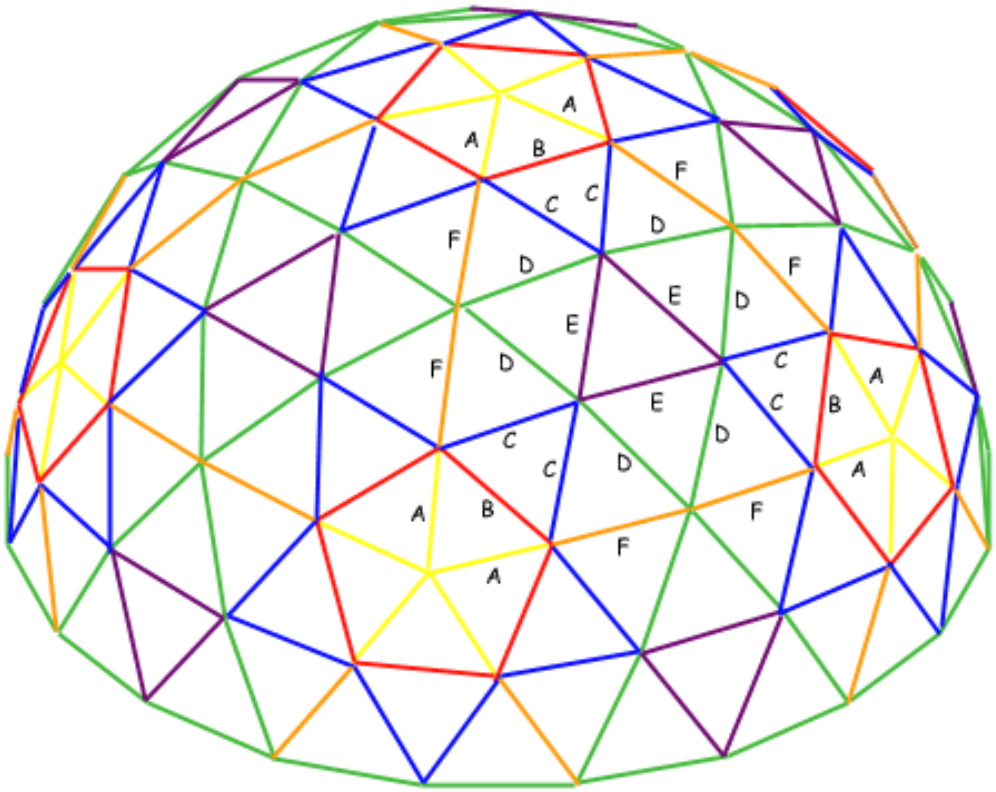
| | Length | Color | # |
|---|---|---|---|
| A | - | Yellow | 30 |
| B | - | Red | 30 |
| C | - | Blue | 60 |
| D | - | Green | 70 |
| E | - | Purple | 30 |
| F | - | Orange | 30 |
| 4 Star base hardcore geohub | | | 20 |
| 5 Star hardcore geohub | | | 6 |
| 6 Star hardcore geohub | | | 65 |
| Diameter | | - | |

# Frequency 4 Dome (4V)




ALWAYS check the color codes before you glue the struts to the hubs. This graphic will serve as your map in building your dome. It is a symmetrical pattern, so the opposite side is a continuation of the pattern seen here. Following the instructions is optional, but highly recommended!

Step by Step Instructions to build a 4V Geodesic Dome Using Sonostar ***hardcore*** Geohubs. Builders can choose to either use the included stainless steel nuts and bolts to attach the hubs, or use PVC welding glue (for a permanent dome), or both.

1. Use the dome calculator to determine the correct length of the different size struts. Make sure you designate ½" PVC as your pipe size, so it will automatically deduct the 2.28" of hub width from each length.
2. Cut all your struts before you begin. The hubs are designed for Schedule 40.
3. Use a PVC cutting tool to cut the pipe, or set up a table saw or cutoff saw.
4. Color code all your struts with a stripe of colored electrical tape about 6" from either end
5. Follow the color coded map. A laminated copy will be included with the kit, but you can print more copies and affix them to something stiff, ie. Cardboard.
6. Lay all your parts out beforehand and make a final count.
7. If using glue, have enough PVC primer and welding glue on hand to do the job.
8. If using glue, apply primer to all your struts prior to beginning.
9. If using the included nuts & bolts, drill the holes in the struts using the hub as the template. Make sure the strut is all the way into the hub arm (using the included hard rubber mallet), then drill one side only, then the other. Attempting to drill all the way through will result in bad placement of the outside holes. So drill one side, then the other.
10. If your radius is more than 8', be sure to have a ladder on hand.
11. Build your dome on a flat surface, if possible.
12. Start from the ground up, putting together all the perimeter pieces first.
13. Make sure the curvature of the ground pieces is correct, with all the geohubs oriented in/out.
14. If using glue, apply the PVC cement to either the struts or the hubs or both.
15. Mark your door location with an "X" on the struts that will be taken out (for the door), and then don't glue them or bolt them into the hubs. Once you get to the upper layers, you can remove them so you can go in and out.
16. Lay out one row in advance and have someone else double check the color coding using the map guide. The welding cement sets up almost immediately, and you don't want to mess up.
17. Designate someone to be the photographer. Tell them it's their job.
18. PVC can get brittle when exposed to prolonged UV rays (like anywhere outside) A coat of spray paint will protect the pipes and the hubs.
19. Have fun. Marvel at the genius who figured out all the geometry. Tell your friends what you're doing, and let them help – it's a lot more fun with more people helping.