



HOW-TO BOOKLET #3044

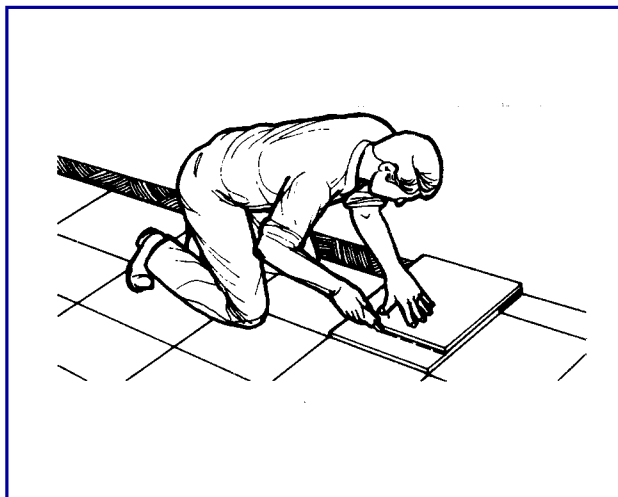
VINYL FLOOR TILE



TOOL & MATERIAL CHECKLIST

- Tri-Square
- Underlayment/Nails
- Tile Adhesive
- Adhesive Spreader
- Tape Measure/Square
- Utility Knife/Blades
- Chalk/Chalkline
- Marking Pencils

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



Homeowners with a creative bent often enjoy installing vinyl tile because it is relatively easy and fun. For a successful job, however, you've got to plan ahead, make proper preparations, design your pattern and color combinations, measure accurately, and work on a day when you won't be interrupted. You must also have a proper subfloor for the tile and follow the instructions that come with the product you have bought.

Vinyl tiles are available in many styles, appropriate for many different situations. Some are solid vinyl, others have a cushioned layer, and patterns vary from gently flecked, soft geometric, and floral to imitations of brick, cork, and other surfaces. However, the main choice is between self-adhesive and plain tiles. Self-adhesive tiles are less messy to lay, but stick instantly and don't allow much margin for error. For plain tiles, always use the adhesive recommended by the makers-and where appropriate, buy a supply of suitable solvent for cleaning.

ESTIMATING TILES NEEDED

While most vinyl tiles are available in 12" squares, 9" x 9" and 9" x 18" are available in some designs. **Fig. 1** will aid you in calculating the number of tiles to complete an installation job. For instance, if you are working with a floor area that is 280 square feet (a 14' x 20' family room), and you want to use 9" x 9" tiles, the table indicates 356 tiles for 200 square feet and 143 tiles for 80 square feet, a total number of 499 tiles.

When ordering tiles, it is most important to consider the waste factors. In our example, the allowance for waste is 7% of the total number of tiles, or an extra 35 tiles. This would make a grand total of 534 tiles. Since tiles are usually boxed 80 to a carton, this would mean that we need over 6-3/4 cartons. Even if the dealer is willing to split a carton, it would be wise to take the seven full cartons. This will assure an adequate supply of tiles from the same lot and also allow for replacement if they are ever needed.

PLOTTING A DESIGN

One of the most appealing things about vinyl tiles is that different colors and styles can be mixed to create a range of decorative effects. For example, you can combine a pale, plain-colored tile for the main floor area with a "border" of darker patterned tiles.

For the more adventurous, vinyl tiles also lend themselves to being laid diagonally. The techniques for doing so are slightly different from the basic laying method, and are discussed later in this booklet. Plot your design on graph paper, letting each square represent one tile (**Fig. 2**). If you use 12" tiles, you'll need one graph square for each tile.

PREPARING THE FLOOR

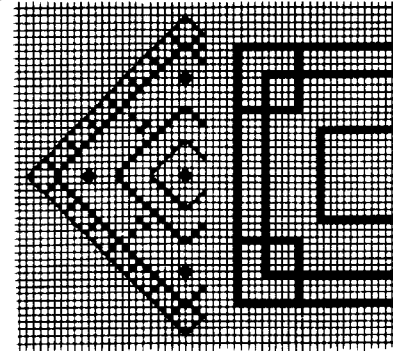
Prepare the room for vinyl tiles by removing all the furnishings, including the covers on the floor register and the shoe molding along the baseboard. The baseboard doesn't have to be removed if you can't do it without damaging walls or doorjamb. When you remove shoe moldings and baseboards, number the pieces so you can replace them in the same order.

Vinyl tiles can be installed over several types of old flooring, but in all cases the floor must be in good condition. You can lay vinyl tiles over old if it is completely smooth and still tightly adhered to the subfloor. Concrete must be dry, level, and clean. A wooden floor is suitable if the boards are not rotten or warped, and only if they are firmly nailed down. If these conditions can't be met, then it's best to install an underlayment of plywood or hardboard.

UNDERLAYMENT TECHNIQUES

Underlayment's job is to smooth the floor for the vinyl tile flooring. It also helps strengthen the floor and creates a more stable flooring surface. Floor underlayment can be plywood, hardboard, or waferboard.

Fig. 2



Layout patterns should be checked on graph paper.

Fig. 1

SQUARE FEET	NUMBER OF TILES NEEDED			SQUARE FEET	NUMBER OF TILES NEEDED		
	9" x 9"	12" x 12"	9" x 18"		9" x 9"	12" x 12"	9" x 18"
1	2	1	1	60	107	60	54
2	4	2	2	70	125	70	63
3	6	3	3	80	143	80	72
4	8	4	4	90	160	90	80
5	9	5	5	100	178	100	90
6	11	6	6	200	356	200	178
7	13	7	7	300	534	300	267
8	15	8	8	400	712	400	356
9	16	9	8	500	890	500	445
10	18	10	9	600	1,068	600	534
20	36	20	18	700	1,246	700	623
30	54	30	27	800	1,424	800	712
40	72	40	36	900	1,602	900	801
50	89	50	45	1,000	1,780	1,000	890

ALLOWANCE FOR WASTE

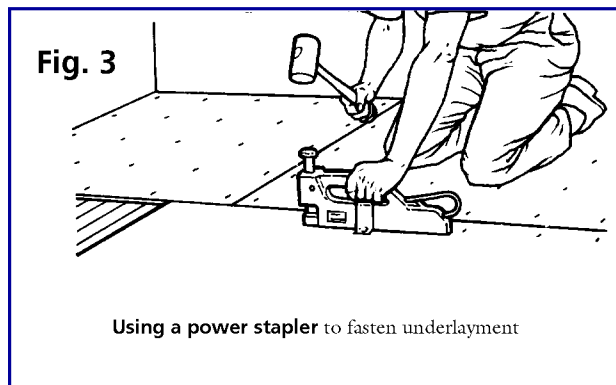
1-50 sq. ft.	14%
50-100 sq. ft.	10%
100-200 sq. ft.	8%
200-300 sq. ft.	7%
300-1,000 sq. ft.	5%
Over 1,000 sq. ft.	3%

Determining the number of tiles needed for the project.

There are four methods of fastening underlayment: coated or ring-shank nails, screws, staples, or adhesive. Since ring-shank nails are often difficult for the do-it-yourselfer to install, it is recommended that you use staples driven in by a power nailer, which you can rent (**Fig. 3**). Adhesive is often used in conjunction with staples for the best underlayment fastening system.

Underlayment on Wood Subfloors. Lay the first panel of underlayment across the direction of the boards in the subfloor (**Fig. 4**). If the end of the panel falls directly over a seam in the floor, cut it so that it falls in the middle of a board. Locate the floor beams in the subfloor by the nail heads and mark their lines on the underlayment. If the underlayment is hardboard, lay the rough surface up. With grade A-C plywood or lauan type 1 (exterior) plywood, lay the good face up. Drive the staples (or nails or screws) every 3" to 6" along the floor beams, 3/8" from the edges of the underlayment. Leave about 1/16" between sheets of underlayment for minor expansion and contraction.

After you have put down the underlayment, patch any cracks or indentations. Add wood putty to any space between panels that is greater than 1/4". If you have dimpled the surface badly, fill the pockets with putty, smoothing the patches so that they are flush with the good surface. Lastly, sand down the putty after it has dried. Any rough spots, debris, or dirt will gradually show through the floor tiles.



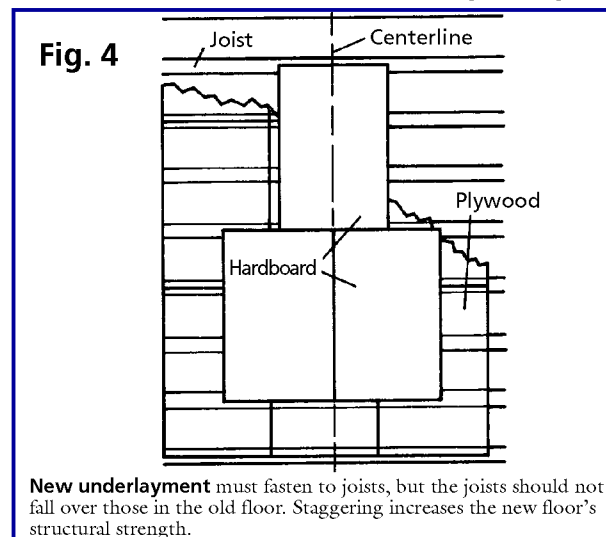
Concrete Floors. The floor must be sound, dry, level, and above all, smooth. To achieve the latter two requirements, it might be wise to use a self-leveling, self-finishing floor topping. This product is simply mixed as directed on the container to a pourable consistency, poured over the floor surface, and allowed to find its own level. Some self-levelers are suitable for wood surfaces.

Painted concrete floors can be a problem if the adhesive that must be used does not adhere to a glossy surface. Sometimes a "sand" solution or deglossing material such as trisodium phosphate (TSP) will remove enough of the shine, but you may have to install a new underlayment if too glossy.

LAYING PLAIN TILE

Assuming that the floor is prepared as just detailed and that you have picked a design (if you want one), the tile is ready to be installed. Follow these steps:

- 1 Measure and mark the center points of two opposite walls and stretch a chalkline between nails driven into them. Do the same on the other walls. Do not snap the lines yet. Use a carpenter's square to determine that the lines intersect at a true 90-degree angle.



If a pattern is to be laid on a diagonal, measure the shorter chalkline from the intersection to the wall. Then measure that distance on either side of the wall. Do the same on the opposite wall and drive nails into the four new points. Stretch chalklines between these nails so that they intersect in the middle.

- 2 Lay dry tiles in one quadrant. Begin at the intersection and extend them out at 90-degrees along the strings all the way to the two walls (**Fig. 5**).

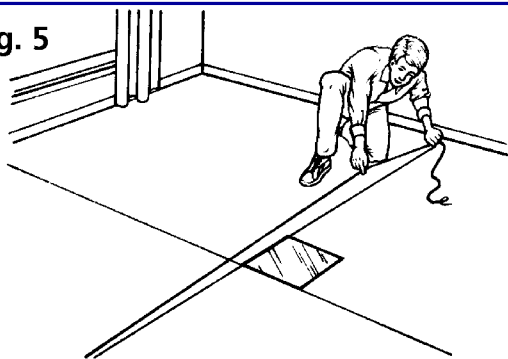
Duplicate the color combination on the graph paper. If you find that the last tiles are less than one half tile width from the wall, move the chalkline to make a wider border at the wall. If the last tile is more than one half tile width from the wall, leave the chalkline where you have it. In either case, now snap the string and mark the line on the floor.

If the tiles will be laid "straight" without a pattern (**Fig. 6**), work from the two chalklines at the centerpoint. The tile must be put down perfectly square at this point. It is the key tile. Triple check it for square. If it is not square, the error will be compounded as the tiles are laid. At the wall, the measurement could be off inches—sometimes even feet!

For a diagonal pattern, lay dry tiles along two perpendicular lines point to point and a row of tiles along the intersecting diagonal line. If the places where the border tiles butt the walls are not aesthetically pleasing to you, adjust the chalklines; then snap them.

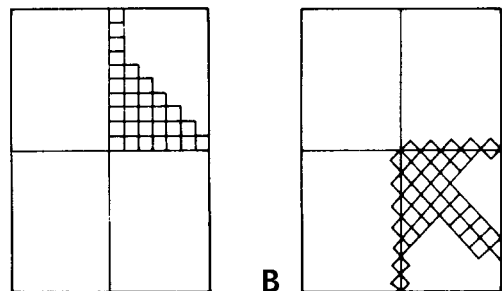
- 3 Spread adhesive along one chalkline with a notched trowel held at a 45-degree angle. Start at the intersection and work toward a wall. Trowel adhesive about half the thickness of a tile (**Fig. 7**). Set a row of tiles along the line, letting each tile butt the preceding one. Drop the tiles into place; do not slide them. Set a row perpendicular to the first, and then fill in the tiles between them.

Fig. 5



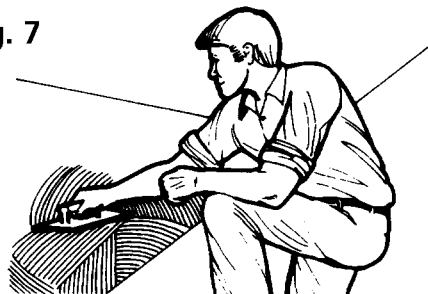
Snapping a chalkline to start tile layout

Fig. 6



(A) Straight pattern and (B) diagonal pattern

Fig. 7



Spreading on the adhesive

For a diagonal pattern, begin at the intersection of diagonal lines and lay a row along one diagonal. Use this as a base line on which to build the pattern. After finishing a section, roll it with a rented roller or a rolling pin used in cooking. As you set and roll the tile into position, remove any tile adhesive that has been squeezed up through the joints. It's easier to remove while fresh.

- 4 To trim a border, align a dry tile over the last set tile from the wall. Then place a third tile over these two and push it to 1/8" from the wall (Fig. 8).

Using this top tile as a guide, score a line with a utility knife on the tile immediately under it. Snap the tile on the scored line, and fit into the border the piece that was not covered by the top tile.

For a diagonal pattern, score the border tiles from corner to corner with a straightedge and a knife. Snap them to make triangular halves to complete the sawtooth border pattern.

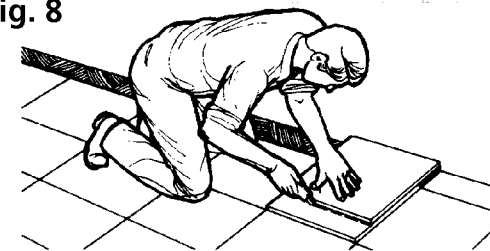
- 5 To go around a corner, align a tile over the last tile set on the left side of the corner (Fig. 9). Place a third tile over these two and push it to 1/8" from the wall as you did in trimming a border. Mark the edge with a pencil. Then, without turning the marked tile, align it on the last set tile to the right of the corner. Mark it in a similar fashion. Cut the marked tile with a knife so as to remove the corner section. Fit the remaining part around the corner.

- 6 To cut an irregular shape (Fig. 10), use the procedure for borders and corners, but move the top tile along the irregular shape to locate its surfaces on the tile to be cut. At curved surfaces, bend a piece of solder wire and transfer the curve to the tile being marked. Vinyl tiles are also available with adhesive backs. While these tiles are quick to install, it

is important to prepare the floor surface carefully, just as for plain tiles.

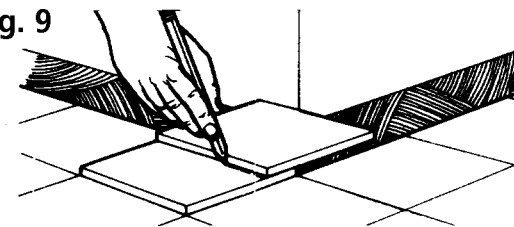
Regardless of the type of tile used, do not reinstall any trim until the adhesive has set usually about 36 hours. Go back over the floor and clean any adhesive at the tile joints.

Fig. 8



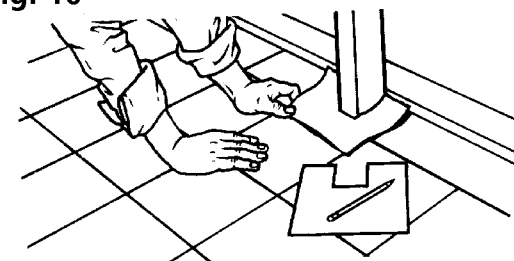
Trimming a border

Fig. 9



Cutting around a corner

Fig. 10



To fit around obstacles or at the edge of the room, leave the paper on the tile and cut it with the paper side up. To fit around obstructions, make the pattern on regular paper, trace it onto the tile, and cut.