



Let's Build Something Together™

# How To Build a Deck:

## Part 3 – SETTING THE POSTS

**Skill Level: ADVANCED** Try these projects after you have a collection of DIY successes under your belt, and make sure you're ready for a challenge. You'll need experience with a wide variety of specialized tools, and it may take several hours to finish. If you've built a deck or installed an irrigation system, these projects probably match your abilities.

### ✓ MATERIALS

- Earth Auger, Garden Spade, or Shovel
- Post Hole Digger
- Spud Bar
- Shovel
- Tape Measure
- Utility Knife
- Landscape Fabric
- Gravel
- Concrete Mix
- Wheelbarrow
- Mortar Hoe
- Water—for the concrete mix
- Concrete Tube Form—if required by building code
- Deck Posts
- Post Level
- Extra Lumber—for bracing and cleats
- Wood—for batterboards
- Mason's String
- Nails and Screws
- J-Bolts—optional
- Metal Post Anchors—optional
- Beams
- Pencil
- Square
- Chalk Line
- Line Level
- Circular Saw
- Drill with Bits
- 2x4—for cleats
- 3 lb. Hammer
- Carriage Bolts, Washers and Nuts
- Socket Wrench and Sockets
- Clamps
- Reciprocating Saw
- Work Gloves
- Ear Protection—if using an earth auger
- Dust Mask
- Safety Glasses
- Back Brace—optional

Decks are great for entertaining family and friends. But with all of those people on the deck, you'll need to make sure it's on a strong foundation. In this third part of our six-part series, *How to Build a Deck*, you'll learn how to set the proper footings to support your deck. For steps on design and layouts, refer to previous videos and printable instructions in this series at [Lowe's.com/Videos](https://www.lowes.com/Videos).

### PREPARATION

- 01 Refer to *How to Build a Deck: Deck Layouts* for specific instructions on laying out the deck perimeter, marking the post locations, and marking deck height.**
- 02 Make sure you have a building permit and follow the building codes for your location. The codes should state post requirements including minimum hole diameter and depth if you have to dig. In most cases, you'll have to set the foundation below the frostline. Codes may also recommend how to construct your footings and attach posts to beams.**
  - There are various methods for constructing footings for decks:
    - Dig a hole and pour concrete in it to support the bottom of the post.
    - Dig a hole and use a concrete tube form, J-bolt, and metal post anchor to hold the post in place.
    - Dig a trench, pour a concrete footing, and use wood beams or concrete building blocks to support the deck structure.
    - Some regions don't require digging at all. The posts are set on ground level piers.

### DIGGING POST HOLES

- 01 Select the appropriate post hole tools:**

- **Earth auger:** An auger is a gas-powered earth drill that digs faster than other tools, but is heavier and requires strength to operate. Augers can be rented at tool rental centers.



#### IMPORTANT

Installing the footings requires digging and some manual labor. If that doesn't sound like something you want to do, discuss the job with a Lowe's associate. We can install your deck for you.

### DIGGING POST HOLES (cont.)

- Garden spade or shovel: A garden spade can be used to dig holes and to backfill a hole.
- A post hole digger and spud bar: Also called a “clam-shell” digger, a post hole digger can cut the sides and remove dirt from a narrow hole. A spud bar is a long, metal bar with a beveled tip that can be used to break up hard ground or rocky soil. Use these additional tools along with the earth auger or garden spade.

**02 Use the selected tools to dig the post hole to the width and depth required by code. Once done, move on to the next hole until all are completed.**

- **TIP:** Dig the hole no larger than is necessary; a large hole is not only more work, it requires more concrete. Some building codes specify the depth and width of post holes.



**03 Check your building permit or ask your local building department if an inspection is required at this point. If so, schedule and complete the inspection before continuing.**

**04 If you are adding landscape fabric, roll out the fabric and cut openings for the posts.**

### MIXING CONCRETE

**01 Prepare concrete for the post holes:**

- For small jobs, blend bags of concrete mix and water in a wheelbarrow, following the manufacturer's instructions.
- For large decks with numerous posts, consider having the concrete delivered pre-mixed. If the deck area isn't accessible by a concrete truck, you may need to hire a concrete pumping service to deliver the concrete mix to the deck location.

**02 Follow your building codes for the footings and posts.**

- Some building codes require inserting the post in the hole before filling with concrete. If so, fill the hole or tube form with concrete around the post to code level.
- Other codes call for concrete to serve as a footing on which the post will sit.

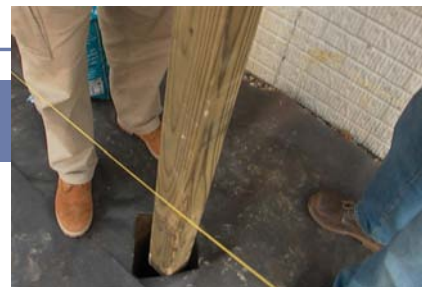
**03 Use a board or shovel to work the concrete, eliminating air pockets.**

**04 Check that the top of the concrete is level.**

- If required by the building code, insert a J-bolt into the wet concrete at the exact center of the footing. The J-bolt should have  $\frac{3}{4}$ -1" of threads exposed so that a metal post anchor can be attached later with a nut.

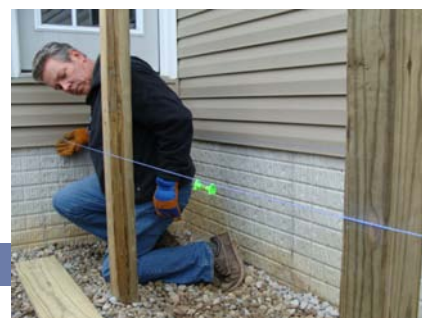
### MIXING CONCRETE (cont.)

- 05 When the concrete has set, place the post on the footing. Make sure that the posts are long enough to reach the proper height for the deck beams.
  - If a J-bolt was previously installed, now install the metal post anchor and nut. Local code may require a metal barrier between the footing and the post to restrict access to wood by termites.
- 06 Use a post level to check that the post is plumb (vertical), then attach temporary braces with clamps.
- 07 If necessary, fill the rest of the hole with gravel up to the surface. Gravel will improve drainage.
- 08 Finish setting the other posts. To make sure they are lined up properly, use the layout strings on the batterboards as a guide.
  - **TIP:** You may need to adjust the strings and batterboards to accommodate for the width of the posts.
- 09 Cover the landscape fabric with gravel.



### ATTACHING THE BEAMS

- 01 Follow the building code for attaching the horizontal beams to the vertical posts.
  - Carriage bolts attach the beam and post from the side.
  - Metal post caps attach the beam to the post below it.
- 02 If building a deck next to the house, identify the height of the top of the beams on the house as described in the previous instructions on *Deck Layouts*.
- 03 Extend a chalk line from that mark along a row of posts.
- 04 Using a line level, mark all post heights.
- 05 If required by code, add cleats to provide additional support to the beams. Even if not required, cleats are a good idea.
  1. Measure down the width of the beam.
  2. Install a small cleat made from a 2x4 with nails or screws.



### ATTACHING THE BEAMS (cont.)

#### 06 Cut all beams to length, following the building plans.

- **SAFETY TIP:** Always wear a dust mask and safety glasses when cutting treated lumber.
- Apply a weather sealer to the cut ends of treated lumber.

#### 07 Set the beams on the cleats and drill holes for the carriage bolts.

- Use clamps to hold the beams in place.
- **TIP:** The beam edge might have a slight arc called a crown. Make sure that the beam is installed crown-side up. The crown should always arch up in the middle for any construction project.

#### 08 Drive the bolts through the holes and secure with washers and nuts.

#### 09 Finish installing all of the beams.

#### 10 Cut all posts to length with a reciprocating saw.



Now the posts and beams are set for your new deck. The next step is installing the framing and decking, covered in the next part of this series on *How to Build a Deck*. You can find these and other resources online at [Lowes.com/Videos](https://www.lowes.com/Videos).

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