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HARDSCAPES
A DIVISION OF YORK BUILDING PRODUCTS

General Installation Guide – Pavers



PAVER INSTALLATION OVERVIEW

Professionals and do-it-yourselfers alike can install interlocking concrete pavers successfully. You may need to rent tools that average homeowners do not have. If you take your time and pay close attention to the base preparation, you will be pleased with the results. Note: All paver sizes are nominal and should be pre-measured when installing where exact dimensions are critical.



EXCAVATION:

Before digging, always call the local utility company to locate any underground lines. In general terms, a minimum of 4" of compacted aggregate base is recommended for patios and walkways, and 8" for residential driveways where freeze/thaw conditions exist. Add 3" for the depth of the bedding sand and the paver thickness 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 ¼" per-foot drop, but try not to exceed ½" per-foot.



BASE PREPARATION:

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

First, run a plate compactor over the excavated area, making sure that the soil does not stick 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 soil separation fabric be laid down over the compacted sub grade, especially in moist or wet areas, to separate virgin soil from the base.

Next, spread the stone base material evenly in a 2" layer. If material is dry and dusty, use a garden hose to evenly moisten it. This will help make the gravel easier to rake and faster to compact.

Starting around the outer perimeter, use the plate compactor to pack 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. After final compaction, check the entire area for proper pitch and level conditions. The base should now reflect the final grade of your pavers. If you place a straight edge on the surface, there should be no more than a ¼" gap at any point along the straight edge.



EDGE RESTRAINTS:

The borders for the layout design may now be put into place. The edging is laid directly upon the stone base and secured with 10" steel spikes. One spike should be used every two feet for walkways and patios and every foot for driveways and radii.



SAND SETTING BED:

A setting bed of concrete sand can now be spread on top of the compacted base. Note: It is important to keep the sand dry. Always keep the 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. 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. For narrow areas such as walkways, the PVC edging can be used as a guide with a notched 2 x 4 board. When the pavers are set on the sand and compacted, the 1" of sand will compress to ½" to ⅝" thickness.

INSTALLATION OF PAVERS:

All projects must start at a perfect 90-degree angle. Use the 3-4-5-triangle method to establish this. For an even mix of pavers, *select pavers from multiple cubes* for optimum color blending. Starting from a permanent edge such as a house, driveway, or even a piece of rigid PVC edge restraint, lay the first paver starting from either side. String lines will assist in assuring straight lines. Spacing between pavers should not exceed ⅛". Set pavers lightly on the sand, never press or hammer them in. If you are doing the project over several days, cover the entire area with plastic at the end of each work day if rain is expected.



COMPACTING AND SWEEPING:

Spread and sweep sand over the entire top of the pavers using a stiff bristle broom. Vibrating with a plate compactor will force the sand between the joints stabilizing and leveling the final surface. The recommended application is the use of a layer between the compactor and the pavers. Excess sand should be swept into the joints. Re-sweep additionally as necessary.

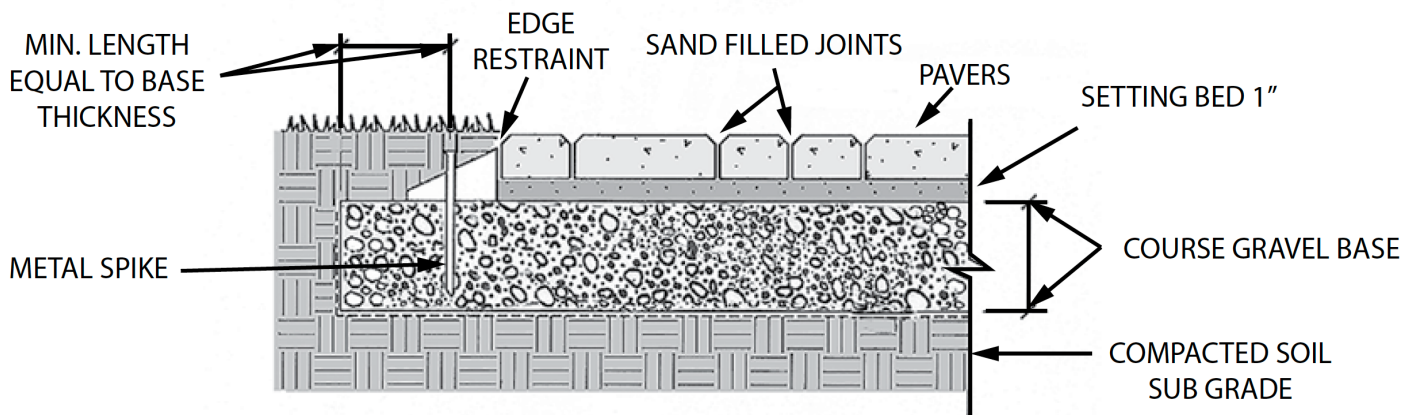


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These illustrations show a "cut-away" view to be used as a basic guideline. The gravel base should extend beyond the edge restraint an equal amount to the depth.

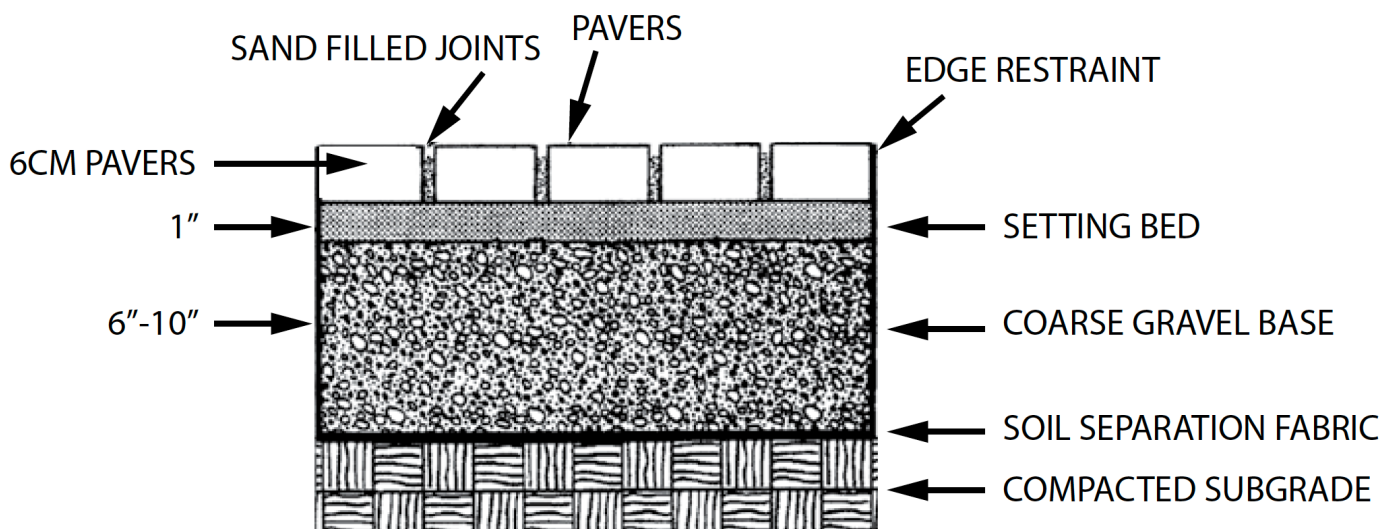
Typical Residential Detail

Walkway • Patio • Pool Deck



Typical Light Vehicular Detail

Walkway • Patio • Pool Deck



SITE PREPARATION FORMULAS

BASE MATERIAL CALCULATIONS:

The following formula is used to calculate the amount of base material ($\frac{3}{4}$ QP).

Step 1: Length x width = area (measured in square feet)

Step 2: Area $\div$ 12 x inches of base required = total cubic feet of base

Step 3: Cubic feet of base x 1.25 (compaction factor) $\div$ 27 = yards of base needed

BEDDING SAND CALCULATIONS:

The following formula is used to calculate the amount of bedding sand (clean, sharp, well graded).

Note: 1" to 1 $\frac{1}{2}$ ", but no greater than 1 $\frac{1}{2}$ ".

Step 1: Length x width = area (measured in square feet)

Step 2: Area $\div$ 12 x 1" (typical thickness) = cubic feet of sand

Step 3: Cubic feet of sand $\div$ 27 = yards of sand needed

EDGE RESTRAINT CALCULATIONS:

The following formula is used to calculate the amount of edging:

Step 1: Measure the total linear footage of job, less any existing edge (foundation, curbing, wall etc.)

Step 2: Total lineal feet of edge restraint required $\div$ length of edging = total pieces of edge restraint required. Some rigid edge restraint pieces are 8'.

Step 3: Spikes required: Driveway 1 Per 1 L/F; walkway 1 Per 2 L/F

*Calculation formulas are provided as a service by NewLine Hardscapes for estimating material requirements. NewLine Hardscapes will not be held responsible in any way for resulting product overage or shortage.

FREQUENTLY ASKED QUESTIONS

How are pavers made?

We use high quality pigments to color our products throughout the entire paver, so the color won't wear away unlike some pavers that have only a thin "topcoat" of color. Because of the sun's ultraviolet rays, some overall fading may occur on any paver.

How do I clean my pavers?

NewLine Hardscapes recommends using one of the many hardscape cleaners available on the market. Contact your local dealer for their recommendation on which cleaner is best for you.

Should I seal my pavers?

Sealers help in enhancing colors and resisting stains. There are a variety of sealers available, including some that are high gloss, and some that are low or no gloss. You must wait at least a full season after installation before applying a sealer.

Will weeds grow up through the pavers?

Weeds do not grow up from below the pavers through the stone base. The growth of weeds and grasses results from airborne seeds. Ask your local dealer for their recommendations on which type of weed killer to use for

your particular application. For best results, use a polymeric sand during the installation of your pavers to eliminate weeds, ants, etc.

What is efflorescence?

Efflorescence is a whitish powder-like deposit which sometimes appears on concrete and clay products. The deposit is the residue of a soluble salt (inherent in quarried products like stone, sand and clay) carried to the face of the product by moisture and left on the surface as a dried white powder. Efflorescence is completely natural and will disappear with time.

What should I do about de-icing?

Pavers are high-density units that resist deterioration from freeze-thaw cycles and de-icing salts better than asphalt, poured-in-place concrete and stamped concrete. While pavers are resistant to de-icers, NO concrete product is immune to the long term effects of de-icing.

Can I pick the color of my NewLine Hardscapes pavers from the color sales literature?

NewLine Hardscapes products are made from natural materials, which have variations in colors and shades. The color photos are prepared with great concern for accuracy, but because photo reproductions cannot precisely convey the color of the actual product, we strongly encourage you to visit an authorized NewLine Hardscapes dealer.