

# Instructions

## *Quali-Fyre*

### Heat One

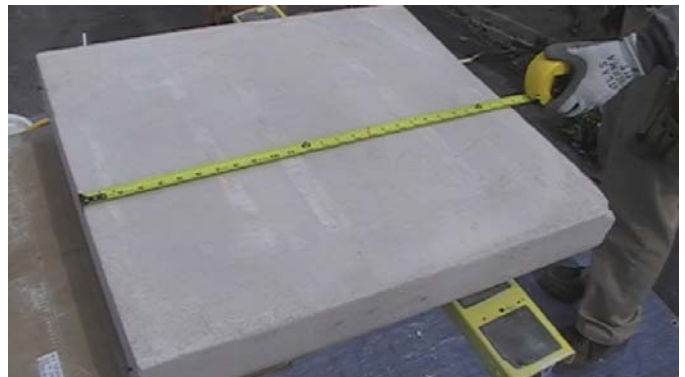
The instructions for the Quali-Fyre are assuming that the reader is familiar with terms used in chimney and fireplace restoration. We are assuming that the installer is familiar with the NFPA code 211 and has already addressed defects found in the inspection of the homeowner's fireplace and chimney system. In other words, common problems from the original construction of the masonry fireplace and masonry chimney, including but not limited to improper clearance to combustibles, improper masonry structure thicknesses, wooden hearth forms left in place, terra-cotta liners resting on metal smoke chambers, cracks and voids in the terra-cotta liner, no liner and one brick thick, have been addressed and repaired by NFPA Code 211 compliant methods. These methods may include but are not limited to; building thicker masonry structures and eliminating voids, removing wooden hearth forms, re-pouring hearth, relining the chimney with UL Listed system, and parging the smoke chamber with UL Listed system Ahrens Chambertech 2000. The Quali-Fyre counts as the firebrick inside of the fireplace.

#### **Preparation:**

For most jobs, the lion's share of the work is now behind you. In others words, the demolition work is complete as the old firebrick is out or the rusty metal firebox has been torch-cut out, the chimney is relined, most of the smoke chamber has been parged while there is more space in the firebox... If the inner hearth floor is deteriorating or not level or not made of firebrick, then remove it and lay in a new one with firebrick and refractory mortar. If your installation is replacing a rusted out metal firebox liner you will have to plug the convection holes (typically four holes) as necessary with masonry.

#### **Step 1.** Install the back wall of the Quali-Fyre

- A. The back wall is to be installed plumb and level at the rear of the firebox, with the front of it parallel to the opening of the fireplace, and the bump out is at the top. Measure the height from the hearth floor to the lintel. Mark the back side (rough side) of the back wall, measuring from the top and marking a square line at the bottom so as to cut the excess material from the bottom of the unit. You may use a circular saw with a diamond blade to cut. Flip the piece to finish the cut as necessary if your saw does not cut deep enough.

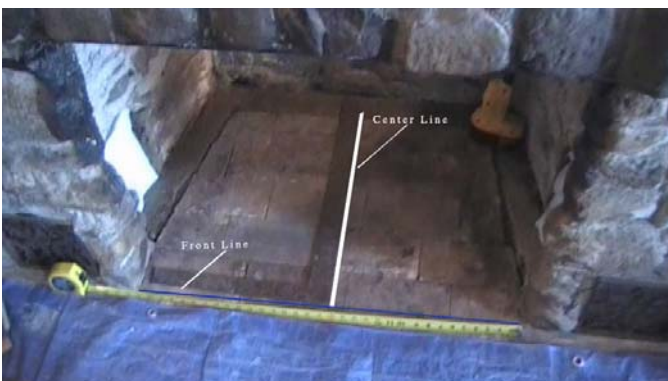




B. Insulate the back wall with two 1/2" wraps of foil backed ceramic wool insulation applied to the back of back wall with spray adhesive or refractory mortar. This is a good time to put a tapcon into the top surface of the of the back wall ( see photo) centered in the hinge joint, to secure with hinge joint later.



C. Before positioning the Quali-Fyre back wall, lay out the firebox: Make a pencil line on the hearth floor across the front of the opening. Mark the center of that line and Then, use a framing square to draw a pencil line to mark the centerline of the firebox square to the opening. Next make a small pencil mark on the bottom of the front side of the back wall to mark the center of the back wall.



D. Now bring the back wall into the house with a two wheel dolly. Next stand it up on the outer hearth, lean the top toward you, then "walk" it into the fireplace bottom first and stand it up. At this point it is time to decide the depth of the box. This is where The Quali-Fyre proves its versatility, by accommodating the homeowner's preference for firebox depth. Some homeowners prefer the radiant heat of a shallower "Rumford" style firebox, with the back wall

closer the front and the side walls angled to face the front. But, other homeowners like a deeper firebox to accommodate a larger grate or longer wood. Either way is no problem for the Quali-Fyre. Just make sure that the back wall is centered with the center line that you made on the inner hearth and equidistant to the front line.



**Step 2.** Install the side walls of the Quali-Fyre

- A. Take a measurement for the width of the sidewall. With the back wall now in position, measure from the hinge radius of the back wall to the inside corner of the fireplace opening. Now, transfer that measurement to the top of one sidewall, measuring from the inside of the radius. Remember that the smooth finished side faces in the fireplace. Do not assume that the side walls are identical, because your face wall may be thicker on one side, especially if you are dealing with a stone facade wall.



B. Mark and cut the height of the side walls using the same measurement that was used for the height of the back wall. Make the cuts to the side wall.



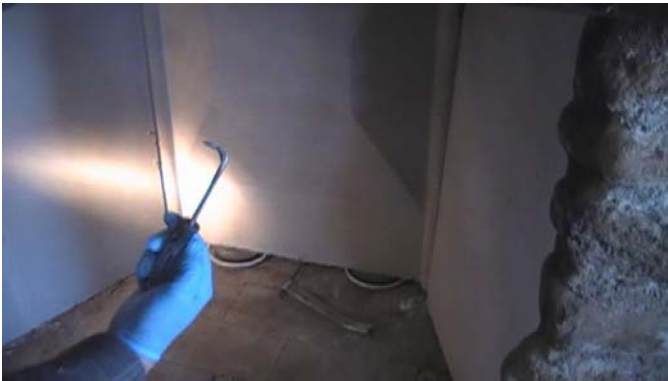
C. Insulate the side walls same way as back wall. Put a tapcon in the top surface of the side wall near the hinge joint to help secure the hinge joint later.



D. Next, butter up the inside of the hinge joint of the side wall with refractory mortar. We like to use a baker's bag to apply the mortar.



- E. Slide the back wall back a little to make it easier to position the side walls. Position the side walls so that the inside front edge is just inside of the inside of the opening. Walk the rear wall forward so that the hinge joints are tight and the refractory mortar squeezes out. Be sure to check that the back wall is centered. Wire the hinge joint together at the top, using stainless nine wire wrap around the tapcons that were installed in Step 1.B and Step 2.C.



**Step 3.** Complete the Quali-Fyre

- A. Now that the Quali-Fyre components are in position, you need to seal the joint where the front edge of the side wall meets the back edge of the face brick or stone. First, tuck in ceramic wool to fill voids. Mask off the area with duct tape to insure a straight, clean mortar joint. Also, mask off both sides of the hinge joint. Using the baker's bag, apply refractory mortar to these four areas, i.e. both hinge joints and both face joints. Strike with a margin trowel and remove tape for a nice looking joint.



B. Backfill behind the firebox, sides and back wall with mortar and rubble or with UL chimney insulation. Fill in to the top of the box.



C. Cut 2" wide strips of 1/2" thick foil back ceramic wool. Place as a gasket at the top of the firebox, sides and back wall to create an expansion joint.



D. Complete the parging of the smoke chamber with Ahrens Chamber -Tech, making a smooth transition from the firebox sides and back wall.



- E. Using the baker's bag of refractory mortar, "caulk" the joint where the Quali-Fyre meets the inner hearth floor.



- F. Install a top mount damper.

### **First Fire Procedure**

Wait 24 hours.

Build 3 smaller kindling fires to season the new mortar and smoke chamber which cure with heat.