

Smart Words for Smart Homeowners

THE EXPERIENCE OF EXPERTS AND THEIR ADVICE ON RELEVANT HOMEOWNER TOPICS

SMART Steps To Installing Pavers

Overview

Here are steps for DIY installation of concrete paver walkways, patios, driveways and pool decks.

Plan The Job

When installing a concrete-pavers 85 percent of the work involves preparation of the subsurface. You will do most of the work on the paver project – planning, excavating and preparing the base – before you lay your first paver.

Start with a tape measure and a good five foot level. Measure the space you want to cover. Draw a simple but accurate diagram on paper. Add to the drawing any existing structures such as buildings, fences, large rocks and paved areas. Be sure to account for drainage in you plan.

Visit the local stone dealer. Investigate the style, shape and colors that best fit the job. Now determine the proper amount of supplies you need. Have them delivered to the site. Cover them with a waterproof tarp.



Contact your local utility companies before you begin any excavation.

Calculating The Area & Base

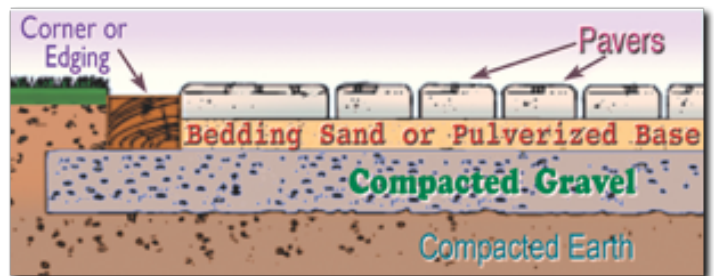
Stake out an area approximately 12" larger than the area to be paved. Mark the outline of the area by hammering stakes or spikes into the ground.

You'll need to dig out the sod and dirt to a proper depth. Your depth calculation should be: the thickness of the pavers + 4" to 8" for a gravel or crushed stone base + 2" for the sand bed. Plan to slope the paving away from the buildings in the direction of normal drainage.



Preparing

Make sure that you have 90° corners at your starting point. You can do this by using the 3-4-5 triangle method. From the corner stake measure 3' across the base and 4' up the side. The diagonal line joining these two points should be 5'. If it is not, adjust the 4' side until the diagonal is exactly 5'. That tells you that you have achieved 90°.



Excavating Insights

Where there is only pedestrian traffic, a base of 4" to 6" of processed gravel is endorsed. Where there will be vehicular traffic or around pools a deeper base of 6" to 8" of processed gravel is recommended. Rake up all stones and twigs. Slide a 2" x 4" along the surface to create a roughly level plain for the paver base. The climate and type of soil under the base determines the thickness of this layer. Cold regions with fine clay or silt require a thicker base than well-drained soil in a warm climate. In this case more (base) is better.

Installing The Base

You will compact each layer. Compact the surface of the bare excavated soil with a plate compactor (you can rent these). In small areas a hand tamper may be sufficient. Fill the area with 3/4" crushed stone or aggregate approximately 4" thick. Compact this again with the plate compactor. Wetting the gravel lightly with water will help with the compacting. When you can walk on the gravel without causing an indentation you can add the next layer of gravel and

compact it.

Continue to add gravel in layers until the base is approximately 3" to 3-1/2" from the desired level of the finished grade.



Note: Be sure to slope the surface for water drainage. The slope should be \approx 3/16" slope per foot.

Drainage Slopes

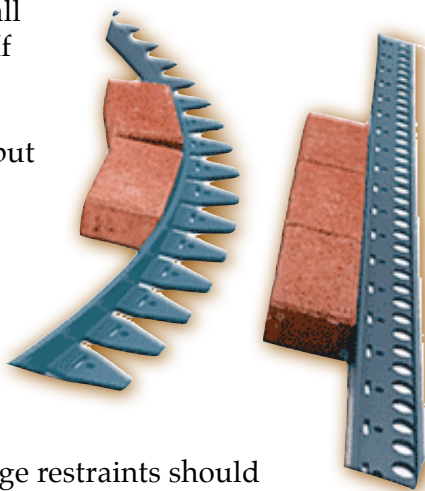
Install a level line across the area using a line level. On the stake that is at the end you want to slope towards, move the line down 3/16" for every foot of pavement. For example, if your pavement will be 8' long, move the string down 1". Measure the distance from the line to the base. The distance should be equal all along the line. For example, if your pavement will be 8' long, move the string down 1". Measure the distance from the line to the base. The distance should be equal all along the line. If any areas need to be built up, do so with the base material.



Note: Each of these layers is responsible in reducing & preventing frost heave and shifting. Don't take shortcuts.

Lay the base far enough past the true outline of the pavement so that it extends past the edge restraints at least the same dimension as the thickness of the base (4" or more).

Compact the base in 3" layers using a mechanical plate compactor. For best results, work the compactor in a circular motion and go over all areas at least twice. If the base is dusty or bone-dry, moisten it with a garden hose (but don't saturate it) before compaction.



Installing Edge Restraints

Edge restraints will hold your concrete pavers and the base in place. Edge restraints should

always be used to prevent the pavers from shifting, rolling or spreading. You can use PVC, aluminum, concrete or pressure-treated wood. Precast concrete curbs are recommended because they are easy to install, are very durable and will accent your paving stone. Use the 3-4-5 triangle method to make sure that all corners are exactly 90°. Secure plastic or metal edge restraints in place with 12" spikes. For projects with several curves, you can cut the edging to follow bends in the shape of your project.



Note: Don't use limestone screenings or stone dust for the base layers.

Screeding The Bedding Sand

Before you can lay the pavers, a bed of flat sand must be prepared. Use 1" outside diameter (OD) galvanized electrical conduit (pipe), strips of wood or other suitable rigid material, such as screed rails. Place them 6" to 8" apart down the area to be paved. Measure the height distance from the string lines and the screed rails at several points. If necessary, adjust the height of the screed rails by putting sand under them or trimming the base underneath if too high. Hand pack sand around the screed rails to hold them in place. Spread 1" of sand between the rails until it is slightly higher than the rails. Use a straight 2" x 4" board to drag across the top of the screed rails to smooth and level the sand surface. Fill in the low spots with more sand and repeat the process until the area is flat and has no voids.

Remove the rails and fill in the indentations with sand, and trowel smooth as you are laying the pavers. Do not step on, compact or wet the sand after you have finished screeding.



Smart Option: Lay Down The Filter Fabric

An easy way to prevent weed growth and erosion from drainage through the pavers? Simply cover the sand with a single layer of filter fabric. Water will drain through this fabric but weed seeds will not germinate through it.

Layering Pavers

Starting in a 90o corner, lay the pavers in the pattern you have chosen. Work outwards keeping all joint lines straight. Use string lines pulled along joint lines and parallel to the edge restraints or, chalk lines snapped on the surface of the sand bed to keep the joint lines straight. Leave a 1/8" space between pavers. Periodically check the alignment of the rows by stringing a line along the front edge of the leading row. Each paver should touch the string. If adjustment is needed use a screwdriver and hammer to move it into place. Work off the pavers you have already installed but stay away from the edge so you do not disturb the sand bed. Install remaining edge restraints. Do not try to turn the pavers with curves in your laying pattern. Cut pavers to fit along the edge restraints.



Wear body protection; safety glasses, gloves, dust mask, etc. Don't take shortcuts.

Check The Surface As You Go

Use a level or straightedge to check the surface level as you complete each section and again when the entire area is laid. Tap raised blocks down into the sand using a rubber mallet or better yet a "dead blow" hammer.

Cutting Pavers

Always wear safety glasses. Measure and mark the pavers to be cut with a marking crayon. A diamond blade wet saw, paver splitter or a hammer and chisel can be used to cut most pavers. Your best choice is a big diamond blade wet saw. If possible, keep edge stones to one half paver.

Compacting And Setting

Sweep the surface to remove any debris. Spread masonry sand over the surface, sweeping it into the joints leaving surplus sand on the pavers. Tamp the pavers down using the plate compactor. The excess sand on the pavers will cushion the surface and the vibration will assist in filling the joints. Spread more masonry sand



if required. Make two or three passes at 90 to each other and re-sweep the surface.

Smart Option: Polymer Modified Sand

There are new products appearing every month that can enhance the longevity of this kind of project. Polymer modified paver-finishing sand is one of the better products to emerge. It is specifically designed to make the task easier and make it look better longer.

This last step joint filler is available in three colors Gray (Graystone), Tan (Sandstone), or Red/Brown (Brownstone). One of the brands, JOINT-LOCK™ Sand, sets up hard to resist weed growth, insect mining and erosion. It will resist scouring caused by sweeping, water rinsing and most traffic. JOINT-LOCK™ Sand is a blended mixture of mason sand with a polymeric additive. When activated by water, it forms a firm barrier. JOINT-LOCK™ Sand and Quikrete PowerLoc Jointing Sand will become pliable when it is subject to moisture such as rain or when rinsing with a hose, and will re-harden as it dries. (www.packagepavement.com/)



Finishing

Sand is the final layer for interlocking concrete-paver system. Pour the Polymer modified sand, or masons sand, over the finished pavers. Sweep the dry sand over the surface to fill the joints. Compact it. Add more sand to fill the crevices and repeat the process until the sand fills the crevices.

Remove ALL the excess sand from the surface. Moisten the layer with a light spray from your hose. Don't float the sand away – just wet it so it compacts further.



