Outdoor Fireplace Do-It-Yourself Steps

MATERIALS
- 4" Concrete Cap Block
- 8" Concrete Blocks
- Fire Brick 9x4x2½
- Facing Stone
- Angle Iron – Lintel
- Wall/Block Ties
- Flue Tiles
- Concrete
- Mortar Mix
- #57 Gravel
- Steel Rebar

TOOLS
- Shovel
- Wheelbarrow
- Concrete Mixer (rental)
- Scaffolding
- Levels
- Carpenters Square
- Trowels
- Saw with a Diamond Blade
- Tape Measure, Hand Tamper
- Gloves, Safety Glasses
- Grade Stakes & String

**Before You Dig**

- Call the 811 hotline to verify the locations of underground utility lines. Gently dig around any locator paint marks to actually find the utility lines or cables. They might not be where the paint mark appears as paint marks indicate approximate locations in a “tolerance zone.” In Georgia, a tolerance zone is 24” on either side of a paint mark. Dig parallel to the paint marks.

- Do plenty of research to decide if building such a structure is for you. Outdoor fireplaces are difficult to construct from scratch and need to be configured properly to ensure concrete footer thickness, proper draft, and optimum firebox and flue dimensions. Consult an engineer or experienced trade contractor before getting started.

- Building considerations must include any local building code requirements for setbacks from structures, chimney height, and distance from other combustible sources. Permits may be required.

- Design considerations should address how the fireplace will be used, which can influence its overall scale, how it fits into the existing landscape, and its compatibility with the home.

- Decide whether it will be a wood burning or gas fireplace. Consider fireplace kits.

- Prepare a design and create a complete list of building materials by calculating the square footage of the structure, from the concrete footer to the top of the chimney.

**Excavation**

- Have a plan for the reuse or disposal of excavated dirt.
• Lay the perimeter of the structure using grade stakes and string to mark the corners. Measure diagonally across the space in both directions to determine if it is square. Spray paint the outside edge of the structure, which should be about 6” wider than the fireplace.

• Dig out about 10” of soil.

**Building the Structure**

• The structure will consist of three basic parts: base, firebox, and chimney.

• Fill the excavation with about 4” of compacted #57 gravel.

• Pour a 6-8” thick, steel rebar-reinforced concrete footer and let it set for a minimum of 24 hours before beginning work on the surface. Remember to leave a 6” border around the outside edge of the fireplace structure.

• If the firebox is to be elevated off the footer, use 8” concrete blocks to form a solid base for the firebox. Once you’ve achieved the proper height and width, mortar firebrick to the base (floor of the firebox) and then form the sides of a firebox structure by stacking fire bricks on the sides and back. Use refractory fire mortar to mortar the bricks together, maintaining no more than ⅛” joints. Lay each course of bricks in a staggered pattern over the course below. Use 4” cap block to form a support structure surrounding the outside of the fire brick. Regular mason mortar can be used between the firebrick and the concrete block.

• Place an angle iron or a solid long stone across the front open edge of the firebox to support the block or stone that will span over the opening. Fire brick should cover the full firebox up to the base of the flue.

• Install angle iron from front to back on both sides of the flue as support beams for enclosing the top of the firebox around the flue opening. This will create a flat top on the firebox, although traditional “shoulders” can be added over this top with concrete blocks. For an angled look, the blocks will have to be saw cut.

• Include a smoke shelf in your design. This is a flat shelf built into the back wall of the fire box at or above the top of the firebox opening. It helps direct smoke into the chimney and not back out the front of the firebox.

• The flue can be built with concrete block or flue tiles. Based on local codes and placement of the fireplace, build the chimney higher than any adjacent structures (usually 2’ or more) to ensure proper draft. Keep the chimney plumb/square.

• Place a spark arrestor at the top of the flue to prevent sparks from being emitted into the air. These are made of wire mesh and are often included in chimney cap devices.

• Scaffolding will be helpful for building the flue height and for placing face stone or brick over the full structure.