How to Build a Simple Wood-Fired Cob Oven

by Scott Howard

A growing number of people are realizing the fun and functionality of building cob ovens. Wood-fired cob ovens can be built to whatever size best suits the user. Smaller cob ovens are good for cooking bread and pizza and require less time and wood to fire. Larger cob ovens are better for all-day bakes and big backyard parties. Some restaurants have earthen ovens that are six feet across! No matter the size of the oven you wish to build, the techniques used are very similar.

This article covers the basic concept and steps necessary to build your own cob oven, but it is not an exhaustive guide. If possible, help others build their own cob oven first to gain experience, or ask an experienced oven builder to help you to achieve the best results. Consider making a "practice oven" first to familiarize yourself with the process, especially if you haven't worked with cob before. If you aren't satisfied, you can start over and reuse the firebricks as long as you have sand, clay, and straw available to mix up fresh cob.

To build a cob oven, you'll need:

- A level, fire-proof platform
- Mason's sand
- High-density firebricks
- Old newspapers

- Clay or clay-rich soil
- Chopped straw or hay
- Wood or coiled wire handle for the door

The first step in building a cob oven is to select a reasonably flat spot to begin construction. It's important to have good access to load wood, move coals, sweep ashes, as well as to conveniently insert and remove food. Built-in counter space is helpful if you plan to bake many loaves or pies. Building a roof or selecting a covered area will extend the life of the cob oven by protecting it from the elements.

Construct a solid, fire-proof foundation or platform at a height that will be comfortable to work at. The platform doesn't have to be perfectly flat, but it should be as close as reasonably possible. Good choices for the platform include cob, compacted sand and rock, and concrete.

Once the platform for your cob oven has been built to the desired height, cover it with a thin layer of mason’s sand. Stack high-density firebricks tightly over the sand to cover the entire floor of the oven. Cover the brick with several layers of old newspaper to provide an even surface to build the oven form. Pile damp sand over the newspaper and sculpt to the desired shape of the oven's interior. Plan for the opening of the oven to be about 60% of the interior height. Pack the sand tightly and cover the finished form with a few layers of damp newspaper.

The form is now ready to be covered by the first layer of a sand and clay mixture. Combine two parts sand to one part clay with just enough water to form a thick paste consistency. Begin covering the newspaper and sand form with this mixture until a depth of 3 to 5 inches has been achieved. The depth of this layer (and all subsequent layers) will vary by the size of the oven. The larger the oven, the thicker each layer should be.

Without waiting for the first layer to dry, mix up a batch of cob using the same ratio of sand, clay, and water but add as much chopped straw as possible while keeping the mixture pliable. Once the cob is thoroughly mixed, add a second coat to the oven until you've achieved a second layer the same depth as the first. Allow the oven to dry out completely before adding the final coat.

 Fashion a door for the oven using cob to make a plug that will fit the oven opening as tightly as possible. The handle should be made from wood, or coiled metal wire so that you don't burn yourself when you remove the plug from the oven’s entrance. Be sure to let the finished door dry completely before use. The door or plug can partially block the cob oven’s entrance to regulate the incoming air and exhaust. This will give you some control over the fire and the amount of heat generated. Once the fire is nearly out, completely sealing the door will help retain heat in the oven and maintain a constant temperature.

Once a few weeks have passed and the cob oven has dried completely, you can apply the third and final coat. The outer coat helps to protect the oven and can make it more attractive. You can use cob for additional thermal mass and strength, or use sand and clay for a clean, smooth finish. It is up to you if you want to leave the oven plain or incorporate decorative elements. Draw designs before the clay hardens; add tiles, glass, or beads to give your new oven an artistic flair.

Once all layers are dry, remove the sand from the interior of the cob oven along with all the newspaper you can. Start a very small fire inside the front of the oven. As it gets going, slowly push it back deeper inside the oven. The initial fire will burn off any newspaper stuck to the interior of the oven and drive any lingering moisture out of the oven.

Now that your cob oven has been built, dried, and you have built a test fire, you are ready to break it in. Before starting a new fire, clean out the oven and add kindling and wood for a new fire. Get the wood going and push it back into the oven for 30 minutes or longer depending on the size of the wood. Once the oven is hot enough, use a rake or hoe to move the coals and ashes away from the center of the oven. Tie a damp rag onto a pole and use that to clean the bricks if you will be putting bread or pizza directly on the firebricks. If you are using bake ware, this step is not necessary. Adjust the door as needed to maintain the desired internal oven temperature. Enjoy your new hand-built, wood-fired cob oven!