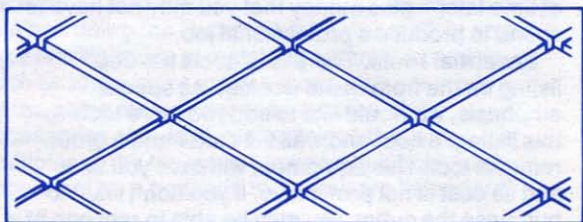


# CERAMIC WALL TILE



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## TOOL and MATERIAL CHECKLIST

Tile Spacers/Tile Grout  
Silicone Grout Sealer  
Ceramic Tile Cleaner  
Rubber Float/Grout Spreader  
Tub/Tile Caulking  
Tile Nippers/Sponge  
Wiping Cloths/Tile Cutter

Putty Knife/Scraper  
Ceramic Field Tile  
Ceramic Trim Tile  
Wall Tile Adhesive  
Adhesive Spreader  
Tape Measure/Level  
Chalk & Chalkline

Grout Removal Tool

Read This How-To Booklet for Specific Tools  
and Materials Not Included in Basics Above.

1

As a wall covering in bathrooms, kitchens, laundry areas, shower areas, some floor applications, and rooms where open water can be a problem, ceramic wall and floor tile is an excellent choice. It offers durability and beauty and adds value to your home at a very reasonable cost—especially if you install it yourself. This How-To Booklet shows the installation basics for ceramic wall tile, and the prime example here is a bathroom, although the installation can be in any room you wish.

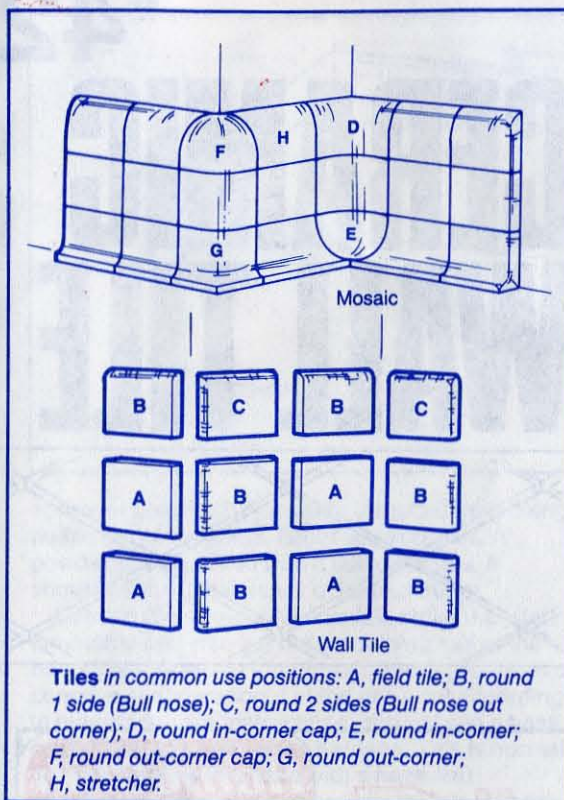
The procedures for installing ceramic tile will be almost identical for a bathroom as for a kitchen, laundry, or other area. But before you start a ceramic tile project, completely read through this Booklet. Time spent doing so can save you plenty of time later—plus money that you may not have to spend to produce a professional job.

**Essential tools.** There is a “tools needed” listing on the front of the Booklet. As special emphasis, we would like to add two more tools to this listing: a floor and wall tile cutter and a grout removal tool. This equipment will save you time and its cost is not prohibitive. If you don't want to purchase the cutter, you may be able to rent one at the store where you buy tile supplies.

**Estimating Tile Needs.** For a ceramic wall tile project, you will need the field tile, perhaps border tile, and trim tiles. See the illustration for selection. You may also need towel rod supports, soap dishes, tissue dispensers, and other ceramic tile accessories.

Figure the area of the wall that you will tile. Measure the length and width of the area (such as around a bathtub, shower, or above a kitchen countertop) and multiply these figures. If there is an adjacent area above, below, or beside the prime area, consider it separate and measure the area the same way. Then add all the area figures together for a total. **Example:** the height of the area is 4 feet and the width is 5 feet (as most standard bathroom walls behind a bathtub that you would tile). Multiply 4x5 feet, which is an area of 20 square feet. Now measure the height and width of the end walls at the top of the tub. Usually, as an **example**, the walls measure 3 x 4 feet. Multiply 3x4, which equals 12 square feet times 2 (two walls) for a total of 24 square feet. Add the bottom

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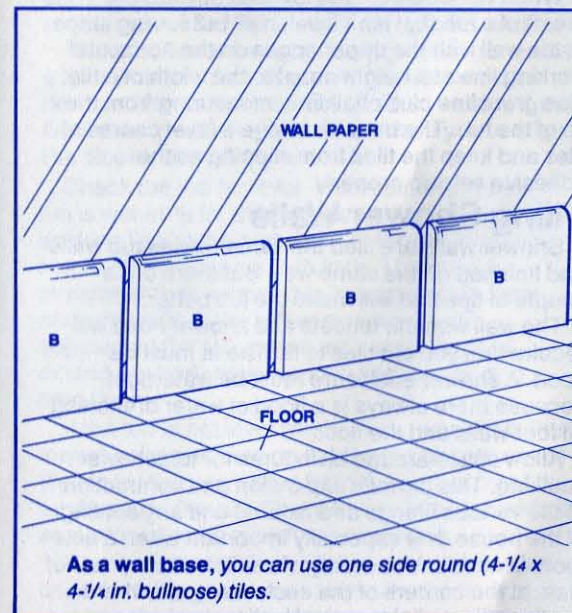
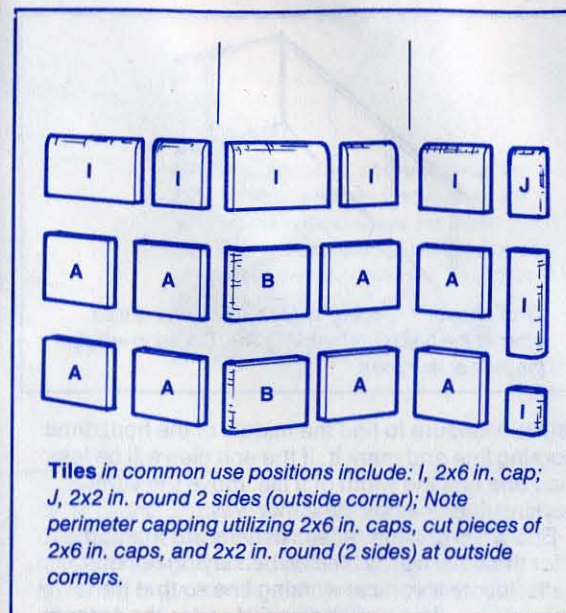


lines together (20 and 24 sq. ft.: 44 square feet). You would need 44 square feet of field tile for this **example** project. You also may need cap tiles, accent tiles, cove base, and so on. Figure these extra tiles on an individual basis and buy them accordingly.

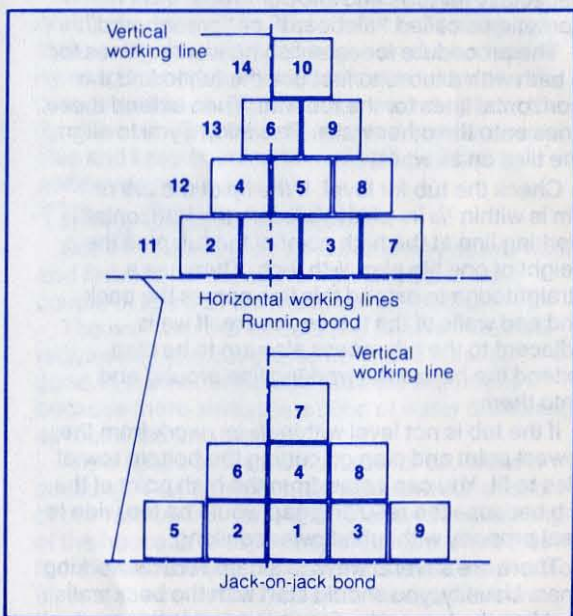
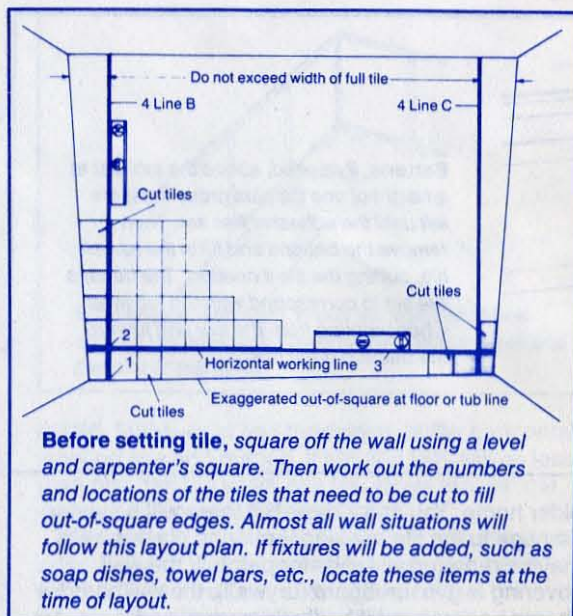
In the **example** above, the number of field tile came out even. However, it is suggested that you buy 10% more tiles than your bottom line indicates. You will break some of these tiles in setting them (even the pros figure 10% breakage), and you may need replacement tiles sometime in the future.

**Preparing Wall Surfaces.** The surfaces to which ceramic wall (or floor) tile will be installed must be sound and free of dirt and grease. The surfaces should not be covered by wallpaper, contact paper,

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cork, floor tile, old ceramic tile, or any other types of wall coverings, except paint. The paint should be firmly bonded to the wall surface (not peeling or flaking off). Holes and wide cracks in drywall and plaster must be patched with spackling or joint compound. Or you can cover them with a self-stick fabric-like product made for this purpose. It goes on like an adhesive bandage. The spackling or joint compound can be left fairly "rough"; you don't have to sand it glassy smooth although it should be even with the surrounding good surfaces.

If you're using ceramic wall tile in a new bathroom situation, have all the plumbing roughed in and the toilet and vanity cabinets located. Remove all trim moldings that would be involved. Pull the nails out the back of the molding with pliers to avoid splitting the wood. If you are tiling the walls around a bathtub, remove faucet handles and any grab bars, tissue holders and other fixtures. Line the tub or shower floor with pieces of thick cardboard to protect the finish and be sure drains are covered so debris doesn't drop into them. Also remove cover plates from electrical switches and receptacles and any other obstructions on the walls that you will tile.

## Lay Out The Project

Regardless of the size of your project, lay it out first with strong vertical and horizontal lines so the tiles may be aligned precisely. See the illustration, Panels 3 and 4.

Horizontal lines should be drawn  $\frac{1}{4}$ -inch from the rim of the bathtub, shower floor, or base trim pieces. The gap allows for expansion and contraction of building materials; it will be filled later with a tub/shower caulking.

For rooms without tubs/showers, find the lowest point with a level along the floor. At the lowest point, set a tile against the floor and mark on the wall along the top edge of the tile. Where a cove tile will be used, set a cove tile on the floor with a field tile above it, allowing for the grout line between them.

Mark a level line across the wall in line with the top of the field tile. Use a level and straightedge to extend the line onto the adjacent walls. The tiles will be cut or nipped to fit in places where the floor is not at the lowest point.

**Vertical Layout Lines.** These are needed and

6

they should be at the midpoints of the walls, crossing the horizontal working lines. You can draw them with a level, or you can snap a chalkline at the vertical points. Use a row of tiles to measure to the desired corner or other ending point for the tile. If the end tiles will be less than a half-tile width, move the vertical working line one way or the other by half the width of a tile. This will eliminate ending up with a narrow tile which looks bad and has to be carefully cut to fit properly. Extend the vertical working line with a level or chalkline and straightedge to the height that the tiles will go. If the tiles will not go all the way to the ceiling or other stopping point, mark this ending point with a level and straightedge. Allow for a half or full bullnose trim or cap tile to finish the top of the field-tiled section.

When doing the layout, be sure you mark in any accessories made of matching ceramic materials such as towel racks. If the accessories are made by the same manufacturer as the tiles, the accessories should fit into openings that are multiples of the tile sizes. However, mixing brands should not be a problem; most tiles are "standard" in size.

## Setting The Wall Tile

Ceramic tile can be set in a running bond or jack-on-jack pattern, as the illustration shows. We suggest jack-on-jack because it is easier to set and it doesn't waste as much material as running bond in cutting/fitting.

Most ceramic wall tile has tiny lug spacers along the four edges. These little lugs automatically space the tile for the grout lines. If the tile you use does not have this feature, you should use plastic spacers, which may be purchased in a package. If you are installing floor tile, you definitely need the spacers marked for floor tile on the package. Be sure to follow the manufacturer's recommendations on spacer use. In some installations, the spacers should be removed after the tile is set and before grouting.

To start the jack-on-jack bond, set the first tile on the bottom horizontal working line and the vertical working line (see drawing). It is **very important** that this first key tile is set true and square on the wall. All tiles will work off this key tile. Just a fraction of an inch off at this point will compound

the error as the rest of the tiles are set.

Spread the tile mastic with a v-notched adhesive trowel. Depth of spreader notches will be recommended by the adhesive manufacturer. Usually for standard wall tile the notches are  $\frac{3}{16}$ -inches deep. Work in small areas at a time, so you don't lose sight of the guidelines you marked on the wall. Don't slide them because sliding causes the mastic to come up into the space needed for grout. As you work, add spacers, if the tiles are not pre-spaced as mentioned above.

Every 6 to 8 tiles, tap the tiles in the mastic with a hammer and square of plywood padded with a piece of carpeting. At the ends of the rows, cut the tiles to fit.

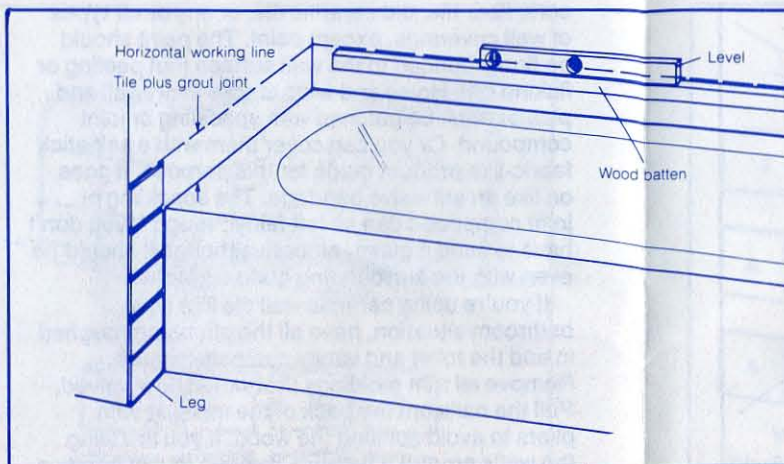
Corners between adjacent walls can be tiled with plain tiles for inside corners or with cove tile. The gap between plain tiles may be filled later with a tile/tub caulking. Outside corners need bullnose tile on one wall to cover the unfinished edge of the field tile. Windows will create several corners that are handled with bullnose tiles or windowsill tiles (see drawings). Or you can grout the edges of these tiles and strike the grout at a 45 degree angle to form a watertight seal.

Cut and fit tiles for the bottom row of each wall and then apply the mastic and push the tiles into place. Check the overall appearance of the wall, and if any tiles are not properly aligned, slowly and firmly twist and push them into alignment. The tile mastic should remain tacky enough to permit slight movement of the tiles. Complete curing of the mastic will take about 24 hours (check mastic container).

Clean off any adhesive from the faces of the tile with tile adhesive cleaner. Also remove any mastic from the joints where it could interfere with the grout. Any accessories that are to be applied with mastic should be installed at this point. Use construction type adhesive, such as liquid nails, to hold the heavier accessories i.e. towel bar, paper holder to set them into or onto the wall surface.

## Grouting The Tile Joints

Grout is applied with a rubber float or grout spreader. First spread the grout over the tiles, using the float. Then, with the float or grout spreader, work the grout into the joints, moving the tool **diagonally** across the tiles. Moving the float or



spreader diagonally, prevents the grout from being pulled out of the joints. Grout which comes in powder form is mixed with a latex additive. It should be the consistency of peanut butter.

Once in place and the joints full, strike the joints (smooth them) with a grout smoothing tool or the handle end of an old toothbrush, which produces a concave configuration. Let the grout set according to manufacturer's instructions. You will see a haze on the tiles when the grout hardens. This is normal. You can remove this haze with a haze and adhesive cleaner made especially for this purpose, e.g., H.B. Fuller's "Banish". Fill the cracks you left for expansion and contraction of building materials with a quality tub/shower caulking. It comes in a tube. Pull the tube toward you—as you would a caulking gun. Then smooth the caulking with a wetted index finger.

Let the project set several days—a week or so if you can wait—and then go over the tiles once again with the cleaner (Banish) to remove the haze, any excess grout, and adhesive. Wait 20-30 days for grout to cure. Then, apply a tile grout sealer to the grout, dipping an old toothbrush into the sealer and running the bristles along the grout lines.

## Tiling Around A Bathtub

The tiling technique is about the same as for walls and you can follow this procedure as detailed above. Where you may run into trouble is in an

**Battens**, if needed, above the tub (set at a height of one tile plus grout lines) are left until the adhesive has set. Then remove the battens and fill in the row of tile, cutting the tile if needed. The battens are set to correspond with the tub level, when working from the low end toward the bathtub drain opening.

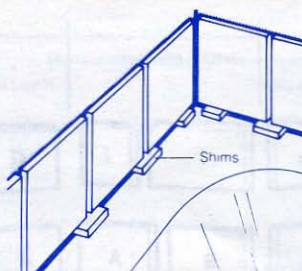
older home. You can almost bet there will be water damage to the tile backing. Lath and plaster walls may be repaired with plaster patch. If the wall covering is gypsumboard (drywall), the wallboard should be removed if badly damaged, and replaced with a water-resistant drywall made especially for tubs and shower areas. It is sometimes called "tileboard" or "greenboard".

The procedure for establishing working lines for a bath with a tub is to first use the tub to find the horizontal lines for the tub wall. Then extend these lines onto the other walls. This allows you to align the tiles on all walls.

Check the tub for level. If the lip of the tub or rim is within  $\frac{1}{8}$  in. of level, locate the horizontal working line at the high point of the tub plus the height of one tile plus  $\frac{1}{8}$ th inch. Then use a straightedge to extend this line across the back and end walls of the tub enclosure. If walls adjacent to the tub recess also are to be tiled, extend the horizontal working line around and onto them.

If the tub is not level within  $\frac{1}{8}$  in., work from the lowest point and plan on cutting the bottom row of tiles to fit. You can't start from the high point of the tub because the resulting gap would be too wide to seal properly with tub/shower caulking.

There are several ways to locate vertical working lines. Usually, you should start with the back wall that has the largest surface area and is the most



**With shims, if needed, brace the first row of tiles against the horizontal working line. Caulking will seal the joint at this point.**

visible. Measure to find the middle of the horizontal working line and mark it. If the end tiles will be less than one half the width of a tile, move the vertical working line one half tile either way.

End walls of a tub recess usually are marked off after the back wall is tiled. When laying out end walls, locate a vertical working line so that the narrow tiles, if any, will be positioned in the corners so they won't show.

When working from the low end (toward the drain) of a tub that isn't level, nail 1x2 furring strips to the wall with the upper edges on the horizontal working line at a height equal to the width of a tile plus grout line plus chalkline, measuring from the lip of the tub. The battens assure a level course of tiles and keep the tiles from slipping as the adhesive sets up properly.

## **Tiling Shower Walls**

Shower walls are tiled the same way as tub walls and finished off the same way. But there are a couple of tips that will make the job better:

The wall with the faucets and shower head will require that you cut tiles to fit. The fit must be good. A shower enclosure must be watertight because there always is a flood of water drenching all four walls and the floor.

Allow space around all fixtures for tub/shower caulking. This permits expansion and contraction of the various fittings and fixtures and any settling of the house. It is especially important when a new room is added. Use plenty of caulk at the top row of tiles, at the corners of the enclosure, and where the floor tiles adjoin vertical walls.



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