

Build a Concrete shed foundation

How to build a concrete shed foundation?

Find out the best way to build a concrete shed foundation by understanding how to prepare the ground for your concrete shed foundation. What is the proper mix of concrete for your foundation. How to mix the concrete properly and how to finish the concrete like a professional.

Prepare the ground

The first thing you will need to do is find the proper area for you to build your shed. This will be determined on your landscape as well as your type of shed you're going to build. Make sure you have the proper permits for the building process. You can find more about your permits [here](#).

Once you have the correct plans in the correct area for your shed, then you will need to begin the preparation for the foundation. If your ground has a lot of rock and plant roots then you will need to remove those from the soil. You want to make sure the soil is firm and not soft.

The next part of the process would be to dig the ground to the dimensions of your shed. For example, if the shed is going to be 10 x 10 then then you need to dig out a 10 x 10 area in the ground. The typical dig will be about 7 inches. The first 3 inches will be for the gravel base and the remaining 4 inches will be for the concrete.

Now that you dug the area to the proper depth according to the dimensions of your shed plan you will need to build a frame for your concrete shed foundation. This is relatively easy as you will take 2x4 or 2x6 boards and place them in the outline of your shed base. Secure the boards to one another using deck screws and wooden stakes to hold them in place. See Diagram.



Once the frame is in place around the area for the foundation one will need to make sure that the frame is of the proper dimensions. Measure the frame from corner to corner. You want to make sure that the dimensions are even going with each board and also in a diagonal measurement. Also, use a level across the foundation boards to make sure that the top of the boards are level so when you pour the concrete it is level. Once these are complete in the measurements are correct, then you can prepare the soil.

Before pouring concrete you will need to first tamp down the soil to make sure it is of a firm base. Next, you will fill the hole with 3 inches of gravel. Most contractors use type 2 or 3 gravel. This will need to be tamped down also to make a firm base. Once this is done make sure you put down a vapor barrier. We recommend a 20 mil vapor barrier. Next you are ready to move on to the concrete.

What is Concrete?

Concrete is a mix of gravel, sand, cement and water. You can purchase this with the gravel, sand and cement already premixed, such as with Quikrete. Other options are to buy the mixture separate and mix it entirely by yourself to the dimensions that you want. The typical mixture is 1 cement: 2 sand: 3 gravel by volume. Through a process called hydration the water activates the cement to bond the sand and gravel together. Some concrete mixtures have polymers added to allow for quicker times for setting and resist cracking.

Concrete will also have a PSI rating which is a pressure per square inch rating. Depending on the contents of your shed you will want to find the right concrete mixture with the right PSI rating for what you are going to use for your shed.

Types of Premixed Concrete

Quikrete

Fast setting – For posts. This is a really neat mixture that sets quickly in 20 minutes. No mixing either, just dig a hole – place your post and then pour a gallon of water on top of the dry ingredients.

Concrete mix – I recommend a 5000 psi mixture.

Sakrete

High Strength concrete mix

How Much Concrete Do I Need?

Now that you know you are going to build a concrete shed foundation you need to find out how much concrete to use. This is a quick calculation used from family Handyman: “Calculate the volume you need in cubic yards. Multiply the length (10 ft.) by the width (10 ft.) by the depth (.35 ft., or 4 in.) and divide it by 27 (the number of cubic feet in a cubic yard). You get 1.3 cu. yds. Then add 10 percent to allow for spillage and slab depth variations to help determine the concrete cost per yard.” Another options is a calculator found here.

<https://www.wikihow.com/Measure-Concrete-to-Be-Poured>

If you are using Quikrete they have a calculator here to give you an estimate for how many bags you will need to use for the project.

<https://www.quikrete.com/calculator/main.asp>

Mixing Concrete

Get a good concrete mixer. You can rent one or purchase one if you want. ---makes a good concrete mixer. If you are mixing the contents yourself, then you will start with the gravel. Then place the Sand mixture in the mixer and then add the cement mixture. Once you have the proper measurements in the mixer, then begin to add water slowly. As the mixer is mixing the contents you can monitor the thickness and consistency of the concrete. Once it is at the right mixture and content, then empty the contents into a wheel barrow and start putting it in your frame on top of the gravel.

Pouring The Concrete

You will start on one end of the shed frame foundation and work your way to the other end very slowly. It will take one wheel barrow mixture at a time as it is a slow process because you want it correct. As you place the mixture into the foundation, use a spade and slightly spread mixture into the area which will get rid of any air bubbles and allow the concrete mixture to spread out smoothly.

When enough of the concrete is placed along one end of the frame it will be time to spread the mixture slowly towards the other side of the frame foundation. This is done by using a 2x4 that is cut to fit across the foundation frame and slowly gliding the 2x4 across the frame. This board is called a screed. The screed allows you to spread the concrete from one side towards the other side.

This will be done very slowly as you can only put enough concrete into the frame to spread it a little at a time. This process will be repeated until you work your way to the other side of the foundation frame. As you are spreading the concrete and placing the concrete it is a good idea to keep spraying the concrete with a light mist of water to keep it spreadable. You do not want to allow the concrete to set until all of it is poured and smoothed. Allow the concrete to set for 5-7 days.

Quikrete has a nice article about foundations here.

<https://www.quikrete.com/pdfs/projects/concretefoundations.pdf>

All The Best,

JB

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