



# Build Yourself a Patio!

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Using several easy techniques and readily available pavers, you can create an attractive outdoor living area.

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Step out onto a nicely designed patio and you'll agree that it makes both an attractive and practical addition to a backyard. An extremely diverse range of patio stones, some natural but most factory-made, let you stretch your imagination to come up with a unique design that tints your home. The result is a comfortable place to play, barbecue, garden or simply relax in the sun (or shade).

Building a patio as large as ours (12 ft. x 16 ft.) is a big project and requires some technical experience in leveling and making square corners. There's a good deal of muscle work too, lots of digging and shoveling. But when it comes to setting stones into the patio mosaic, even the kids can help out. Allow several weekends to complete a patio this large, one for laying it out and excavating and the other for setting the stones. The materials for this patio cost \$700.

You'll find a patio easy to design. Simply lay out its approximate dimensions with a clothesline. Adjust the shape, add paths if you want, and sift through details like plantings, borders and slopes in the yard. Take a sketch of your plan (with rough dimensions) to a landscaping specialty store or home center. You may want to call and ask a professional landscaper where to find a good patio product selection.

There are two material choices you need to make: the patio stones and the border. Patio stones come in many shapes, colors and sizes. For easier pricing, compare their square-foot cost. Depending upon your region, this should range from \$1.50 to \$2.50. Borders may be made from treated lumber, plastic, stone or metal and, of course, vary in price also. Be sure that the border you pick will retain your particular patio stone.

## GETTING STARTED

For our first step, we laid out the rectangle which most closely approximates the patio's finished shape. Notice how the actual border (the dotted line) doesn't follow the rectangle exactly; we added the variations later.

To guide accurate stone laying, it's important to establish parallel sides and 90-degree corners. You can make an accurate 90 degree angle using the "3 -4-5 triangle" method. Begin by

measuring 3 ft. along a straight base line, in this case the house. Then with two measuring tapes and a helper to hold the ends, measure 4 ft. from one end of the 3-ft. line and 5 ft. from the other. Drive a stake where the 4- and 5-ft. marks meet. The angle opposite the 5-ft. side will be 90 degrees.

With a string line, extend the 4-ft. side of the triangle to establish the patio width. (For large patios, you can be more accurate by doubling the triangle sides to 6-8-10.) Drive stakes at the four corners.

Second, establish an adequate patio slope so rainwater will drain. Find a long, very straight 2x4 on which to set your level, and establish a level plane between the corner stakes. Intermediate stakes placed every 6 to 8 ft. simplify this process, and later will be used as guides when making the patio perfectly flat. Mark the slope on the stakes on the low side of the patio, allowing about 1 in. drop for every 8 ft. away from the house. Mark the proper level on the intermediate stakes as well.

Third, decide your patio height. We wanted ours to be 8 in. below the first tread of a stairway. The patio height also should be even with, or slightly above, the surrounding ground so that water drains off into the grass.

Finally, excavate the patio shape deeply enough for the packed aggregate base, sand and patio stones. Use the reference lines on the stakes to properly slope the bed.

## BUILDING THE BASE

As you might expect, the secret of a long-lasting patio lies in a good base for the stones to rest on. How thick a base depends upon the soil; low-lying, wet soils need a thicker base than well-drained soil. Three inches of well-compacted, crushed stone should be enough. However, the type of base material available varies from region to region. Local patio stone dealers can recommend a suitable base and help you figure how much you'll need. They'll also help gather and perhaps deliver your other supplies - washed concrete sand, edge restraints and patio stones. Seriously consider home delivery. Remember, this stuff is *heavy*.

The mechanical vibrator plate (\$60/day rental) in saves a lot of hand labor when compacting the aggregate base. Later, you'll want to pack down the pavers too, so it will be well worth the rental fee. It's a heavy machine, for adults only, but is quite easy to use. For very small patios, a hand tamper, will be enough. (You can make one by nailing two 12-in. squares of 3/4-in. plywood to the end of a 4x4.)

It's worth being a little fussy about flattening the base and making sure it slopes just right. Your patio surface will conform exactly to the surface of the base, showing every dip and rise

## LAYING THE PAVERS

Next, nail down your edge restraints, being careful to accurately follow your string lines. Add in the edge variations for plants, curves, etc. Some edges can be adjusted later, especially in narrow areas, to avoid extra stone cutting.

Add the sand and screed it smooth in about 6-ft.-sq. sections, laying the pavers before smoothing the next section. We used interlocking concrete pavers, also available in several other shapes and colors. Notice the specially cast edge pieces, which help minimize cutting.

Should you find the patio stones not aligning, stop and find the problem. Check the starting corner to make sure it's exactly 90 degrees, and adjust the edge restraints if necessary. Successively tapping each new stone in the same direction with your hammer handle may correct the problem as well.

When cutting the final edge pieces, cracking the pavers with a hammer and a wide mason's chisel will work for simple crosscuts. But for angled cuts and finer fitting of curves, you'll need to rent a tub saw with a diamond blade (\$35 - \$40/day rental). It's quick and accurate. Be sure to wear safety goggles when cutting or hammering stone.

Finally, set the pavers firmly into the sand with the vibrator plate, using a mallet and wood block

to set hard-tin-each areas. Sweep sand into the surface cracks and vibrate them a final time, sweeping more in as necessary. The sand tends to wash down after a few rainstorms, so keep some extra handy to refill the gaps.

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