

The three most common foundation designs are poured wall foundations, slab foundations and pier or pillar foundations.

## Step by Step

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### Slab Foundations

Slab foundations are simple and inexpensive, and they eliminate the need for major excavation, footings and foundation walls. Three variations of slab foundation construction are used: desert, wet/warm area, and cold area. For any type of slab foundation, stake out the area with batter boards and remove the top layer of sod and soil. The tools and materials are similar to those used to pour typical concrete slabs. The only exception is the rigid board insulation required for cold area construction.

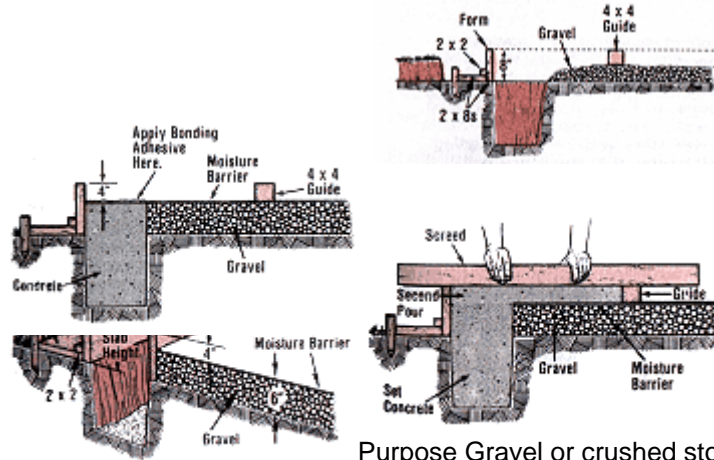
QUIKRETE® Fiber-Reinforced Concrete Mix offers increased resistance to cracking and chipping for slab foundations that will also serve as concrete floors in garages, tool sheds, and other work buildings.

QUIKRETE® 5000 High Early Strength Concrete is designed for improved workability and rapid strength gains. It is ideal for a foundation project requiring extra strength and fast completion.

### Desert Slab Construction

This type of foundation is constructed the same way as any slab, such as sidewalks or patios, except that a shallow footing is poured with it. The slab rests directly on the ground.

1. Remove the topsoil and dig the trench as shown.
2. Install and insulate any service pipes needed for water, sewer, etc.
3. Construct the forms; stake and nail them firmly in position. Note how anchor bolts can be temporarily positioned for the placing of concrete.
4. Mix and place the concrete in the footer and slab forms in one continuous operation.
5. Screed, float and trowel the concrete as if it were a sidewalk for



patio.

**6.** When constructing thicker slabs, use a 4" base of QUIKRETE® All-

Purpose Gravel or crushed stone to save on the amount of concrete used.

For larger slabs use a length of 4" x 4" lumber as a temporary screed guide.

**7.** Cure the concrete for 5 to 7 days.

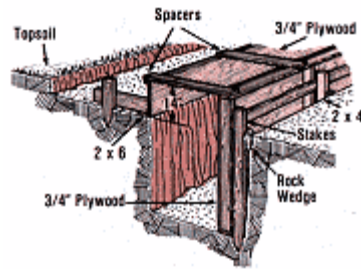
### Wet/Warm Area Construction

This type of slab is used in wet/warm areas that are free of freezing problems. The footer and slab sections are poured in two steps, and a moisture barrier is installed.

- 1.** Construct and install two separate forms as shown. Use short lengths of board to hold the inner form in position. Fill the inner form with an 8" (200mm) base of QUIKRETE® All-Purpose Gravel or crushed stone and install a moisture barrier, such as 6-mil plastic sheathing over the gravel.
- 2.** Place the concrete in the footer trench 4" (100mm) short of the top of the form. Allow the concrete time to set up and retain its shape (1 to 2 days.)
- 3.** Remove the inner form. Apply a coat of QUIKRETE® Concrete Bonding Adhesive to the exposed footer surface.
- 4.** Pour, screed, and finish the balance of the slab form, removing the temporary screed guides as you proceed.
- 5.** Cure the concrete for 5 to 7 days.

### Cold Area Construction

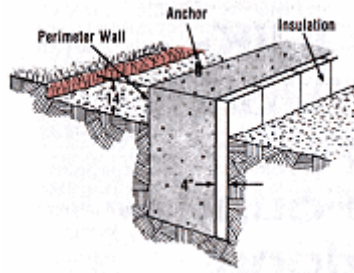
The footer section of this slab must extend below the frost line, and the slab itself must be insulated with rigid board insulation.



1. Dig a 2' (0.6m) wide footer trench to a depth several inches below the frost line. In firm soil, one side of the trench can act as a form. Construct and install the outer and inner form walls as shown.

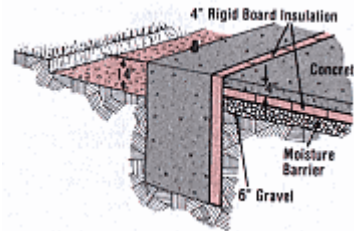
2. Pour the concrete to the top of the form, vibrate out air pockets, screed level, and install anchor bolts.

level, and install anchor bolts.



3. Remove the form and install a 4" (100mm) rigid insulation board on the inner side of the concrete foundation. Use soil to hold the insulation in place.

4. Lay down a 6" (150mm) base of QUIKRETE® All-Purpose Gravel or crushed stone, cover with a moisture barrier, and lay rigid board insulation on top of the moisture barrier as shown.



5. Place a 4" (100mm) thick layer of concrete over the insulation board, screeding and finishing as before.

6. Cure the concrete for 5 to 7 days.

### Pier and Pillar Foundations

A pier foundation is simply an individual footer that supports a structural post or beam. Simple pier foundations are commonly used for small structures built with a crawl space design. Anchor bolts or plates are usually set in the pier footer before the concrete sets. This makes attaching the post or beam much simpler and results in the strongest possible application.

Pier foundations should be set deep enough in the ground to avoid shifting and upheaval caused by freeze/thaw cycles. A truncated pyramid shape saves on the amount of concrete used. Forms can be constructed of plywood or other sturdy lumber.