

How To Cast a New Base for a Stone

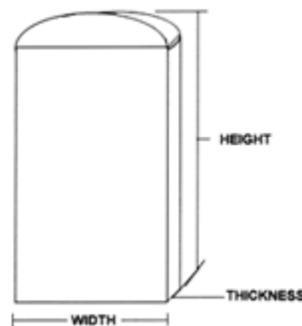
In the early 1930's WPA workers restored many gravestone using the best-known material available, sand cement.

Tablet stones were often placed directly into bottomless forms filled with cement, or holes dug in the earth were filled with cement and the stone thrust directly into the "puddle". Many stones treated with this method have subsequently broken at the point where the stone enters the surface of the cement.

A recommended treatment for this situation is to cast a base of concrete (pre-mixed works well) with a recess for the stone of sufficient length, width, and depth to permit using a high mortar mix to secure the stone in the base.

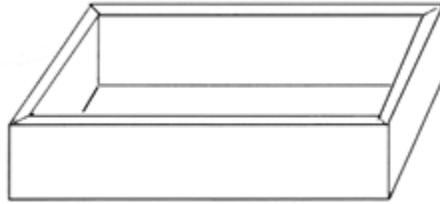
Step 1. The first step in this process is measuring the stone to be reset (see fig.1) and then preparing a form of sufficient dimensions based on the measurements. Measure its height, width, and thickness. Particular care must be taken when measuring the width and thickness of that part of the stone that will be inserted into the formed recess in the cast base. Irregularities such as curvature, shoulders, and varying thickness must be taken into consideration. Also, the end to be inserted into the recess in the base must be at right angle (or nearly so) to the vertical edge of the stone. A particularly "ragged" bottom may be "trimmed" using a masonry blade in a circular saw. The safest method is employing a monument dealer to do the "trimming".

(Fig. 1) Stone dimensions



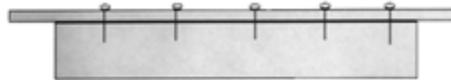
Step 2. A "box" form should be constructed that is 7 inches greater than the measured width and 7 inches thicker than the stone measurements. The height of the "box" form should be at least 6 inches plus an additional $\frac{1}{2}$ inch for each 8-12 inches of the measured height of the stone. For example, for a 42-48" height the box depth would be 6-1/2".

(Fig. 2) Box for casting a new base



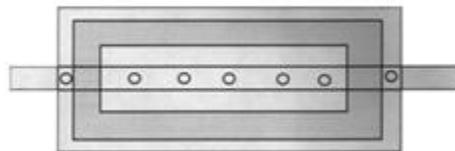
Step 3. Construct a block to form a recess in the box. The width and length of the block forming the recess should be at least 1 inch greater on both dimensions than the stone, depth at least 3 inches plus 1/2 inch deeper for each 8-12 inches of measured height of the stone above 36".

(Fig. 3) Side view of recess block



Step 4. Thoroughly saturate the interior surfaces of the box and the recess block with linseed oil or similar material to insure the form will "release" the casting when it is cured. Pour in the cement to the point where the recess block makes an indentation. Secure the recess block to the box form and continue filling the remaining space with concrete tamping with a stick to compact the concrete. As soon as the concrete surface becomes dull (about an hour) and a trowel mark holds its shape, remove the recess block carefully. Permit the casting to "cure" for a week, wetting it frequently to assist the "curing" process (see Fig. 4)

(Fig. 4) Top view of recess block in box form filled with concrete (the dark-shaded area).



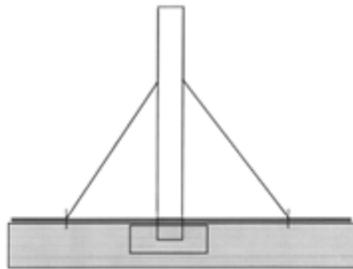
If the block has become too firmly embedded in the concrete it can be extracted later using a masonry bit to drill several holes up from the bottom until the drill reaches the block; then drive the block out with a dowel. These holes will be covered when mortar is introduced to set the stone.

Step 5. The cast base should be allowed to "cure" for a week or so. Frequent wetting of the cast will aid in the curing process.

Step 6. Set the new base into the ground on a bed of pea gravel and sand for drainage. The top of the base should be an inch or so below grade so that it does not show since it could detract from the appearance of the stone. Check that the cast is level lengthwise and crosswise.

Step 7. To set the stone in place, a high lime mortar mix (1part #1 Portland cement, 4 parts hydrated lime, 8 parts fine sand) should be prepared. First lay a 1/2 inch layer of mortar in the bottom of the recess, set the stone in place, fill the perimeter with mortar to the top of the cast base and slightly above shaping a "bead" to assist water run-off (see Fig. 5)

(Fig. 5) Reset stone mortared into the base and braced.



Step 8. Backfill and brace the stone ensuring it to be plumb (vertical) and level. Remove brace after a week or so.