

Installing Suspended Ceilings

Following are tips and instructions on how to install a suspended ceiling. Spend a few minutes reading the directions thoroughly. This can help save you time and effort. Inside this document you will find information about:

- Planning for a Suspended Ceiling
- Installing Wall Angles
- Locating and Hanging Suspension Wires for Main Tees
- Installing Main Tees
- Installing Cross Tees and Border Cross Tees
- Installing Ceiling Panels

Step #1

PLANNING FOR A SUSPENDED CEILING

First, get the exact measurements of the room where the suspended ceiling will be installed. Use special care in measuring any odd-shaped alcoves, bays, etc.

Draw the exact dimensions to scale on graph paper (see first image below), or bring the room dimensions to your local retailer and ask a salesman to assist you in estimating the materials you'll need.

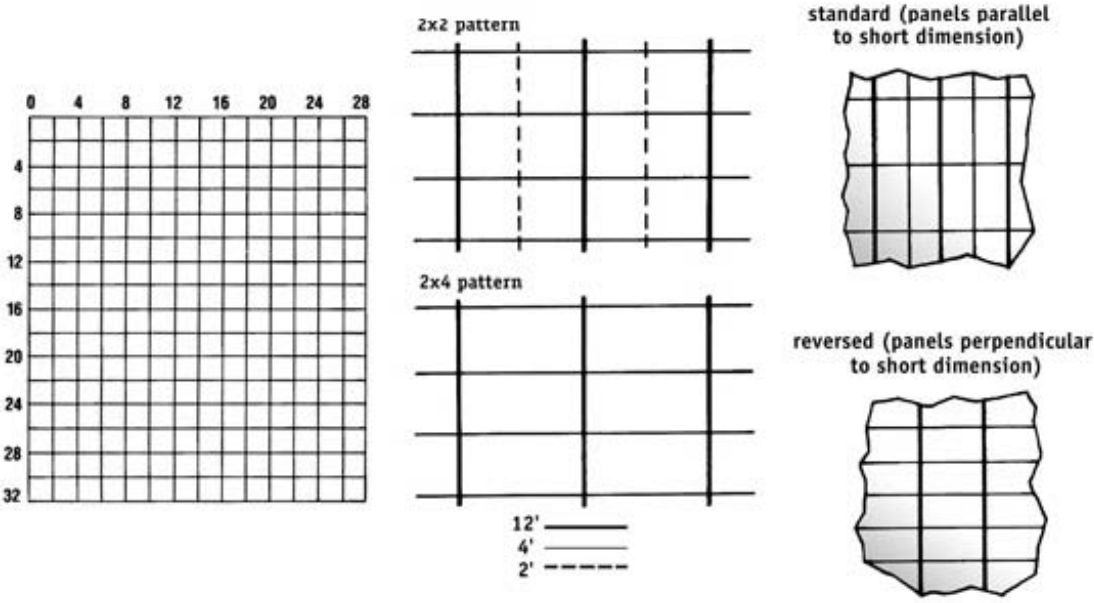
You can choose from either a 2x2 or a 2x4 pattern (see second image below). The pattern you pick will determine the material requirements for your ceiling.

For the 2x4 pattern, decide whether you want to install the patterns in a standard or reverse pattern (see third image below). Each pattern offers a different appearance.

Now that you've made these decisions, sketch the layout for the planned ceiling on graph paper. You can use the layout in the first image, or purchase graph paper in a variety of stationery store. Regardless of which pattern you select, draw the main tees 4' apart. Position the tees so that the border patterns at the room edges are equal on both sides and as large as possible. Try sketching several layouts before beginning the actual installation to determine which one looks best.

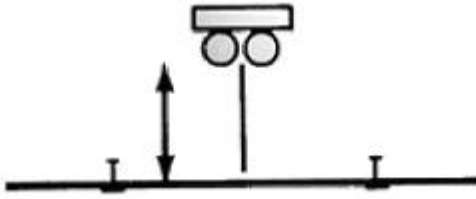
- It is important to space the cross tees so the border panels at the ends of the room are equal and as large as possible. If you are using a 2'x4' pattern, space the 4' cross tees 2' apart. For a 2'x2' pattern, add 2' cross tees between the midpoints of the 4' cross tees (see second image above).

If the ceiling will be recessed and built-in lighting will be installed, decide where to locate the panels of light and clearly identify them on the drawing.



Step #2

* Determine the exact height at which the suspended ceiling will be installed. Allow a minimum of 3" to 4" clearance between the old ceiling or joists and the new ceiling for installation of the ceiling panels. Additional clearance will be required if you are using recessed lighting (see image).



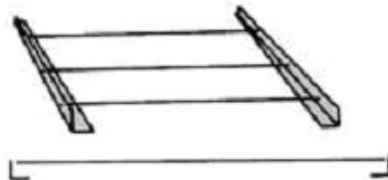
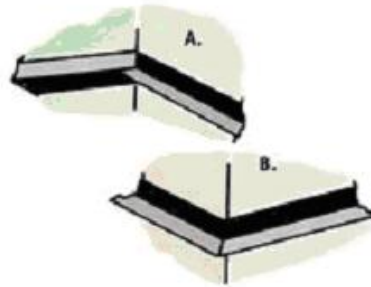
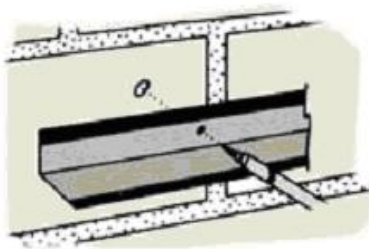
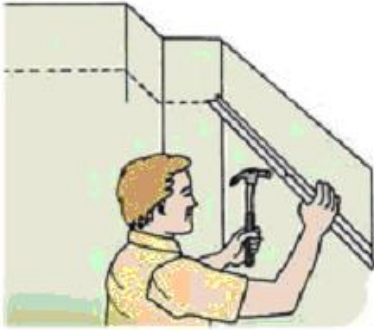
After locating the exact position for the suspended ceiling, use a level to draw a line completely around the room indicating where the wall angle will be applied (see

first image below). Don't assume the original ceiling is level-use a level for accuracy. Set the wall angle low enough to conceal as many pipes, ducts, etc., as possible.

Fasten the wall angles securely to the wall at all points. Nail them firmly to studs, or use screw anchors or other masonry fasteners on brick or masonry walls (see second image below).

Position the wall angle so that the bottom flange rests on the level line you have drawn on the wall. Take the time to do this right!

Overlap the wall angle on inside corners (see third image below, part A), and miter the wall angle on outside corners (see part B). Make a temporary wooden miter box if you don't have one. Cut any needed angles with metal cutting snips or a hacksaw.



Step #3

LOCATING and HANGING SUSPENSION WIRES FOR MAIN TEES

If you are going to use recessed lights, install the wiring before putting the suspension wires in place.

For recessed lighting, you can use 2x 2 or 2x 4 drop-in lighting fixtures, which are specially designed for this purpose. You can also center fluorescent light fixtures over the panels and use a luminous lay-in panel instead of a regular ceiling panel. These lay-in panels now come in several attractive designs.

Refer to your sketch of the room for the location of all main tees. Main tees should always run at right angles to the joists in the room.

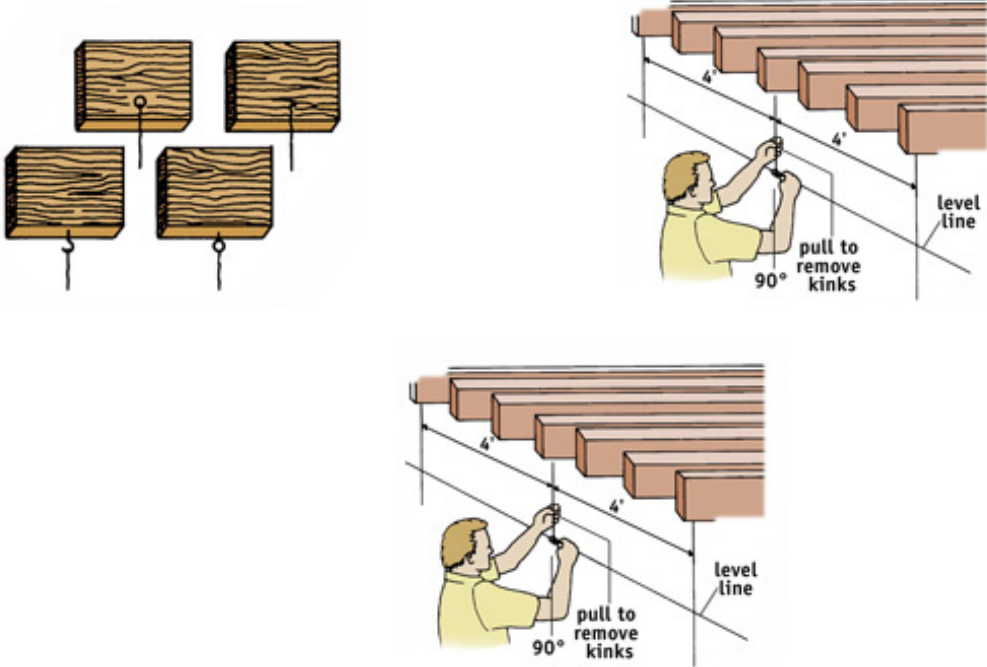
Locate the position of each main tee by stretching a tight line from the top edge of the wall angle on all sides of the room at each position where the main tees are to be placed (see image above).

Now, cut the suspension wires to the proper length. The wires should be 12" longer than the distance between the old ceiling and the new guideline string you have stretched to indicate the position of each main tee.

Locate the first suspension wire for each main tee directly above the point where the first cross tee meets the main tee. Check your original sketch of the room to determine this location.

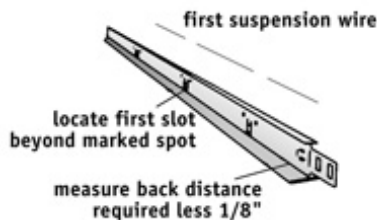
Be sure the suspension wires are securely fastened. Apply them to the ceiling with screw eyes, screw hooks, nails, or drilling (see image above).

Attach a suspension wire every 4' along the level guideline (see image). Stretch each wire to remove any kinks and make a 90 degree bend where the suspension wire crosses the level line.



Step #4

INSTALLING MAIN TEES



Most main tees are 12' long and have cross tee slots punched every 12" beginning 6" from each end (see image).

Refer to your layout sheet to determine the distance from the wall to the first cross tee. Now measure this distance along the top flange of the main tee and locate the slot just beyond this point.

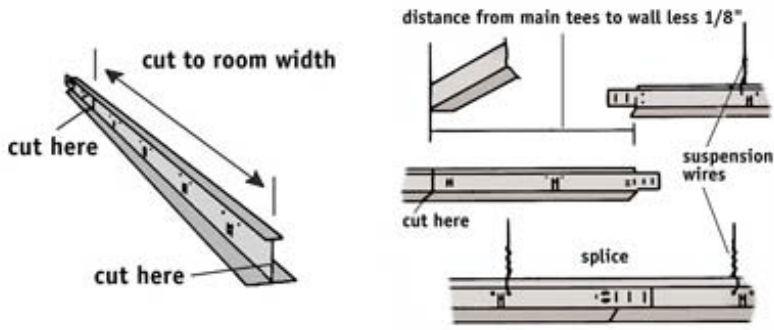
From this slot, measure back the same distance, subtract 1/8" and saw the main tee at that point. The 1/8" subtraction is for the thickness of the wall angle.

If the wall angles are not square, position the cross tee slots accordingly.

When main tees are installed in rooms less than 12' across, cut the main tee to the exact measurement of the room, allowing 1/8" for the thickness of the wall angle (see first image below).

For rooms wider than 12', the main tee can be spliced (see second image below). Be sure to align the splice so that the suspension wires are correctly positioned. Splice carefully, or all the main tees will be thrown off.

Install the main tees so that they are all level with the wall angle already mounted. Use a long level for this.



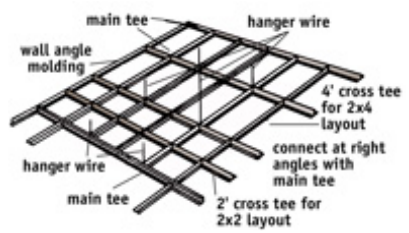
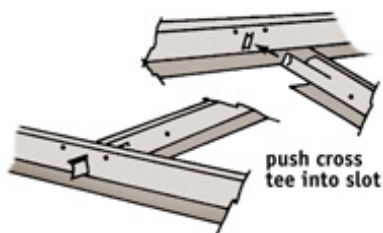
Step #5

INSTALLING CROSS TEES and BORDER CROSS TEES

Install the cross tees by inserting the ends of the cross tees into the slots in the main tees (see image). Use the manufacturer's instructions for fitting the cross tees into position.

Determine the location of the cross tees by the pattern you selected—either 2'x2' or 2'x4'. Be sure the lock tab on the cross tee is on the outside of the slot (see image). This attachment is slightly different in some types of tees.

You can remove most cross tees by depressing the lock tab with a screwdriver. Border cross tees are installed between the wall angle and the last main tee. Measure from the last tee to the wall angle, allowing 1/8" for the thickness of the wall angle. Cut the cross tees and install them by inserting the connector in the main tee and resting the cut edge on the wall angle.



Step #6

INSTALLING CEILING PANELS

Your final main and cross tee arrangement will look similar to the image above. The top part of the illustration shows an arrangement of a 2'x4' layout, while the lower half shows main and cross tees arranged for a 2'x2' layout.

Drop the ceiling panels into position by tilting them slightly, lifting them above the framework and letting them fall into place (see image).



