

21 ft. Geodesic Dome Material list/Approximate Cost (Prices may vary according to your sources)

QUANTITY	DESCRIPTION	Source	UNIT PRICE	AMOUNT
560	Linear feet fence pickets used as lath to attach cover. Fence pickets "Seconds"(Natures Composites -Torrington, WY) cannot order on-line must call. May need to pick up or find comparable souce.	https://www.naturescomposites.com/	0.10	\$56.00
1,296	Square feet of 6-mil Poly cover (36'X36') (J & M Industries) Call to get correct size. J&M May have pieces from other projects that will fit.	https://www.jm-ind.com/products/custom-fabrication/solarig/	0.23	\$298.08
1	30-inch X 30-inch Aluminum Shutter (FarmTek) You may want to use two of these... one mounted in the top and one mounted in the side.	https://www.farmtek.com/farm/supplies/ProductDisplay?mfPartNumber=105113	135.95	\$135.95
1	Solar Powered Liberty Louvre Opener (FarmTek) If you use 2 vents from above you will need 2 openers	https://www.farmtek.com/farm/supplies/ProductDisplay?productId=65545&pageId=ItemDetail&ict=recommendation&icl=proddtl&toSku=105109&fromSku=105113&isDoc=N&rel=nofollow	75.95	\$75.95
2	5-ft stick 3-inch dia. SCH80 PVC water pipe (not electrical conduit) (Material for twenty six (26) 3-inch X 3.5-inch hubs) Must specify "water pipe" for crush strength	https://pvcpipesupplies.com/3-sch-80-pvc-pipe-5-length-pt-8008-030ab.html	20.99	\$41.98
2	packet Eco Wood Treatment or 2 gallons of your choice of stain or paint can also be used	https://www.homedepot.com/b/Paint/Intl-Eco-Wood-Treatment/5-GA-Gallon/N-5yc1vZar2dZ9kmZ1z10liq	54.92	\$109.84
110	2-inch X 4-inch X 8-ft Douglas fir (Stucture + extra for door, framing, & vent frame)	Local Source	4.86	\$534.60
11	2-inch X 4-inch X 8-ft Pressure Treated (Wall base and bottom of door frame)	Local Source	6.73	\$74.03
5	4-ft X 8-ft sheets 3/8-inch or 1/2-inch panel for base sheeting & base trim for skin attachment & door frame	Local Source	47.60	\$238.00
4	4-inch Hinges (Door Hardware zinc plated)	Local Source	6.30	\$25.20
2	4-inch bale type latches (Door hardware zinc plated)	Local Source	7.20	\$14.40
130	9/16-inch Ny-lock Nuts (zinc plated)	Local Source	0.14	\$18.16
40	9/16-inch Nuts (zinc plated)	Local Source	0.10	\$4.17
130	2 1/2-inch X 3/8-inch Hanger Bolts (zinc plated)	Local Source	0.35	\$45.50
1	8 oz bottle Gorilla(TM) glue	Local Source	9.96	\$9.96
20	3/8-inch X 5-inch carriage bolts (zinc) Attached Dome to base wall	Local Source	0.26	\$5.20
20	3/8-inch X 4-inch carriage bolts (zinc) Attach base wall sections together	Local Source	0.21	\$4.20
40	3/8-inch Fender Washer (Zinc)	Local Source	0.03	\$1.20
5	pounds 3-inch inch torx head wood screw	Local Source	10.00	\$50.00
5	pounds 1 1/2-inch torx head wood screws	Local Source	10.00	\$50.00

\$1,792.42

<http://www.domerama.com/calculators/2v-geodesic-dome-calculator/>

updated 5/11/2020

NOTE:

If you enter a measure in feet, your results are in feet or, in the case of floor area, square feet. Same goes for meters.

When entering in feet, decimals are fractions of a foot or square foot (for example: 2.75 = 2'9").

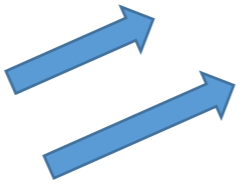
Clear Values

Spherical radius	<input type="text" value="10.500"/>	<input type="button" value="Calculate"/>
Spherical diameter	<input type="text" value="21.000"/>	<input type="button" value="Calculate"/>
Height	<input type="text" value="10.500"/>	<input type="button" value="Calculate"/>
Floor area	<input type="text" value="324.017"/>	<input type="button" value="Calculate"/>
Perimeter	<input type="text" value="65.973"/>	<input type="button" value="Calculate"/>

Perimeter: total length of all base struts

feet (or meters) of pipe/lumber

NOTE: if bolting struts, you need to add extra length to your total above. The formula is: (tip to hole center) X 2 X number of struts. Ex.: a dome requiring 100 struts with bolts 3/4" from the tip requires 100 X 3/4" X 2 = 150 inches (12.5 feet) more to the total above.

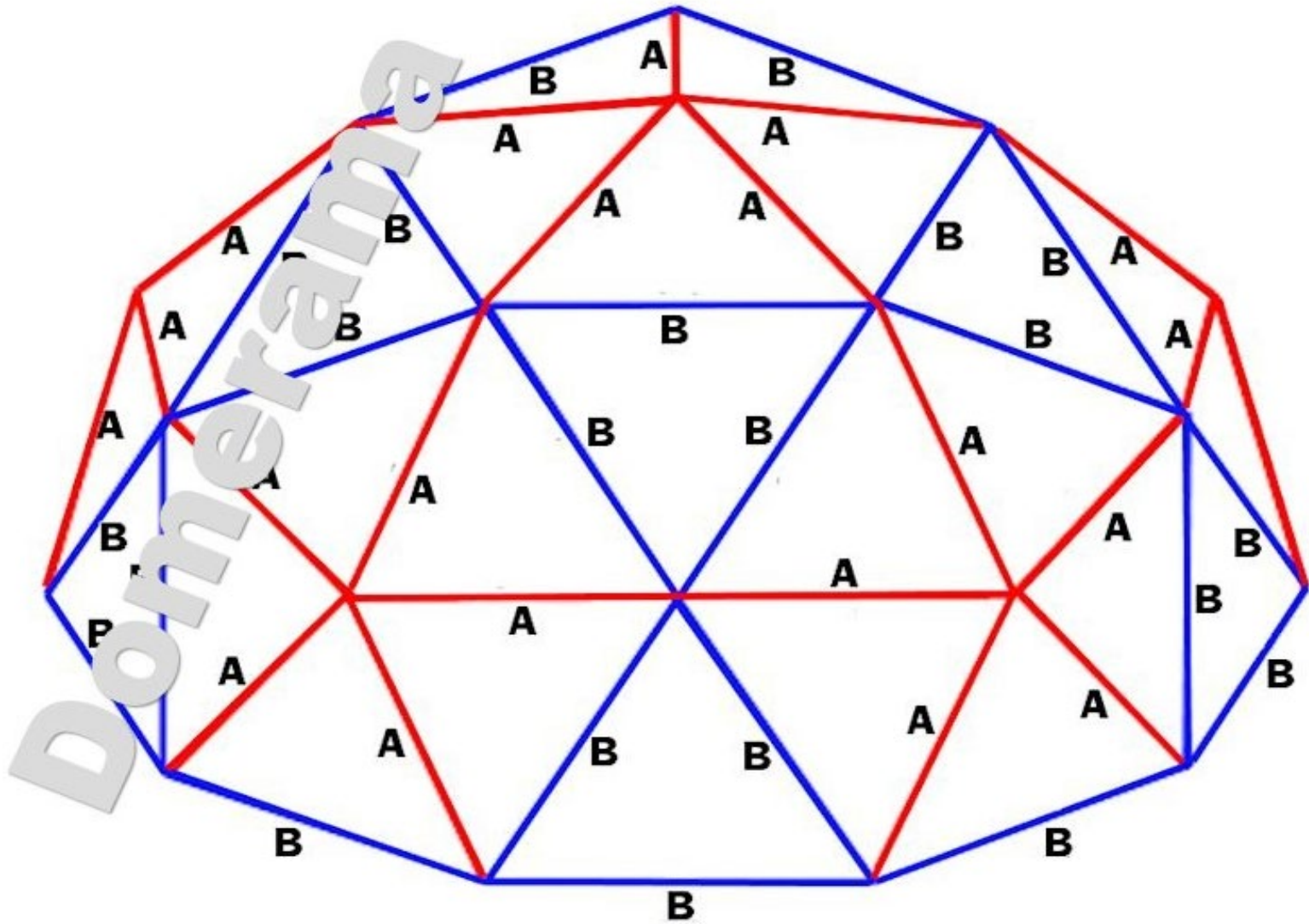


STRUTS	ANGLE
30 X "A"	<input type="text" value="5.739"/> 15.86°
35 X "B"	<input type="text" value="6.489"/> 18°

For conduit, you can round bend angles to the nearest degree. For timber domes, angles should be to the nearest tenth of a degree.

<https://www.spikevm.com/calculators/decimal>

Feet	inches
5.739	68.868
6.489	77.868



Note that each level is a single color (bottom is all blue, middle is red, top is blue).

Items that must be pre-cut and assembled

		Item	Length (inches)	Pieces	Material Details	Cut Angle (degrees)
		Base Bottom Rail	78	10	Pressure Treated	18
		Base Top Rail	78	10	Doug Fir	18
		Base vertical supports ("studs")	13	50	Waste Doug Fir or Treated	0
Original Length	Less space for hub (Inches)	Side Panel (Exterior cover sheet)	78	10	78" X 16" panel	0
78	5.5	"Spacer" - attached to base top rail - allows space for hub to fit	72.5	10	Doug Fir	18
69	3.5	Strut "A" @ 16 degrees	65.5	32	Doug Fir	16
78	3.5	Strut "B" @ 18 degrees	74.5	33	Doug Fir	18



Must make these



All Base Rails and Struts should have this shape and cut at either 16 or 18 degrees

<https://www.spikevm.com/calculators/decimal-feet.php>

0.868 = 7/8"	Strut "A" @ 16 degrees	69 inches
Can round up! Final lengths are...		
	Strut "B" @ 18 degrees	78 inches
From Page one		
Feet	inches	
5.739	68.868	

6.489

77.868