

Note to Homeowners: Prior to undertaking an installation yourself, it is recommended that you read these guidelines thoroughly and attend a DIY seminar at your local EP Henry Authorized Hardscaping Distributor®. A schedule of seminars and more detailed installation information can be found at ephenry.com.

Interlocking concrete pavers are installed successfully by professionals and do-it-yourselfers alike. These instructions are designed to be a basic guide. Detailed instructions can be obtained from EP Henry or your EP Henry Authorized Hardscaping Distributor.

MATERIALS NEEDED

Stone Base: Should be 3/4" modified stone, also known as 2A, or 3/4" quarry blend. A 1" depth of compacted base weighs approximately 1,000 lbs. per 100 sf. Always add 5 to 10 percent for edges and miscellaneous areas.

Bedding Sand: Coarse concrete sand is recommended. At a depth of 1", this weighs approximately 1000 lbs. per 100 sq. ft. Figure an extra 5 percent for jointing sand.

Pavers: Are typically sold by the square foot. Calculate the square footage needed for your project and add 5 to 10 percent for overage, cuts, waste, etc.

Edge Restraint: All exposed edges must be restrained.

Separation Fabric/Geotextiles: Recommended for all installations and critical where clay type soils are present. This will help maintain the integrity of the base.

TOOLS:

- Wooden stakes
- Wide blade mason's chisel
- 6'-8' 2"x4" or 2"x6"
- Mason's string (twine)
- Stiff bristle street broom
- Small pry bar
- 3-5 pound hammer
- Hard tooth garden rake
- 4' level
- 25' tape measure
- Flat shovel
- Wheelbarrow
- Diamond blade wet saw
- Chalkline
- 3-5 HP vibrating plate compactor
- Wire cutters (for cutting bands on pavers)
- 1" diameter sand screed guides (galvanized steel)

LAYOUT & PREPARATION

Measure the area you intend to pave. Determine square footage (length x width = square feet) adding 5 to 10 percent for cuts and extra pavers that might be needed later. Measure the linear feet of all edges not up against a permanent structure, such as a house, etc., to determine the amount of edge restraint needed. Draw a plan on a piece of paper showing all important dimensions. Mark the outline of your project with stakes every 4'-6' and at each corner. These stakes should be 8" outside of the planned edge of the finished pavement.

EXCAVATION

Note: Before digging, always call your local utility companies to locate any underground lines.

In general terms, a minimum of 6" of compacted aggregate base is recommended for patios and walkways, and 10" for residential driveways where freeze-thaw conditions exist. Add 3" for the depth of the bedding sand and the thickness of a standard 2 3/8" paver to determine the total depth to excavate. Excavation should be 6" wider than the finished pavement's dimensions on sides where edge restraint is to be used.

Slope and grade are important to ensure proper runoff. It is best to plan at least a 1/4" per foot drop, but try not to exceed 3/8" per foot.

BASE PREPARATION

As with any building project, the finished pavement will only be as good as the construction of the base. For this reason, this is the most important part of the installation process.

First, run your plate compactor over the excavated area, making sure that soil does not get stuck to the bottom of the plate tamper. Each pass should overlap the previous one by about 4". Compaction should be performed in one direction (North-South), then a second time at a right angle (East-West) to the first compaction. It is recommended that a separation fabric, such as Mirafi® 500x, be laid down over the compacted subgrade and returned up the sides of the excavation.

Now spread your stone base material out evenly in a 2" layer. If the material is dry and dusty, use a garden hose to evenly moisten it down. This helps make the gravel easier to rake and faster to compact. Starting around the outer perimeter, use the plate compactor to pack together the base, again overlapping each pass about 4", and working towards the center. You should make at least two complete passes for each layer. Repeat this process for each subsequent layer of base material until the final thickness is achieved.

When finished with the base, it should be very smooth and flat, and reflect the final grade of your pavers. If the surface deviation is greater than 3/8", then it should be filled in with base material. A deviation that is less than that should be filled in with the screed material, which is always coarse washed concrete sand for paver installations.

SAND SETTING BED

Note: It is important to keep your sand dry. Always keep your sand covered in case of rain. It is suggested that you only screed sand for areas where you will be laying pavers that same day.

Do not attempt to level any area or surface irregularities with the sand. This will result in an uneven surface and unwanted settling. Lay the screed guides (1" outside diameter electrical conduit, strips of wood or other suitable rigid material) on top of the compacted base material 4'-6' apart and parallel.

Evenly distribute a quantity of bedding sand between the guides and drag the 6'-8' 2"x4" or 2"x6" over the guides to create a smooth, even layer of sand, striking off any excess. When the pavers are set on the sand and compacted, the 1" of sand will compress to 3/8" to 1/2" thickness. Do not walk on or work from your sand. Fill voids left by the screed guides with sand and trowel them smooth as you are laying the pavers.

CONCRETE SAND VS. SCREENINGS FOR THE SETTING BED

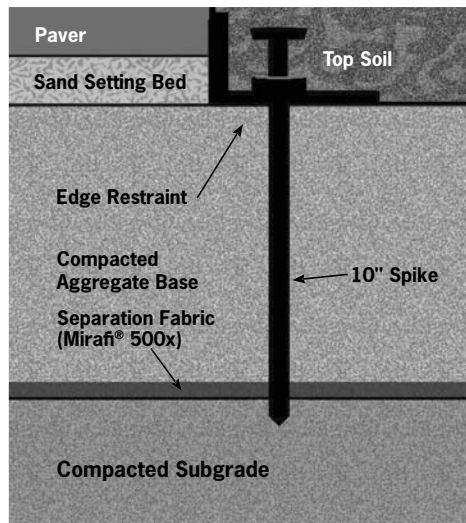
According to the Interlocking Concrete Pavement Institute (ICPI), coarse concrete sand, i.e., sand used to make ready-mixed concrete, is recommended for the setting bed. Do not use stone dust or screenings for the setting bed. These materials do not drain water and become soft over time. Pavers will not seat properly in them when compacted. This will prevent interlock.

For the best results in all applications, ICPI recommends mason's sand to fill the joints. This sand is finer than concrete sand. It is the type of sand used to make mortar for masonry wall construction. Polymeric Sands for the joints are also acceptable as long as they are comparable to mason's sand in particle size.

Note: All projects must start at a perfect 90° angle. Use the 3-4-5 triangle method to establish this. For an even mix of pavers, draw from several cubes at a time when installing them.

LAYING THE PAVERS

Starting from a permanent edge such as a house, driveway, or even a piece of rigid PVC edge restraint, lay your first paver starting from either side. As you start laying pavers, work from right to left, then left to right, and so on, one row of pavers at a time. Set the pavers lightly onto the sand; never press or hammer them in. Every 4' or so, run a string across the front of the laying edge to maintain straight lines. If you are doing the project over a couple of days, cover the entire area with plastic overnight if rain is expected.



Typical Installation Cross Section

CUTTING THE PAVERS

Mark any stones to be cut with a wax crayon and use either a diamond blade wet saw (recommended) or a dry saw, a paver splitter, or a hammer and chisel may be used, but the edge they produce will be rough and uneven. Try to keep cut pieces along the edges to a size at least that of one half paver. Always wear safety glasses.

INSTALLATION OF EDGE RESTRAINT

Restrain all edges that are not up against a permanent structure with an appropriate product. Any restraint material should rest entirely on the compacted aggregate base.

SEAT THE INSTALLED PAVERS IN THE BEDDING SAND

Sweep the pavers clean prior to compacting. Cut a length of Mirafi® 500x or similar fabric to be used as a medium between the tamper and the pavers. Start tamping around the perimeter and, working inward, keep the fabric between the tamper and pavers. Make at least two passes over the pavers, overlapping each pass 2"-4". Make the second pass at a 90° angle to the first. This step will level the pavers and compact them into the bedding sand, filling the joints with sand from below.

FINISH FILLING JOINTS WITH SAND

Spread joint sand over pavers. Use a stiff bristle street broom and sweep back and forth over the entire paver surface until all joints are filled to the top with sand. Sweep off all excess sand. Again, use Mirafi 500x or a similar medium between the tamper and the pavers. Start tamping around the perimeter and, working inward, keep the fabric between the tamper and the pavers. Make at least two passes over the pavers, overlapping each pass 2"-4". Make the second pass at a 90° angle to the first. This final step will force the sand into the joints of the pavers creating an interlocking pavement. After compacting the pavers, sweep with sand again if needed.

BULLNOSE PAVERS INSTALLATION

Bullnose Pavers are typically used as stair treads, wall capping, and pool coping. The two recommended options for installation are: mortared-in-place using standard masonry procedures or glued down with a high strength flexible concrete adhesive.

Mortared-in-Place Installation:

Lay out the Bullnose Pavers in the area where they are to be installed, leaving a 3/8" gap for the mortar between the pavers. Bullnose Pavers are traditionally installed with a 1/2"-1" overhang. Remove the pavers and place an appropriate thickness of mortar on the material to which they are being affixed. Carefully return the pavers to their appropriate places and press into the mortar. Fill joints between the Bullnose Pavers with mortar.

Note: Be careful not to get any mortar on the paver surface, as it is very difficult to remove. If you do get mortar on the pavers, allow it to dry, then carefully remove using a stiff bristle brush or, for chunks, a putty knife.

Installation Using High Strength Flexible Concrete Adhesive:

Lay out the Bullnose Pavers in the area where they are to be installed, abutting one to another. Bullnose Pavers are traditionally installed with a 1/2"-1" overhang. Following the directions of the adhesive manufacturer, remove the pavers and run a continuous bead of adhesive on the material to which they are being affixed, from the front of the Bullnose Paver towards the rear. Carefully return the pavers to their appropriate place and press into the adhesive, being careful not to get any on the paver surface.

Note: See adhesive manufacturer's instructions for handling, clean-up, and cure time.



DON'T SCUFF THOSE PAVERS!

Manufacturers of plate compactors recommend the use of mats or membranes between the compactor and pavers to protect the pavers from surface damage. Most sell accessories for this purpose.

Pavers with profiled tops — Old Towne Cobble™, Coventry® Stone II, Coventry Stone III, Coventry Stone IV, Coventry Cobble, Coventry Estate Cobble, and Bristol Stone™ are most susceptible to damage from plate compactors. These pavers have high and low points molded into the surface, preventing the equipment from riding flat and subjecting the high points to potential scuffs. However, even smooth, flat surfaces can be damaged with improper usage or the existence of debris on the plate.

EP Henry recommends that you ALWAYS protect profiled top pavers prior to tamping by placing a medium between the plate compactor and the pavers. Recommended products include:

- Mirafi 500x (BEST)
- Luan plywood
- Rubber Mat
- Thin carpeting
- Cardboard

Caution: Dry sawing or grinding of concrete products may result in the release of respirable crystalline quartz. Prolonged exposure to respirable crystalline quartz may cause delayed (chronic) lung injury (silicosis). The use of a NIOSH-Approved respirator and tight-fitting goggles are recommended when sawing or grinding operations are in progress.

CALL 811 BEFORE YOU DIG!

Whether it's a paver job or a retaining wall, contractors are legally required to provide utility notification before ANY excavation. You'll need to give at least two to three business days notice, but typically not more than 10 days. Be prepared to describe your work and then plan on staying 2' away from any markings near your project.

JUST DIAL 811 NATIONWIDE.

Remember, you are liable for all damage and repair costs if you do not call!



Note about DevonStone® Installation: Our DevonStone line of cast stone slabs is created using a different manufacturing process than our non-wet cast pavers. Please go to ephenry.com for complete installation instructions for DevonStone including differences in base prep, unit spacing, cleaning and sealing and other important considerations.