Installation Instructions

STEP 1. Dig & prepare hole for post installation

See tips for STEP 1 (see Appendix).

STEP 2. Prepare post and *Phoenix I* post holder for installation in ground

Place the *Phoenix I* post holder into the center of the hole in the ground (Figure 2a). Insert one end of the post into the *Phoenix I* post holder. Most 4 X 4 wooden posts are actually smaller than 4" X 4". Typically, a post will measure 3.5" X 3.5" but can occasionally be as large as 3.75" X 3.75". If your posts are 3.75" X 3.75" or smaller then continue here. If your posts are larger than 3.75" X 3.75" go to Step 2a in the Appendix.

Slide the *Alignment Frame* over the post and down into the top of the post holder. Press the Alignment frame down until it is seated within the post holder (Figure 2b). The Alignment Frame will maintain the post approximately in the center of the post holder. The post may be slightly loose within the Alignment Frame. Insert common door shims on each of the 4 sides between the post and the alignment frame to make the fit snug and to get the post centered within the post holder (see Figure 2c). Cover the small gap between the post and the *Alignment Frame* with Duct Tape (or something similar to cover the small gaps) to prevent concrete from entering the post holder. Check for vertical with a level, and check the height of the post. If needed, dirt can be added or removed from the bottom of the hole (under the post holder) to adjust the holder and post height.

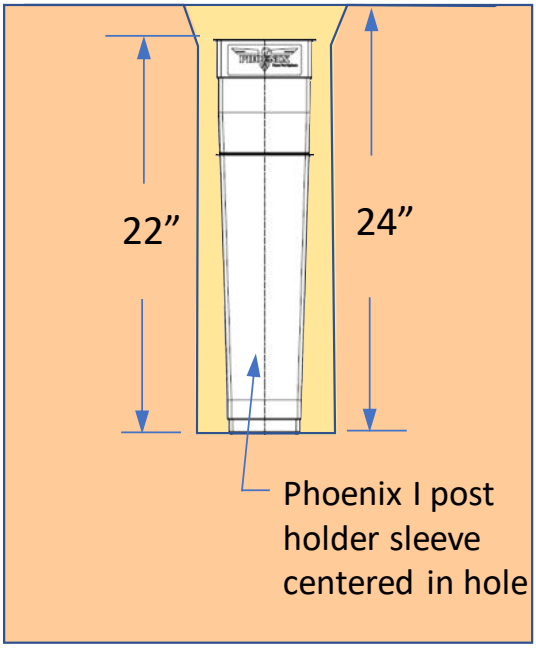

Figure 2a. *Post Holder in ground, centered in hole*

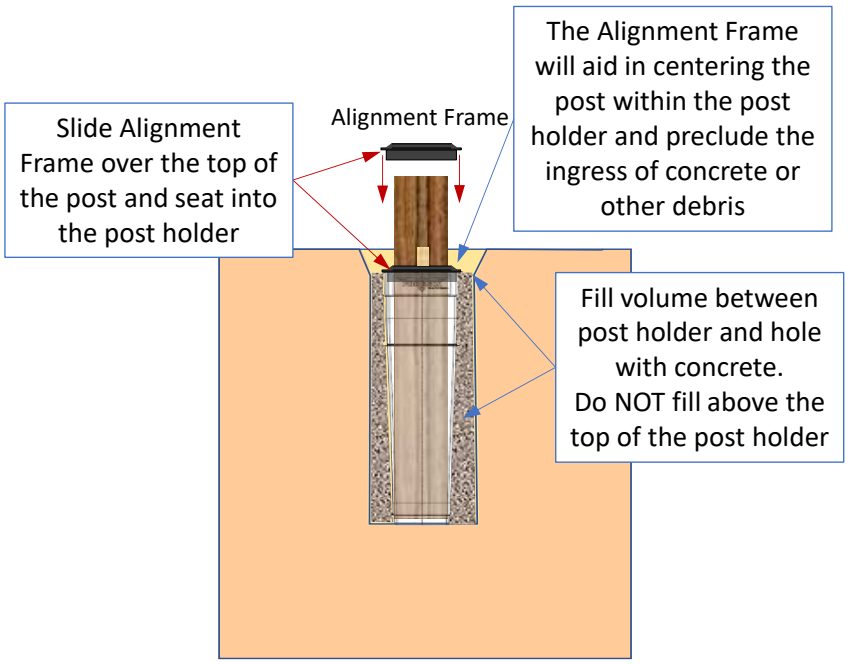

Figure 2b. *Using the Alignment Frame*

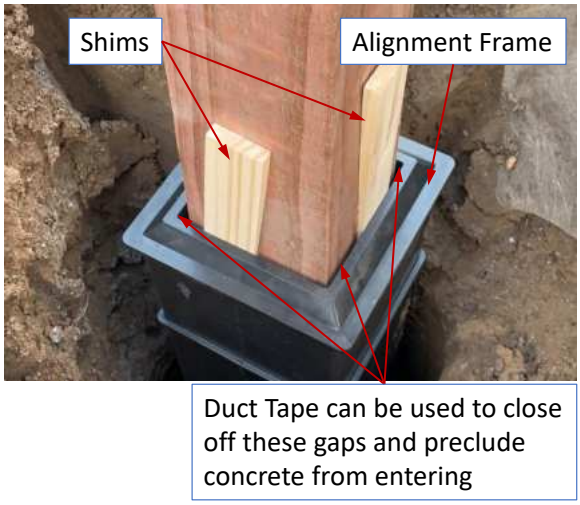

Figure 2c. Image of Alignment Frame

See tips for STEP 2 in the Appendix.

STEP 3. Install the *Phoenix I* post holder in the ground with concrete

See tips for Step 3 in the Appendix.

STEP 4. Install post into *Phoenix I* post holder

Remove the *Alignment Frame* or the towel/rags holding the post in place and covering the top of the post holder. Also remove the post from the post holder and check to ensure there is no water or debris in the bottom of the post holder – clean and dry as needed. Insert the post back into the post holder and check for vertical using a level. While holding the post in a vertical position, gradually add dry, fine-grain sand into the space between the post holder and the post. Typical "play sand" from your local hardware store will work. You will only need 10-11 cups of sand for the post installation. **IMPORTANT**: *The sand must be dry* and not able to clump! **DO NOT USE WET OR DAMP SAND!** If your sand is damp and does not freely slide through your fingers do not use until the sand has been dried. Continue to fill the space between the post and post holder with the dry sand until the sand is approximately 1 ½ inch from the top of the post holder (Figure 4a). See tips for Step 4 in the Appendix.

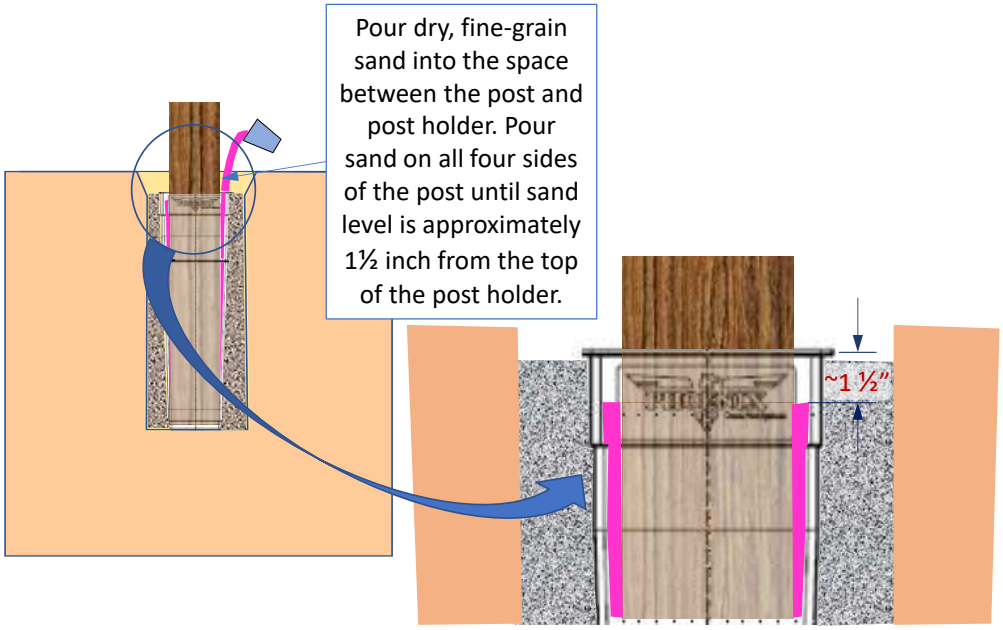

Figure 4a. Post in holder with sand added

STEP 5. Install locking shims at top of *Phoenix I* post holder

The locking shims provide added stability to the installation. The locking shims consist of a 1 ½" X ¾" block of wood (~2.5"to 3" long) and a common door shim (Figure 5a). A locking shim is installed at each of the four sides of the top of the post holder between the post and post holder as shown in Figure 5b.

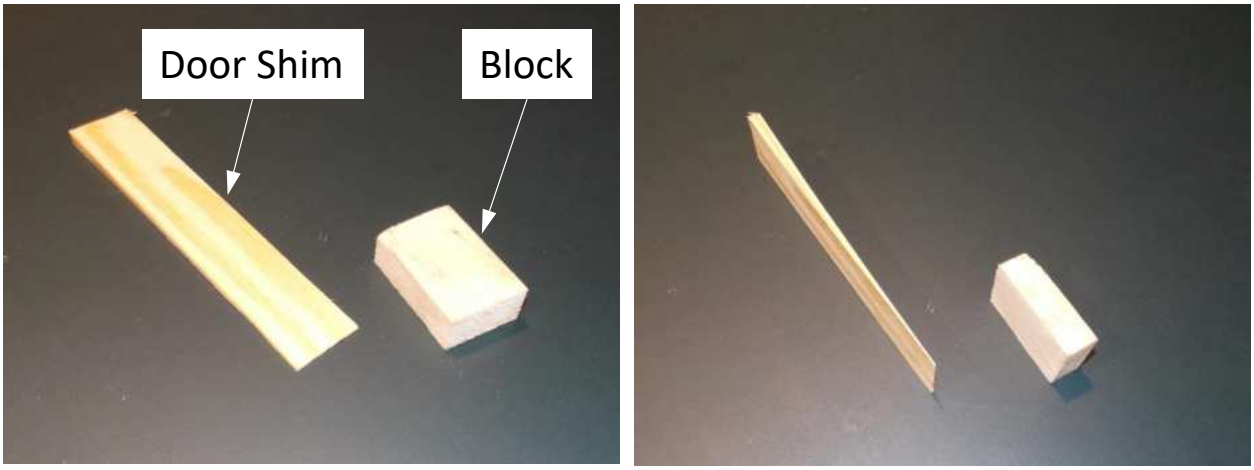

Figure 5a. Locking shim consists of a wood block ad a common door shim

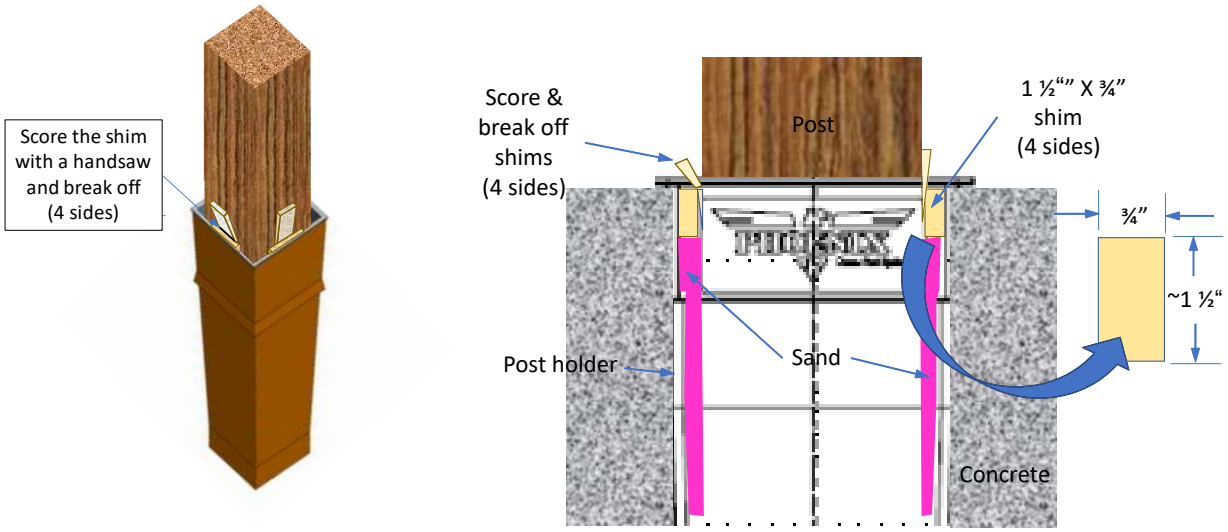

Figure 5b. Post and post holder with locking shims and door shim

See tips for Step 5 in the Appendix.

STEP 6. Finish with silicone caulking

Apply a generous layer of silicone caulking over the top of the locking shims and the post holder, filling all remaining gaps and spaces around the locking shims (Figure 6a). This will aid in preventing moisture from entering the sand inside of the post holder. A typical installation will use approximately ½ of a standard, 10 oz. tube of caulking. If you choose not to use the locking shims, you will use nearly a full 10 oz. tube of caulking. Your *Phoenix I* post holder is 22 inches deep so cover the top of the caulking with approximately 2 inches of dirt or other materials as desired (Figure 6b) and your post installation is complete!

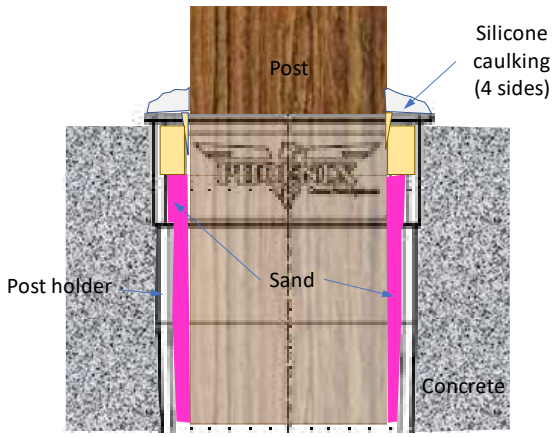

Figure 6a

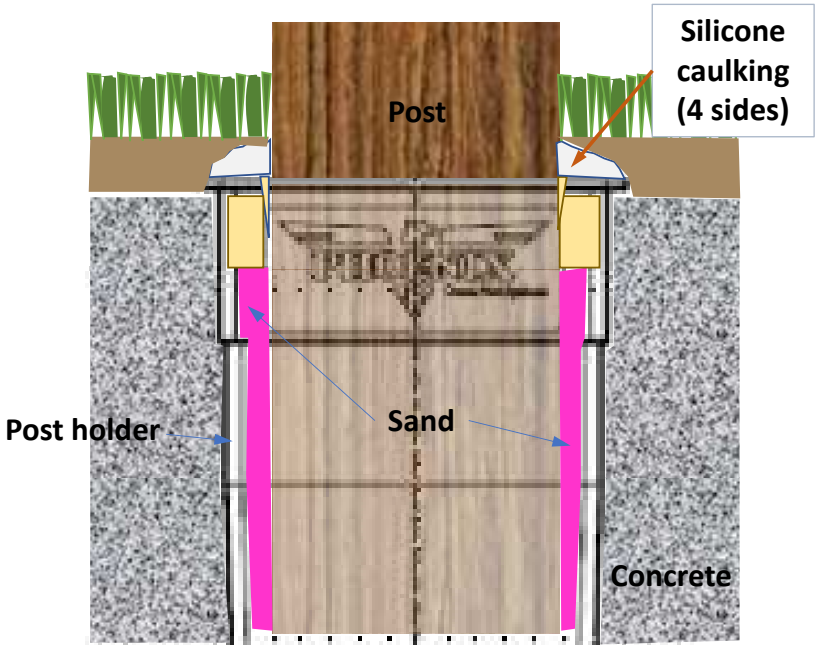

Figure 6b

Appendix – Additional information

Tips for STEP 1. Dig & prepare hole for post installation

If you are replacing an existing post, remove the post and the concrete stump from the ground. For a first-time installation of a standard 4 X 4 post, dig your post hole 8 inches in diameter and approximately 2 feet deep for a standard 6-ft fence (8-ft post length). Post hole augers can be rented from your local equipment rental store.

With a shovel, chamfer the top of the hole back about 2 inches and approximately 3 to 4 inches deep around the entire circumference at the top of the 8" diameter hole and remove the loose dirt from the hole as needed (See Figure 1a). This chamfer will facilitate pouring the concrete around the *Phoenix I* post holder later in Step 3. If you are first removing the old concrete, you will likely not need the chamfer if the hole diameter at the top of your hole is already larger than 8 inches.

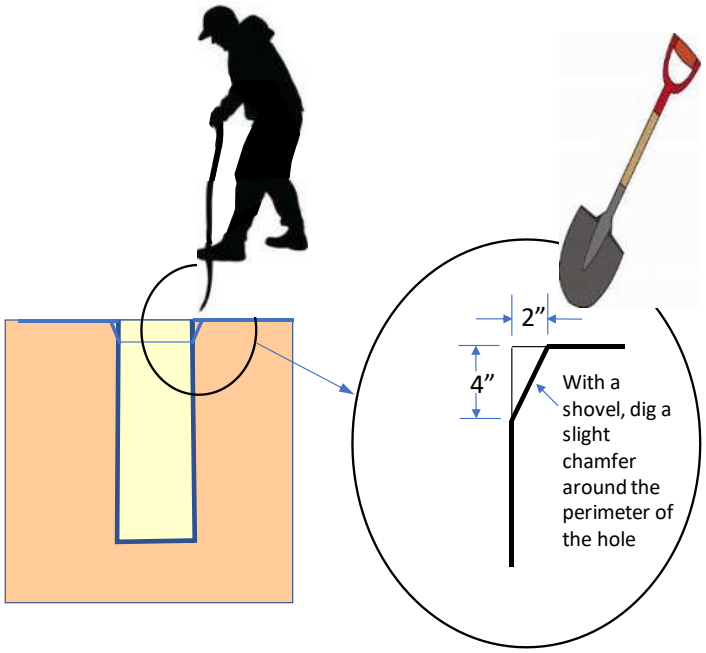

Figure 1a

End of Step 1 tips.

STEP 2A. Adjustments for posts larger than 3.75” X 3.75”

If your post is larger than 3.75” X 3.75” and will not fit into the bottom of the *Phoenix I* post holder, but is less than 3.90” X 3.90”, you will simply need to fill the bottom 1 inch of the box with sand before inserting the post into the post holder (Figure 2e). Alternatively, you could also sand the sides of the bottom of the post until it inserts into the post holder (Figure 2f). If your post is larger than 3.90” X 3.90” (this condition is extremely rare for a “4” X 4” post), you will need to sand the bottom of the post to allow it to fit properly into the *Phoenix I* post holder.

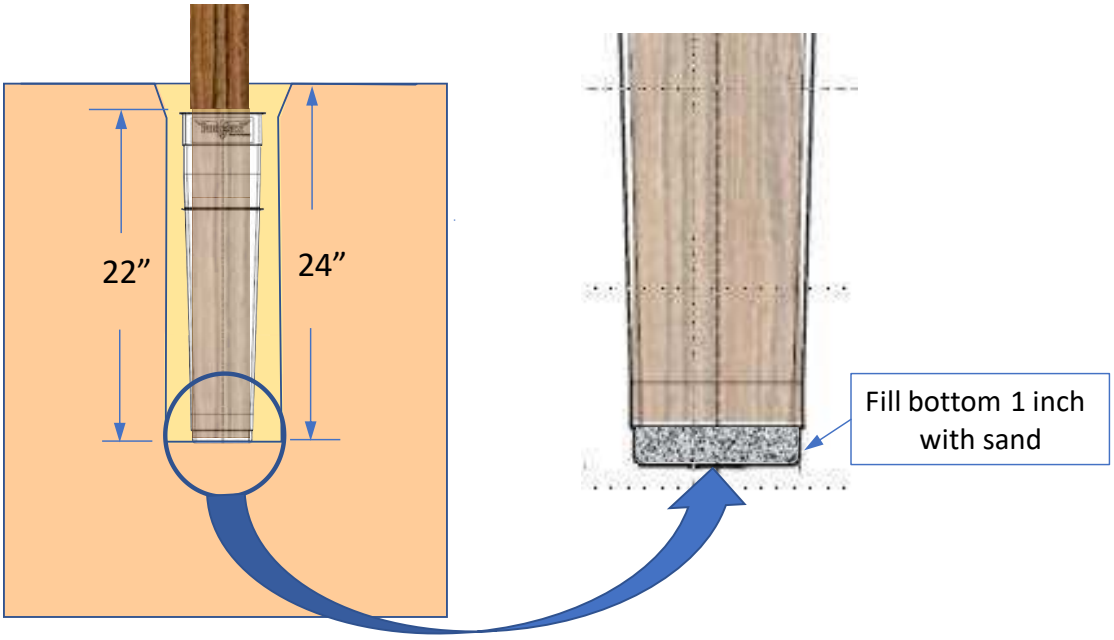

Figure 2e. post holder *with sand in the bottom 1 inch and post on top*

Figure 2f. *post with sanded sides to help fit into* post holder

End of Step 2a. Go back and continue with Step 2.

Tips for STEP 2. Prepare post and *Phoenix I* post holder for installation in ground

Use of the Alignment Frame is recommended as it greatly facilitates the post installation, but if you do not have an Alignment Frame, an old towel or rag(s) can be stuffed around the edges to hold the post approximately centered within the post holder (Figure 2d). The Alignment Frame (or towel) will also help prevent concrete from entering the post-holder space when concrete is added later (Step 3).

Figure 2d *Centering the post in the post holder with an old towel*
(Using the Alignment Frame tool is recommended instead of towel)

End of Step 2 tips.

Tips for STEP 3. Install the *Phoenix I* post holder in the ground with concrete

With the *Phoenix I* post holder aligned with your fence line and in place, shovel the wet concrete mix around the outside of the post holder until the space between post holder and surrounding ground is filled to near the top of the post holder. Using a level, ensure that the post is in a vertical orientation while adding the concrete. Do not allow concrete to enter the space between the post and the post holder (Figure 3a).

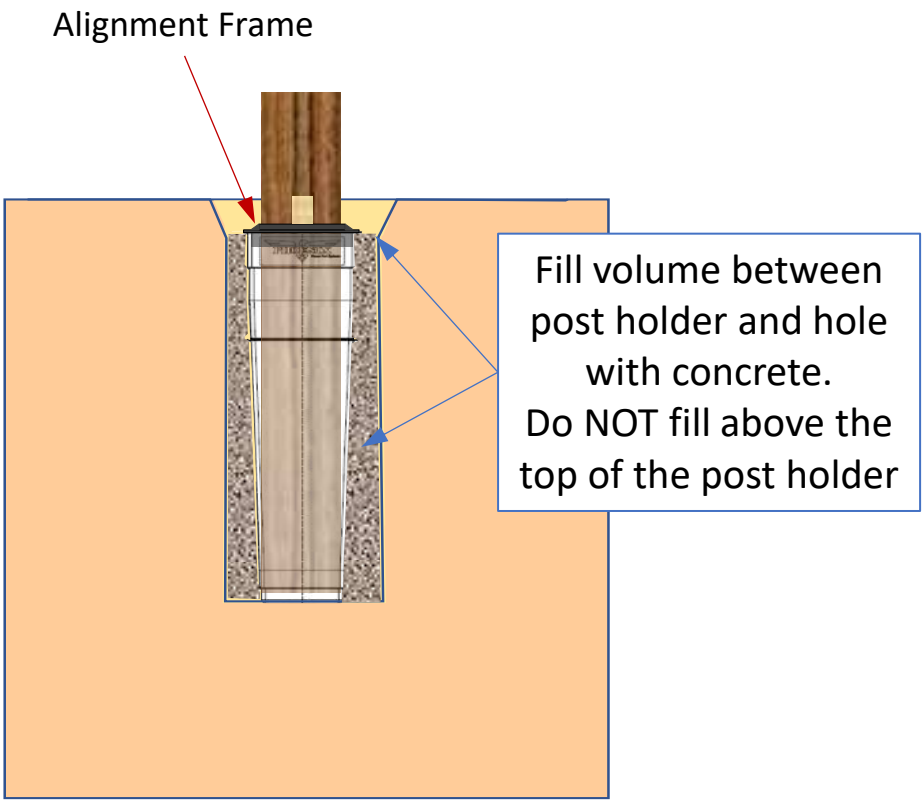

Figure 3a.

Allow concrete to cure for 48 hours.

End of Step 3 tips.

Tips for STEP 4. Install post into *Phoenix I* post holder

As stated, a good installation of your post requires that the sand be dry. Do **NOT** use common fill dirt or other materials that will not freely flow and fill all voids. Do **NOT** use other materials that will harden, solidify or compress. Do **NOT** use dry concrete or mortar.

Note that once the sand level is approximately 1/3 the height of the post holder, vertical adjustment of the post becomes difficult, if not impossible. If the post is not vertical or the post needs to be adjusted, the post and sand can be removed from the post holder and re-installed. When the sand level is near the top of the post holder the post will be solid and secure against any horizontal forces.

End of Step 4 tips.

Tips for STEP 5. Install locking shims at top of *Phoenix I* post holder

a. Place the 1" X ¾" X 2 ½" block between the post and the edge of the *Phoenix I* post holder.

Figure 5c. Placing locking shim blocks

b. Insert the shims between the block and the post with light pressure.
c. Using a hammer, tap shims into place on each side of the post. All four sides should be tapped in simultaneously until a snug fit is achieved (Figure 5d). It is not necessary to pound the shims in with great force. A snug fit is sufficient.

Figure 5d. Installing door shims

d. With a hand saw, gently score each door shim at a location flush with the 1" X ¾" X 2 ½" block taking care to avoid scoring the post. Break off the shims and fill the remaining voids

with sand up to approximately ¼ inch from the top of the post holder (Figure 5e). Only approximately 10-11 cups of sand will be needed to fill the entire space between the post and the post holder.

Figure 5e. Scoring and breaking off the door shims

e. The installation may be optionally completed without the use of the locking shims. Note that locking shims are recommended but if locking shims are not used, fill the sand to within ¾ inch of the top of the post holder.

End of Step 5 tips.