

Constructing a Yurt Platform

Choosing and Preparing a Site for the Yurt

Choosing a site for your yurt is extremely important. There are many factors to consider. It is a good idea to choose your site prior to building your yurt, as your site location may affect what size yurt you choose to build. There may be some trees that are near your yurt site that will limit how big you choose to build, or may direct how high off the ground your deck will be.

As you look for your site, make sure you choose a spot that gets sunlight. Look around and make sure there are no dead trees or dead branches that may fall on the yurt. If they are, remove them before starting to build your deck or set up your yurt. Next, find where you want your center to be, and clear any trees or bushes that are in the way. Some people choose to build decks that are elevated off the ground in order to leave some shade loving growth under the yurt or create room for storage/ a lower level. After you have cleared the area directly under your yurt, look at the areas close to the outer diameter. It is important to give yourself some room to work around the sides and give any close trees room to grow without touching the yurt. You should be able to reach all sides of your yurt with a ladder for ease of opening windows (if elevated from the ground) and any repairs or adjustments you may make overtime.

Other factors you may consider include positioning your yurt with a south facing slope, location of trees, water, and other natural surroundings. You can build your yurt on flat land, on a hillside, near a pond or creek, or any other place that you would like to live by. If you are on a coast and you are vulnerable to flood waters, simply build the platform taller and leave cutouts for the water to flow under the yurt. Consider how water flows near or around your yurt, as water can create mold issues in warm, wet climates.

The view from a home's windows is as important as the home's location. It's a wonderful thing to build on a coast or to overlook a beautiful valley or mountain range. Of course, what we see in the distance is important, but we tend to notice what is just outside our windows, close to the yurt even more. This view is always changing, based on the seasons and our own projects. In some cases, you may choose to create a view by building patios, adding landscaping, creating ponds and more. If you use common sense and these three words (location, location, location) you will find your yurt experience greatly enhanced. Good luck doing it "yurt" self.

Building a platform for a yurt

**Note – These instructions are a basic design and are dependent upon the specific codes required for deck building in your area. Therefore, you are responsible for checking with the county departments on what those codes are and adhering to them.

Basic Information for yurt platforms

This section will attempt to guide you through some of the many decisions you will need to make when building a platform for a yurt. It is important that you familiarize yourself with local codes even if you are not planning to have the platform inspected. These codes address issues such as freeze lines, length of board spans, hardware and steel requirements for footers and posts, required bracing and many other factors that will ensure a safe platform. Learning and understanding the reasons for these local codes is highly recommended.

There are many ways to build a deck, and many decisions to make along the way. These variables are too numerous to try to make recommendations for each choice so we will just try to explain the decisions we generally make when building a yurt platform.

We will take into consideration several factors. Some of the things we feel a good platform should accomplish:

- Affordability with good use of materials
- Structural soundness and safety.
- Easily accommodates the addition of an exterior deck
- Provides a usable storage space under the platform
- Is easy to insulate while protecting the insulation from water damage

Building a Platform that tries to be an all in one platform and exterior deck creates a few issues. The yurt platform needs to have an elevation change from the deck to keep water out of the yurt. This is why we recommend building a round platform initially and adding any exterior decking at a later time.

Getting Started

Here are some of the main tools that you will need to build a yurt platform:

- String and Chalk Box (used to make sure joists are straight and to locate joists for screwing down the plywood)
- Circular Saw (used to make many different cuts including the circular cut on the plywood)
- Reciprocating Saw (makes it easy to trim posts and fix any mistakes along the way)
- Miter Saw(helpful in making the 22.5 deg cuts for the octagon but not necessary)
- Caulk Gun (to seal the plywood to the band to prevent water from getting into the insulation)
- Stapler (to hold the home wrap to the floor joists and the octagon and to staple the linoleum to the band board)

- Hand saw (makes cutting the 2x6 joists at an angle easier)
- Shovels (to dig footers)
- Wheelbarrow
- Post hole digger
- Water level or standard level (used to level the octagon. The water level method is much easier and more accurate than a standard level especially on a larger platform)
- Paddle bit (used to drill holes for through bolts for octagon and posts)
- Hammer, Nail gun or drill(used to attach all deck pieces together we prefer star head (torque) screws that don't easily strip out, allowing disassembly later if needed)
- Drill and Tips
- Sawhorses
- Ladders Short and Tall
- Razor Knife (useful for cutting fiberglass insulation and many other cuts you will make during the project)
- Buckets for Water and Concrete
- Wheelbarrow (for dirt removal, concrete mixing and to move the beverage cooler closer to the work area)
- Chainsaw (can be used to make post cuts faster and easier)

Yurt Platform Materials:

- AdvanTech or Home Advantage tongue and groove $\frac{3}{4}$ " 4x8 plywood
- 2x6s non pressure treated (for floor joists)
- 14 1/2" 2x6 blocks
- Pressure Treated 2x8s or wider for octagon and center support boards (2x6s may be used for small yurts if there are no plans to add an exterior deck)
- 4x4 or 6x6 posts- (# and size determined by the height of deck)
- Breathable home wrap
- 3" to 3.5" exterior star head screws and shorter 1 5/8" deck screws
- Insulation of choice (rigid foam, spray foam, green fiber, or fiberglass)
- 5/8" Through or lag bolts (galvanized)
- Staples, and button caps (for holding insulation in place)
- Concrete, rebar, metal hardware for the footers
- Choice of flooring

Footers

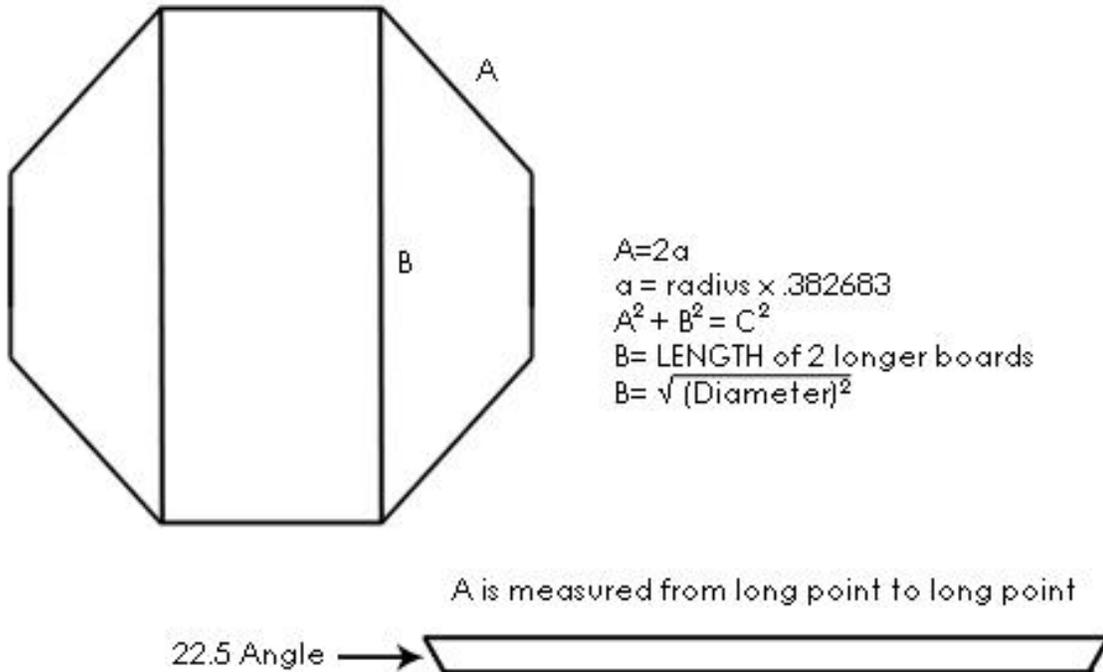
- We recommend that the lowest point of the band be no lower than 2' off the ground. Reasons include preventing wall cover rot caused by rain splashing from the ground onto the sides and accessibility. If ground is level or steep, the #, size and lengths of the posts can vary greatly.
- Check local codes to find out what method of footers should or can be used in your area. There are many different ways footers can be done:

- Pier blocks (often used for deck posts) can be used in ground that is very difficult to dig holes for pouring footers into. In this situation we recommend using metal trailer tie downs to secure deck to the ground. If it is too difficult to get the tie down anchors in the ground, you can either – drill into the rocks using mason bits and masonry bolts or pour concrete around the pier blocks and posts to create a heavy mass as a last resort.
- We will not go into footer suggestions due to the large number of variables and regulation is different areas, but our local code requires that we dig the footer 2x2' about 24" deep and make a rebar matt that looks like a tic-tac-toe board.
- We have built footers by simply digging a hole, pouring several inches gravel rock in the bottom of the hole, drilling some screws in the post where it will sit below the concrete and putting it in the hole. We then mix the concrete and pour it in the hole. This method might be good enough for a smaller yurt that is not high off the ground, but could be dangerous for taller platforms in loose soil.
- ✓ Again it is important to understand and follow local codes. The foundation of any structure is the most important part

Yurt Platform:

- Cut 8 pieces of 2x8 or wider with 22 ½ degree angles leaving one side with the short ends and the other with the long ends.
 - ✓ The size of 2x you choose will depend on several factors: 1) local codes 2) size of the yurt 3) If you plan to build an exterior deck onto the yurt deck 4) personal preference.
 - ✓ The wider the board you choose, the easier it will be to hook a joist hanger to it for an exterior deck and also with which to attach the posts.

- Screw their ends together with at least three 3 inch screws from each direction. This will form an octagon which will be your support base for your floor joists. Use this formula to determine the length of the octagon boards and the length of the center support boards:



- Next, add the center support boards. You will need 2 to 4 of them depending on the size of the platform.
 - ✓ We like to make the octagon a little smaller than the diameter of the yurt to help protect the posts from water and also to help utilize shorter length boards. For example If you were to calculate that the octagon pieces need to be 5'2" you may want to make them 5' long and cut a 10' board in half.
 - ✓ If you use the exact calculation and a 2x8 band board, the post and band might hit each other.

- Choose a good location for the platform and mark its center. With a string or tape measure, have someone hold one end over the center while another walks the radius all the way around center.
 - ✓ Try to avoid having tree stumps or rocks ending up where you will dig footers and place your support posts.
- Using scrap wood or blocks, and the help of a couple friends, raise the octagon off the ground to the desired height. Stabilize the lowest side of your octagon first then proceed around the yurt ensuring that the finished height of the lowest side will be at least 2' off the ground.
- Level the octagon as you go using the scrap lumber to hold it in place. Use two screws in each one and make sure to place these temporary support boards in the centers of the octagon pieces to keep them out of the way when digging the corner posts (which will be placed under the corners of the octagon).
 - ✓ We prefer using a water level which is a clear tube filled with water and, for easier visibility, food coloring. Another good option is a laser level. A long level will also work but may not be as accurate on larger yurts.
- Determine the location of the posts and plumb down from each one to determine where to dig your footer.
- Dig and pour concrete in the footers as recommended by local codes.
 - ✓ Be sure there is no rain in the forecast before pouring.
- Come back and add your posts the next day at the earliest to allow plenty of drying time.
- Attach the posts to the octagon and its center support boards using through or lag bolts and screws; possibly even metal ties if needed.

Now you are ready to put on the breathable house wrap. *This step can be skipped if you do not plan to insulate your deck or if you plan to insulate later.

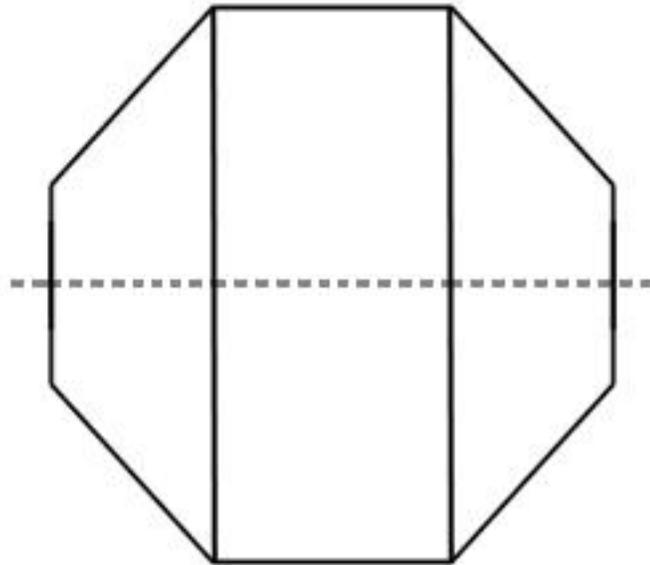
Lay and staple a breathable home wrap type material across the octagon (printed side down) with enough over-hanging the edges of the octagon to wrap up the sides of the joists when attached on top of the wrap (at least one foot wider than the diameter of the yurt all the way around, which means that, on larger yurt decks, more than two runs of wrap may be necessary to cover it).

You are ready to attach all of the joists to the octagon.

Floor Joists

- Determine the dead center of the octagon and set the first floor joist perpendicular to the center support boards.
 - ✓ It may be necessary to use two joists in each run to make the full distance across the octagon. If this is the case you will want to stagger the joints from one run of joists to the next.
 - **Diagram of staggered vs. non-staggered)
- On the 1st run, use a string pulled tight from one side to the other to be sure it is in a straight line across the octagon with no bows/curves. Lay the rest of joists across the octagon at 16" on center. You may choose to space them 2' on center if your joist and or decking boards are rated for it.
- ✓ Using several 14 1/2" (22 1/2" with a 24" on center layout) long pre-cut blocks down each run between joists is an easy way to keep them spaced correctly, Sometimes it is necessary to add or subtract a 1/16 of a inch to the block depending on the thickness of the wood. That can be more or less if it is rough cut lumber from a local mill. This step can save you from having to mark the layout, while also strengthening the deck.

- After setting the first joist run and ensuring that it is straight, work outward on either side installing the rest of the joists. At some point you will turn the joist perpendicular to the first one and make a row of them on each side of platform. fix this diagram



- We will call the first set of joists A and the perpendicular sets B and the corner sets C to make it easy to talk about. The B boards can be started at any time but it is important that most of the length be inside the octagon. The same is true for the C joists. Connect all the joists to the octagon boards, especially around the outside.
- Find the center of the center joist (should be the exact center of the octagon) and screw a long board down to use as a compass. Drill a hole (just wide enough for a pencil) and mark all joists around in a circle as you go. If you cut them as you go, the cutoffs can be used as blocks if they are at least 14.5"
- ✓ Remember to leave space for the band board (usually a 2x8). This means you will cut the joists 1.5" less than that the finished diameter of the yurt.

- Cut off excess with a hand saw at the angle drawn by the compass. It is easiest to transfer a line down the joist with a square on both sides to use a guide when you cut the ends of the joists.
- When this is done you can wrap and staple the home wrap up each end of the joists and cut off the excess above the top edges.
- It is now time to make your band board. Using a board that is slightly wider than the floor joists, make a band board by making relief cuts in the back of the board. The smaller the diameter of the yurt the more cuts will be needed. Typically making a cut every 1-2 inches and about 2/3 the depth of the board will work.
- Wrap the band boards all the way around the yurt starting in the center of a joist.
- ✓ Try not to put a joint at the door.
- ✓ It may also be helpful to screw a scrap piece of wood to the end of a joist to make the joint stronger and easier to screw into.
- After completing the band, you are ready for insulation.

Insulation

If you are going to insulate the floor now is the time to do it. It will be much easier to do it now from the top that to go under the platform later. Now is a good time to staple the home wrap to the bottom of the joists. This should help hold even the heaviest insulation. There are many types of insulation, and it is important to follow the recommended application and installation procedures. With an product it is important not to let it get wet during installation. We keep a 20' wide piece of plastic that is free of holes on site just in case. This plastic will get used again as the project goes on. Once the insulation is in you are ready for decking.

Decking the platform

Many different types of decking can be used as sub floor, but the one we like is 3/4" tongue and groove plywood. Home advantage or AdvanTech work well.

- Begin laying your sheets of plywood with their 4 foot side parallel over the joists. It is important that the tongue and groove is perpendicular to the floor joists.
- Start on one side and try to use the maximum amount of the board while still landing on a joist. Split the joist and start the next piece of plywood.
- ✓ It is best to stagger the joints as much as possible.
- Use just a couple of screws to hold the plywood in place at first. This will make it easier to get the tongue and groove together.
- ✓ You might need to use a hammer and block to beat the tongue and groove together.
- Make sure to transfer the center point up to the plywood carefully so that when you draw your circle it will match the band board.
- Mark the plywood all the way around as you go so that you can check to see if it is lining up with the outer edge of the band board.
- ✓ You can cut as you go and use the cutoffs to patch together the other side.
- Once the plywood is down and marked, the easiest way to cut it is to use a circular saw.
- ✓ If you set the blade depth to the thickness of the plywood you can cut in a circle on most platform sizes.
- ✓ Again it is important to check to see that the circle lined up with the band boards all the way around before cutting.
- It is also a good idea to mark the location of the joists as you put the plywood down to make popping lines easier. Locate joists and pop lines for the decking screws to go in and screw down the deck.
- ✓ Make sure to sink the screws as you go so that you don't find one popping up through your floor later.

Flooring

There are many choices when it comes to flooring. Some things to keep in mind:

- Will the yurt be climate controlled most of the time?
- Will it get a lot of moisture from a sink or windows left open?
- Is the climate very humid and might cause molding of wood flooring options?
- Natural vs. unnatural materials?

We generally use linoleum flooring because it is easy to find in many styles, easy to put down, fairly inexpensive, and provides a moisture barrier for the inside space as well as protecting the insulation. We have found the cutting little v wedges out of the end and folding little tabs over the edge of the platform is a good way to ensure that no water will get into the insulation. Marmoleum is another product that is a natural alternative to linoleum. It is a great option if cost is not a concern. With any flooring it is important to follow the recommended procedure for installing the floor. I have made a mess of more than one by trying to do it my way.

At this point your insulated platform is ready for exterior deck or a yurt.