

Framing Floor & Floor Decking

TASKS 14 TO 18

Purpose: To frame and deck the ground-level floor over the basement or crawl space. Floors for split-level or multi-story homes would be similar.

Tools: Framing hammer, electric drill, circular saw, crescent wrench, ladder, pencil, tape measure, and large caulking gun. If a qualified operator is present, a nail gun and compressor.

Materials: 2x10 or 2x12 joists, $\frac{3}{4}$ " T & G "Oxboard" plywood, foam sill seal, construction adhesive (in tubes), 16d and 8d nails.

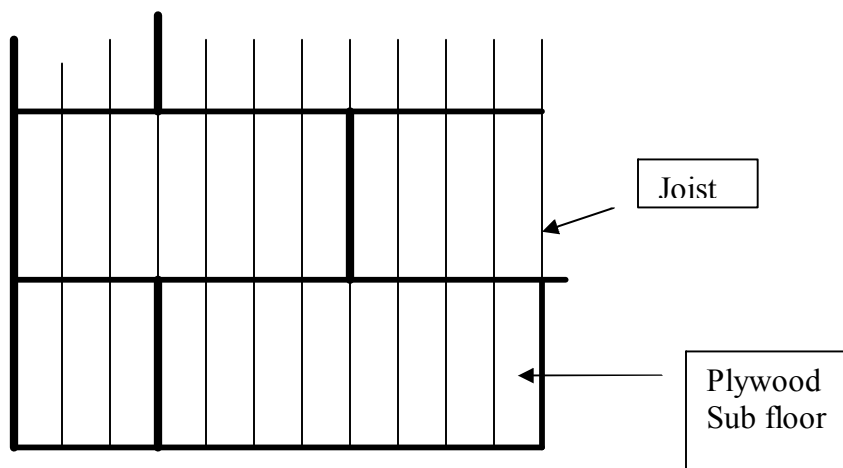
Safety Issues:

- When cutting with a circular saw, work on a stable platform like saw horses. Don't use a saw where the work might move and allow the saw to cut you or someone else.
- Framing a floor over the basement may result in falls. Be careful when working on ladders or on the joists before the deck is complete.

Inspection Criteria

- All joists nailed with 4-16d nails through rim joists.
- Bridging installed as shown on drawings.
- Check sill plate and spacing of anchor bolts 3' or 6' (see Step 4) OC and within 12" of end of any plate.)

Sub floor Placing Plan



Joists are at 16" on center

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Sequence and Methods:

- 1 Measure the diagonals of the foundation walls to make sure the house is square. If the diagonals aren't equal, adjust until they are and mark the corners. Snap chalk lines between the corners.
- 2 Install the 6" wide foam sill seal flush with the chalk lines of Step 1. If the chalk line has been erased, stretch a string line from corner to corner and follow it.
- 3 Drill and install the pressure-treated 2x6 plate on the anchor bolts embedded in the top of the concrete wall. First mark the bolts by laying the plate beside the bolts and using a square, mark both sides of each bolt on the plate. Then measure the distance from the chalk line to the center of the bolt and mark that distance on the plate. Drill the bolt holes and install the plate. The plate should be flush with the chalk line.
- 4 There must be an anchor bolt every 4' along each sill plate, and a bolt within 12" of the end of each board. Each board shall have at least 2 bolts. If there isn't a bolt in a required place, drill in a 7" x 1/2" expansion anchor. Install a washer (square washers are better as they provide more anchorage in a wind storm) and nut on each bolt.
- 5 If there is to be a basement, install the basement partitions on either side of the stairway, with the top of the top plate level with the tops of the foundation plates. Other basement partitions may be installed at this time also, or left until later.
- 6 Install rim-joists around the open sides and around stairs or other openings.
- 7 Starting at either the center or backside of the house, mark on the plate the location of the floor joists every 16". These marks indicate the center of each floor joist. The end joists will be flush with the face of the house.
- 8 Install floor joists. Normally these will stop or lap on an interior wall or beam, as they can't span the entire width of the house.
- 9 Using the most warped joists, or joist ends if some joists have been cut off, cut 14 1/2" solid bridging blocks. Normally you'll need a row for each row of joists, but bridging is usually shown on the framing plan. (You can also make X-bridging from 1x4 but volunteers do better with solid bridging.)

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- 10 Install the solid bridging using 4-16d nails per end. Normally the bridging will be about mid-span of the joist. Stagger the bridging so you can nail through the joist into the end of the bridging. (You can also toe-nail either solid or X-bridging with 4-8d nails per end.)
- 11 Tongue and Groove decking is attached with both glue and nails. This eliminates squeaky floors. Using a large caulking gun, apply a bead of adhesive down the center of each joist for the first 4’.
- 12 Lay the sheets on the joists, starting with a corner and getting each outside sheet flush with the outside edge of the rim-joist(s). Once the sheet is in position, nail it with 8d nails at 6” on the edges and 12” in the field.
- 13 If there is a stair, protect the opening by nailing 2x lumber across the opening and then covering with plywood. Make sure it’s strong enough to support the weight of several heavy people.
- 14 Plywood sheets should lie with their long dimension across joists and two sheets should join as close as possible to the middle of the joist for good bearing.
- 15 Stagger joints of plywood so the end of an 8’ sheet is about the middle of the two sheets on either side.
- 16 If the last sheet of a row overhangs the rim-joist, this can be cut either before or after it is installed. The piece that is cut off can be used in the next row or elsewhere.
- 17 Trim edges and check nailing.

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