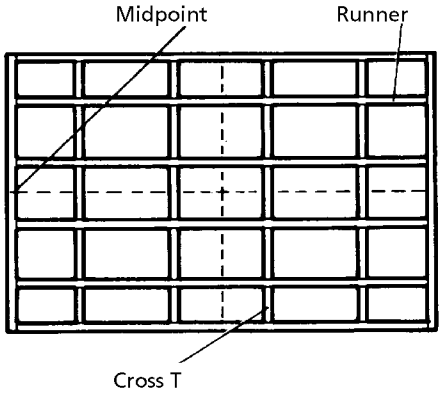
HOW-TO BOOKLET #3055

SUSPENDED CEILINGS

TOOL & MATERIAL CHECKLIST

- ❑ Carpenter's Square
- ❑ Tape Measure/Line Level
- ❑ Hacksaw or Snips
- ❑ Wall Angles
- ❑ Cross Ts
- ❑ Level/Chalkline
- ❑ Hammer/Pliers
- ❑ Ceiling Tile
- ❑ Runners
- ❑ Wire/Screweyes
- ❑ Tin Snips/Hacksaw

Read This Entire How-To-Booklet for Specific Tools and Materials Not Noted in The Basics Listed Above.



Determine the location of the runners and cross Ts and sketch a plan of the ceiling for easy material figuring.

Suspended ceiling tile is one of the fastest and least expensive ways to finish an unfinished ceiling or renew an old one. The tile hides ceiling defects that can't be glossed over with paint or wallpaper or another type of "covering."

The different parts of a suspended ceiling are: wall angles, runners, and cross Ts–shaped metal components that interlock to hold up the ceiling panels–and the panels themselves. The panels come in a wide range of textures, colors, and designs, and you can buy luminous panels if you want to install fluorescent lighting between the ceiling and the suspended ceiling below.

PLAN THIS PROJECT FIRST

Panels for suspended ceilings are available in 2x2-feet and 2x4-feet sizes. The 2x4-feet size works best if you will install lighting because it fits the standard fluorescent tube length.

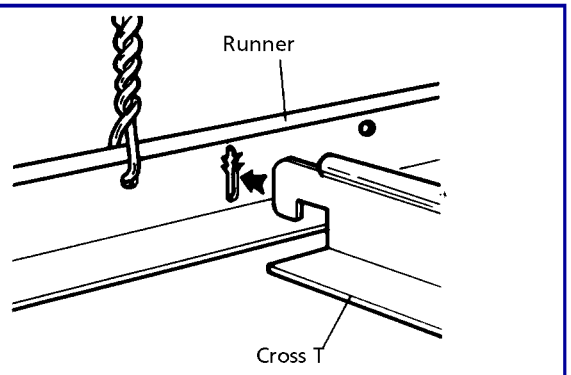
The smaller panels require twice as many cross Ts to hold them up and there are twice as many panels to install. Therefore, the project will take a little bit longer to complete. The cost may also be just a tad higher for additional materials.

About the easiest way to find the amount of hardware and paneling needed is to make an installation plan before you buy the materials. A plan will let you count the number of feet of wall angles, runners, Ts, and such you will need. It also will provide the opportunity to plan for lighting and make decisions about how the panels will fit. Draw the outline of the room to scale on graph paper and mark the position of the runners and cross Ts.

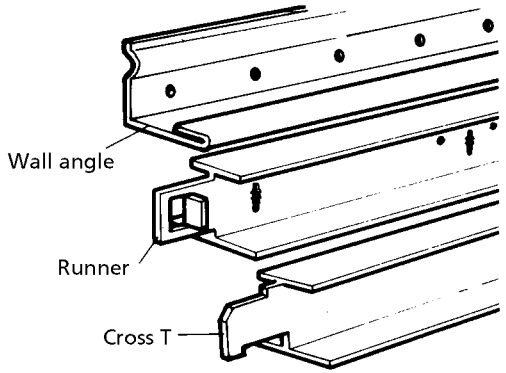
To determine a symmetrical layout of panels that avoids the need for radically narrower panels to fill in along the edges, measure two adjacent walls and find their midpoints. Measure from the midpoint of the wall parallel to the joists; the runners will be attached perpendicular to this wall.

If the distance from the last whole foot of the measurement is less than 6 inches, runners should be placed exactly 1 foot on either side of the midpoint. If it is more than 6 inches, a runner should be installed at the midpoint.

Do the same calculation along the other wall, this time using 4-foot intervals. If the last full 4-foot interval ends 3-1/2 feet or closer to the end of the wall, put a line of cross Ts on the midpoint. If it is farther than 3-1/2 feet, put the first line of cross Ts exactly 2 feet on either side of the midpoint.



Runners have slots every few inches into which the ends of cross Ts lock. Cross Ts sit on the wall angles.



Wall angle, runners, and cross Ts are the main components of a suspended ceiling grid system. These parts are metal.

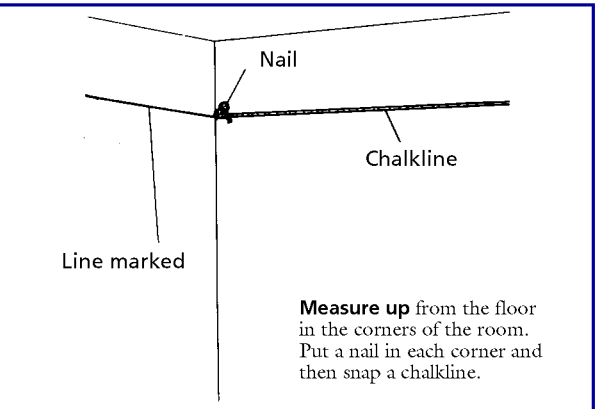
INSTALLATION STEPS

Below are the procedures in installing a suspended tile ceiling. The procedures are in "step" increments to help you along the way.

1. After planning a layout, measure up from the floor to the height where you want the ceiling. The standard height is 7 feet, 6 inches which is also considered a minimum height for lighting in a suspended ceiling. The ceiling should be no closer than 3 inches to any projection.

   You can hang it a few inches lower to avoid projections or box them in. Mark the ceiling height on all four walls and stretch chalkline between nails driven at the height on opposite walls to check for horizontal with a line level. Make any adjustments necessary, and then use a chalkline to mark the height around the room, using a level to keep it horizontal.

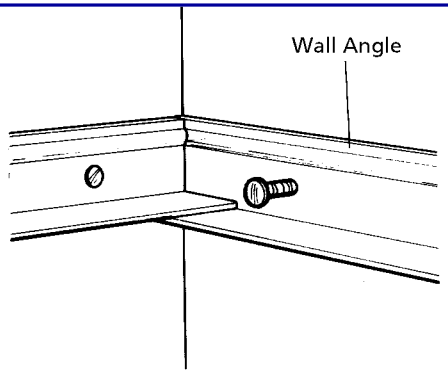
2. Nail or screw lengths of wall angle around the perimeter of the room at the ceiling height line as shown. Butt pieces of wall angle to span long distances and overlap pieces at the corners. Cut the pieces to fit with tin snips or a hacksaw and remember to account for the fraction of an inch thickness of the wall angle when cutting to butt against a piece on an adjacent wall.



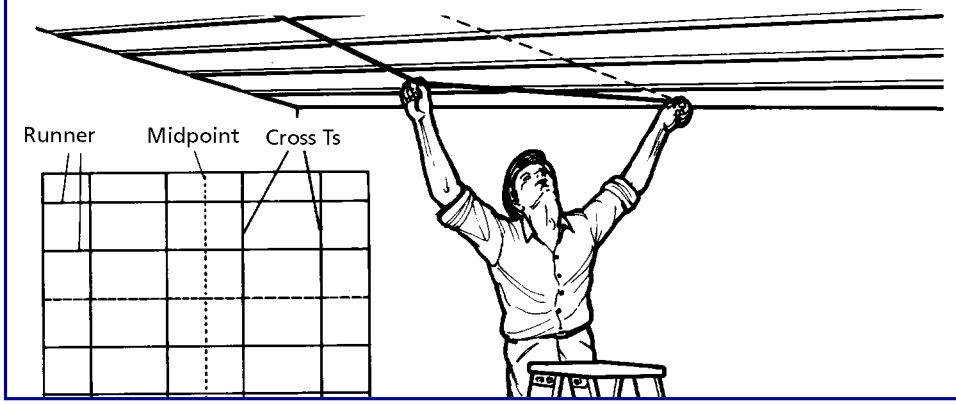
Measure up from the floor in the corners of the room. Put a nail in each corner and then snap a chalkline.

3. Find the midpoints of the wall and snap chalklines across the joists—or in either direction across a finished ceiling–at 2-foot intervals, starting at the midpoint of the wall or at a point 1-foot to either side, depending on the layout plan

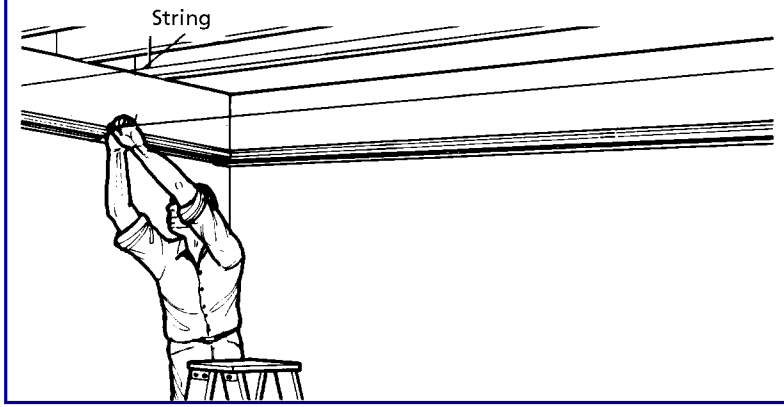
4. Mark the locations of the cross Ts on the walls parallel to the runners at 2-foot or 4 foot intervals, depending on the size of the panels. These lines should start at the midpoint or 2 feet off center, according to your layout.



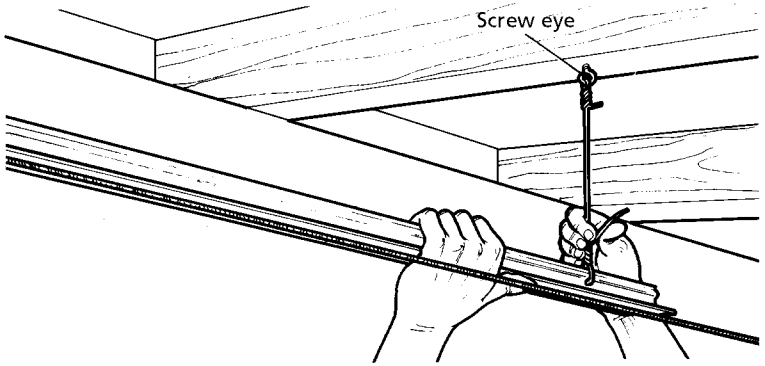
Nail on the wall angle, bottom edge on the line. Overlap to make any needed length and at the corners.



Stretch a chalkline between the nails at the midpoint, or 1-foot. to either side, depending on the layout. It must be perpendicular to the joists. Snap the lines. Repeat at 2 foot intervals across the ceiling. These mark the location of the runners on the ceiling.



At the points on the adjacent walls where the cross Ts are to be located, stretch strings from nails driven into the wall exactly at the bottom of the wall angle. These mark the locations of the cross Ts as well as the level of the runners.



Attach screw eyes to every fourth joist at the point where the chalkline crosses it and twist the wire through the eyes so that about 6 ins. of wire hangs below the height of the wall angle. Attach the runners with the bottom edge at the level of the chalkline.

Attach chalklines across the room from nails driven at the bottom of the wall angle at its intersections with the cross Ts. These lines mark the height at which you will hang the runners.

5 Starting with the joists at either end of the ceiling, put a screw eye into every fourth joist at each chalk mark. Twist a piece of suspension wire through each screw eye so that the wire hangs down 6 inches below the ceiling line. This length is approximate since you will be twisting the wire onto runners. You want a bit more wire for this purpose. Give it a test.

Cut the runners so that they cross the strings exactly at a notch that will accept a cross T. These notches are 3 inches apart along the length of the runner and hang from the wires so they just touch the strings. Check that the strings are taut and level as you work. Runners are to be butted, or attached, to span extra long distances—depending on the product you use.

6 Using the strings as guides, attach the cross Ts between the runners. Along the wall, cut the cross Ts to fit between the inside of the wall angle and the runner. Attach the cross Ts to the runner and slit the other ends on the lower lip of the wall angle.

These two pieces should now slip together perfectly. If not, cut the notch a tad wider with tin snips so it does have a tight fit. The metal is thin and can be formed quite easily.

7 When the grid system is complete, slide the panels through the grid at a diagonal and let them flop down into position, adjusting them as necessary. At the walls, cut the panels to fit with a utility knife.

If you are installing illuminating panels, first bring power cables to the panels from a junction box in the ceiling. Make sure the power is off before attaching the cables at the junction box. Have a helper aid in lifting the

illuminating panel into place in the grid and wire the panel to the power cable. Then set the rest of the panels into position.

BOXING IN PIPES

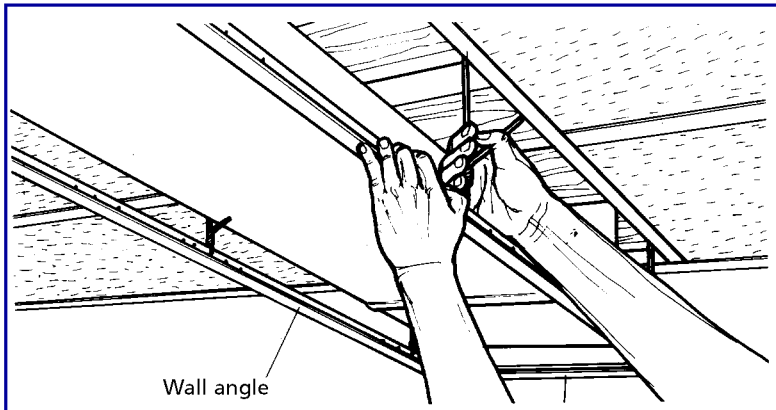
If piping or ductwork intrudes below the level of the ceiling, box it in with a combination of the grid system and framing.

1. Frame around the obstruction with 1x4s every 16 inches, on center.
2. Cut a ceiling tile to fit the bottom of the framing and secure the first 1/2-inch of the tile into the framing with #4 finishing nails or screws. Be careful to keep the fasteners near the edge since the runners only cover about 3/4-inch.
3. Set a runner over the tile edge and secure the top edge against the framing. Fasten the top 1/4-inch of the runner to the framing using the predrilled holes; leave at least 1/2-inch depth for the ceiling tile.
4. Set the other runner on the opposite side of the tile and framing, securing as before.
5. Cut a ceiling tile to fit between the open side of the runner up to the ceiling. Place a shim between the back of the runner and the tile to keep the tile flush to the finished edge. Use pre-painted panel nails that match the color of the ceiling tile to fasten the bottom edge of the tile.

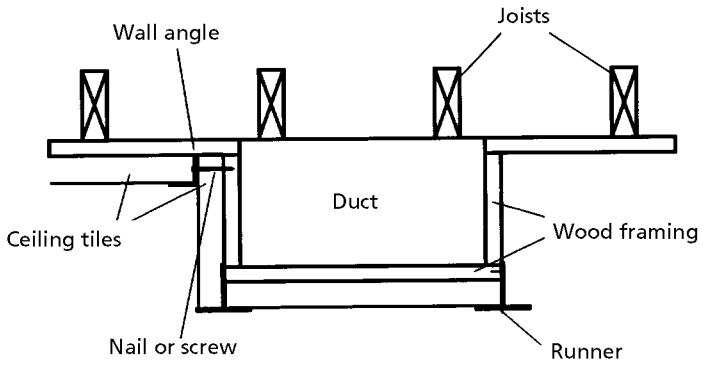
   Fasten it through a predrilled hole in the runner and into the horizontal tile on the bottom of the framing.

Note: You can also wedge a wall angle in the bottom to finish the edge or glue the edge to the runner.

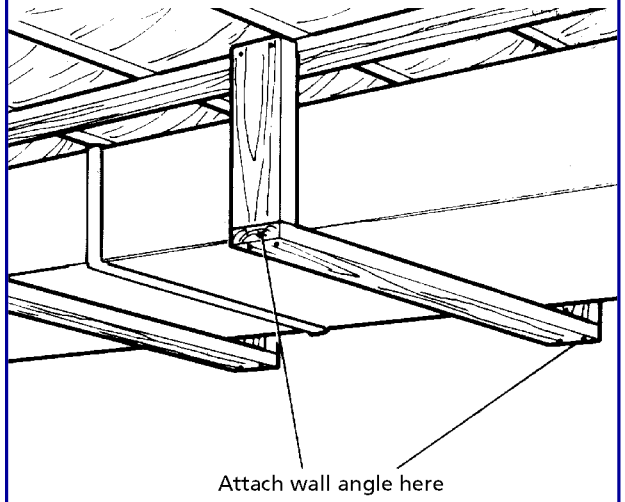
6. Nail a wall angle over the vertical tile and into the box frame around the ductwork. This will hold the ceiling tiles that butt into the framework.
7. Repeat the process on the other side of the frame to complete the job



Hang runners below the obstruction from wires attached above the edges of the main ceiling. Use chalkline to mark the level. Attach the runners to wall angle with pop rivets through predrilled holes where they meet the wall.



Piping or ductwork can be boxed in using a combination of the grid system and framing. Simply nail or screw through the wall angle and tile into the wood frame.



A break also can be hidden with framing and paneling on vertical surfaces. Attach paneling to vertical faces; angle to edges.