



How to Build a Wood Burning Fire Pit/Oven



For between \$300-400 using the below plans you can build a back yard fire pit . If you can use a level, grinder and a mortar trowel then this is a couple weekends type of project.

These plans are based on a back yard fire pit currently in its 6th year of regular use as a Cowboy Kabob™ test lab for fire grilling, a tandoori oven, turkey roasting oven, smoker and heat source for gatherings. The size of this fire pit will let you have a real bon fire and crank out a ton of heat but it's reasonably sized so it doesn't take over your yard or start a wild fire. Use this design to build your own and modify as you need to.

Pinterest is a great place to get ideas: <https://www.pinterest.com/hansfiregrillingcom/cool-stone-fire-pits/>

Your own back yard fire pit will become a gathering spot for friends and family, have appetizers, drinks and great conversations. Get creative and use it to cook amazing meals over the real wood coals. Of course we recommend the Cowboy Kabob™ as the perfect grilling tool for cooking over your own fire pit.

<https://firegrilling.com/cowboy-kabob>

If you have teenagers it provides a safe option for you to have the cool house for them to congregate and hang out in the back yard while you can still keep an eye on them.

Building your pit will give you a great sense of accomplishment and once you start using your fire pit regularly you will undoubtedly feel better, more relaxed and happier ! Who knows, maybe you and your friends will have a great conversation around a fire and come up with the next great business idea !



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Material Selection

I recommend going to your local lumber yard instead of the big box stores to buy your fire brick and mortar, they know what they're doing. For the outside, you can go to a stone yard or a landscape supply yard where you can buy stones by the bucket load. Either should have options to consider like field stone, flat stone, round river rocks or just take bricks and use them instead of rocks. It depends on the style you're going for.

- **Fire Brick** - Using the right materials makes all the difference and that means fire brick. Don't use cement bricks anywhere coals or flames will be in contact with them, they'll crack
- **Rocks for the outside** – no porous stone or river rock will work or they may explode when heated, no one wants red hot stone fragments landing on them, it hurts. Some sedimentary stone will also crumble if you heat it up repeatedly so it's important to test them first by burning them in a hot fire on the coals then pull it out in the morning. If it explodes or crumbles don't use it.
- **Brick lined Bottom or not?** This really goes with the lid or no lid question. If you go for no lid then either cut off a few corners of the bottom bricks to let water out, or put gravel in the bottom instead. I recommend go for the bricks, it holds and reflects heat and it's easy to clean out the ashes with a flat shovel without having to deal with rocks.
- **Lid or no lid?** If you live in a fire prone area in the west then a lid is smart and possibly a requirement. You can find domed and flat lids on Amazon from \$160 – \$400 or use a metal trash can lid if you don't care about appearance. To build my pit I used the lid from a Weber Portalbe Fire Pit. Personally I love the Weber lid for my fire pit, you can order new 'replacement' lids direct from Weber for under \$65. I learned how to BBQ on Weber charcoal grills and the lid is key to controlling heat and saving coals for the next time. The domed Weber fire pit lid is as thick and has the same weather proof finish as their BBQ grill lids and works great on your pit.
- **Mortar** – Use high heat refractory mortar.

Basically if you go for the fully fire brick lined pit with a lid, your fire pit ends up as a combination of a huge 'Big Green Egg' and a Weber grill that also can act like an oven, smoker or slow cooker. I suggest go for the Lid. (see resource page at the end)

Site Selection

- You'll need to understand your geology and topography and then plan accordingly. Water is the enemy of mortar so if your site has clay soil, poor drainage, or is swampy you'll need to deal with that. It's best to have a slight slope, no low hanging tree branches and at least 6 feet in all directions around the outside of the fire ring so you can fit chairs or outdoor furniture around the pit.
- Figure out how deep you want to set the pit, and if you'll be putting a patio around it etc.
- locate it where the prevailing wind won't go into your neighbor's house or yours is smart.
- Check with your city or county as to what restrictions you may need to deal with.



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Budget & Materials List:

Item	Qty	Est. Price Ea	Total
9"x 4.5"x3" clay fire brick	56	\$1.95	\$109.20
50 lb bag of sand	2	\$2.65	\$5.30
Akona® Medium-Duty Refractory Mortar - 50lb	2	\$59.00	\$118.00
5 gal. Bucket of hand picked rocks	6	\$10.00	\$60.00
Flat cap stone rocks (by lb.)	150	\$0.23	\$34.50
			\$327.00
Optional Lid - Webber Fire Pit lid	1	\$65.00	\$65.00
			\$392.00

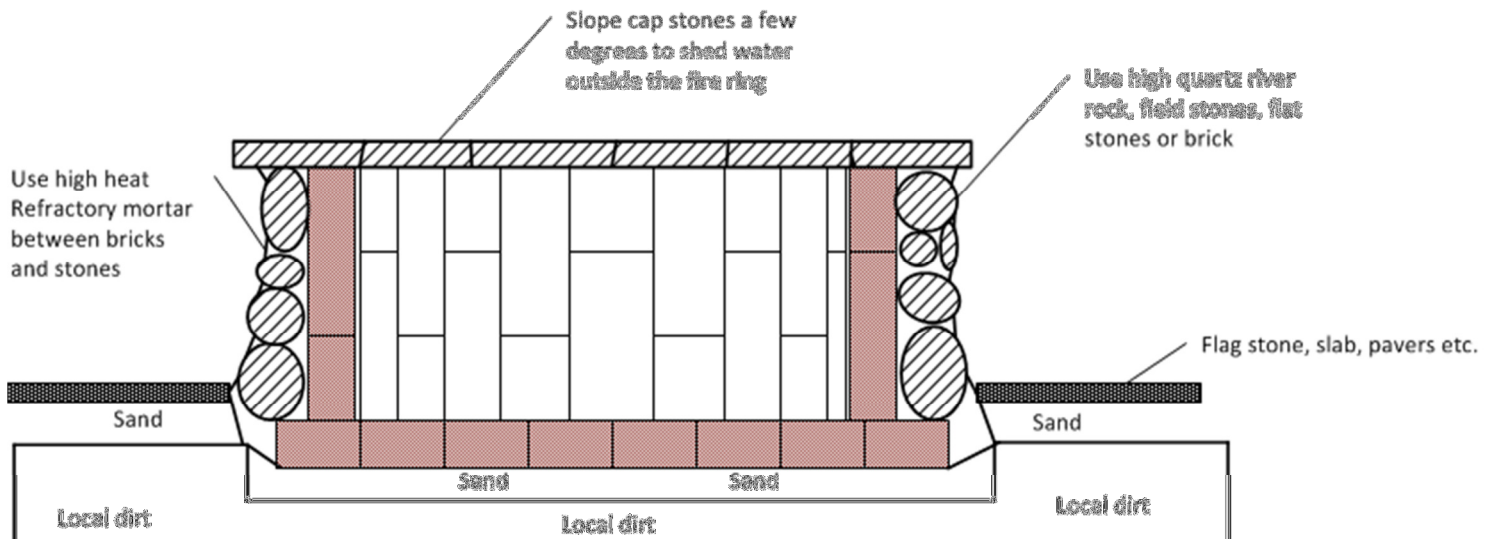
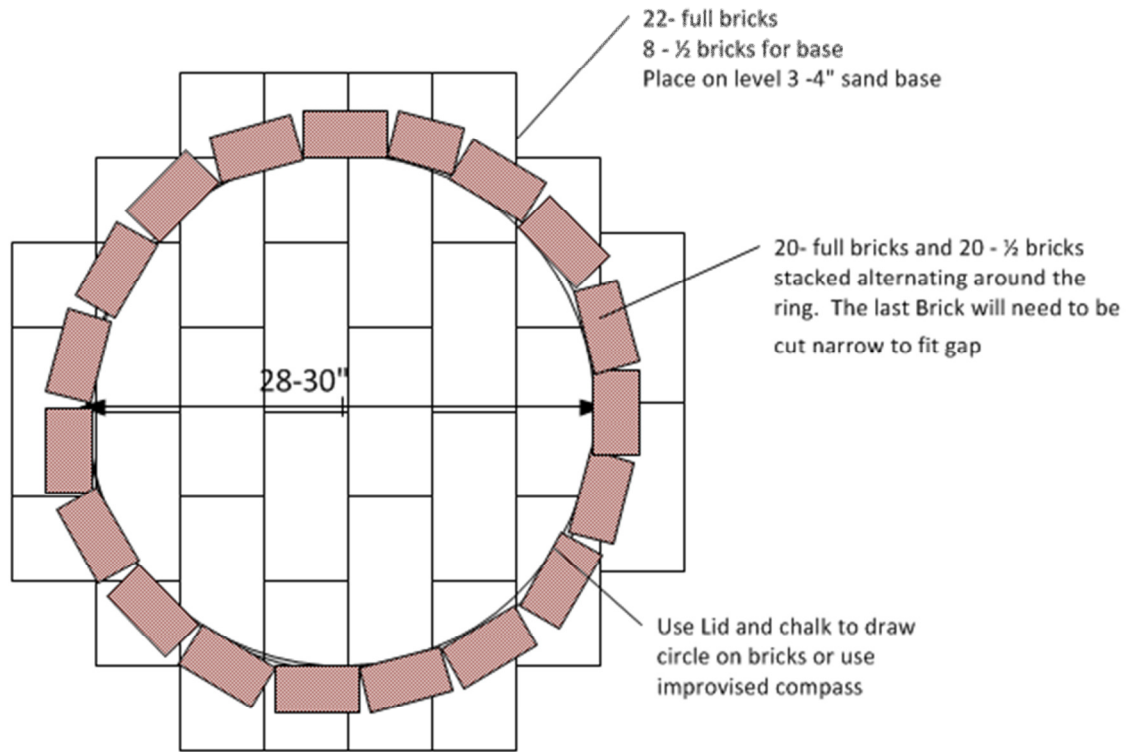
Tools Needed:

- 4" or larger grinder
- Diamond tipped cutting blade for grinder
- 2 pairs of Grippy latex gloves
- 5 gallon bucket
- Extension cord
- Wheel barrow
- Tryangle mortar trowel
- 18" level
- Measuring tape
- Chalk and string or a lid to trace
- Hearing and eye protection
- Shovel
- Hammer



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Plans:





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Construction:

Based on your site plans, dig down 5-6" by 4 feet around where you plan to have your fire ring. Get it as smooth as possible then lay down your sand 3" deep

Use a level and to get the sand base completely flat and smooth, tamp it down as you go.

Layout the bricks so they are touching as per the below diagram 1 keeping them as flat as you can and no gaps between them. If you don't plan for a lid, then use the grinder to cut off a few corners of the bottom bricks to let water out.

Use a string and a piece of chalk to make a ring, or trace the lid OD if you plan to use a lid.

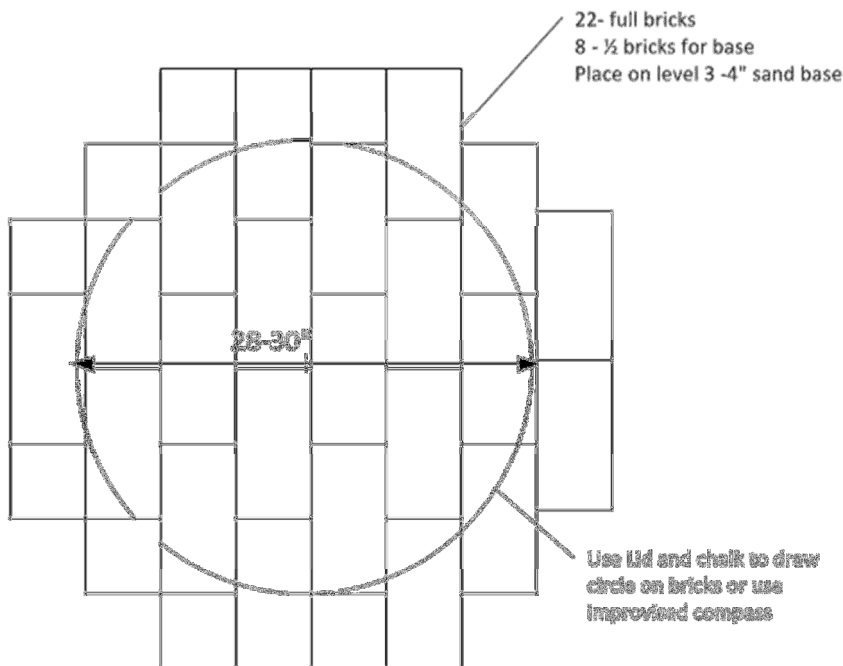


Diagram 1

NOTE: follow Diagram 1 and not the photo for this part. I ended up having to cut a few bricks for the bottom of the ring.

Bricks are cheap so just lay them out on the flat sand as in Diagram 1 and minimize cutting or gaps and you will have a flat foundation for the sides.



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Figure 2

Use full bricks and arrange them around the chalk ring so they all touch along their edges.

Your circumference will be between 28 - 29". Check your lid fit and cut one brick lengthwise if needed to bring in the circle a bit to match the lid OD.

Hopefully you got your base flat and all the bottom bricks flat so the bricks stay straight when you check with a level.



Figure 3

Next, cut 10 bricks in half.

Mix up a 1/3 bucket of refractory mortar.

Put a thin layer of mortar on the bottom of the bricks and alternate full bricks with 1/2 bricks and make your ring on the chalk.

Fill in the 'V' shaped gap with mortar and add the next bricks in the same way Figure 3.

Check the level as you go. Remember it's a fire pit not a house foundation so it doesn't have to be perfect.

Let it sit overnight to 24 hours to dry.



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Figure 4.

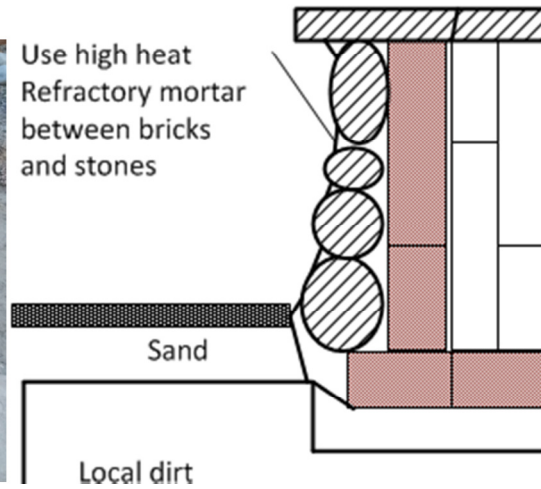


Figure 5

Once the fire brick mortar has dried you can add the outside rocks. This will take a bit of practice so mix up a small batch of mortar to start. Plop a bunch of wet mortar under the rocks and on fire brick siding and press the stones into the mortar. Add more to fill in the gaps then use the trowel to smooth out the mortar around each stone as you add them.

Start with larger rocks on the bottom and dry fit each rock before you add it with mortar. When you choose your rocks get a variety of sizes to work with, it's like a big jigsaw puzzle.

Work your way around the fire ring for the first layer of larger stones, don't put mortar on top of the base rocks until you're ready to add the next layer.

Keep going all the way around.





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Cap Stones

Cap Stones are important; they keep the water out of your fire pit and make a flat place to set you drink or your Cowboy Kabob while cooking. For the cap stones I recommend flat granite or other stone that can handle heat. Lay them out in a circle and then using your cutting grinder, cut the stones so they have a flat meeting point between them, leave a 1" gap between them. Then use the lid to draw a circle on the stones up to where you will need to cut them.

When you re-assemble the flat stones on the fire ring, close the gap between the stones to ½-3/4" gap so they protrude just a little into the fire ring. Test fit the lid and then adjust accordingly.

Next put mortar under the cap stones one by one sloping them away from the inside of the pit just a little to shed water. Work you way around the ring.

NOTE:

In the pictures I used rounded stones for the cap stones. It looked good but it was a bad idea and is not recommended for several reasons; It's not flat, the stones protrude into the fire area and over time they crack from the heat. Also, the lid doesn't fit as snugly as it would if the cap stones were flat.





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Resources

Pinterest is always a good source of inspiration and can give you some good ideas to start with.

<https://www.pinterest.com/hansfiregrillingcom/cool-stone-fire-pits/>

Weber fireplace model # 2720, replacement – part # 61489 – \$61.55. It can only be ordered through the Weber call center. 1-800-446-1071 They're open 7 am to 9 pm, CT, everyday.



The family handyman did a good article to read as well:

<https://www.familyhandyman.com/masonry/building-a-fire-pit/view-all/>

