

Installation Guidelines

Interlocking Concrete Pavers

County Materials provides general construction guidelines to design professionals and installers of interlocking concrete pavers. For additional installation information, reference the Interlocking Concrete Pavement Institute's (ICPI) Tech Spec Technical Bulletins.

All interlocking concrete pavers manufactured by County Materials are manufactured in general accordance with industry guidelines.

Characteristics	ASTM C936	ICPI Standards
Compressive strength	8000 psi at 28 days	8000 psi at 28 days
Durability to freeze thaw cycles	Total mass loss after 50 cycles, no greater than 1%	Total mass loss after 50 cycles, no greater than 1%
Water absorption	Lower than 5%	Lower than 5%
Dimension tolerance	± 1/8" (Height) ± 1/16" (Length and width)	± 1/8" (Height) ± 1/16" (Length and width)

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EXCAVATION

- A** Before excavating, call all local utility companies (e.g., phone, gas, electrical) to ensure the area in which you plan to dig is clear of underground cables or wires. If any are found, please notify the appropriate companies before you begin.
- B** When excavating, it is important to achieve a slope in increments of 1.5% (3/16" per ft./5 mm per 300 mm), which will allow for proper drainage. The excavation should mirror the final grade of pavement.
- C** The width of your base behind your edge should be equivalent to the thickness of the base.
- D** Grade the bottom of your excavated area. If the natural soil is granular or sandy, the industry recommends you compact the soil with a vibrating plate. If the soil is clay-like, change the soil with a blend of lime and crushed stone prior to compaction. Next, cover it with a layer of geotextile fabric to prevent the contamination of your base (clay and 0-3/4" [0-20 mm] crushed stone).

BASE MATERIAL

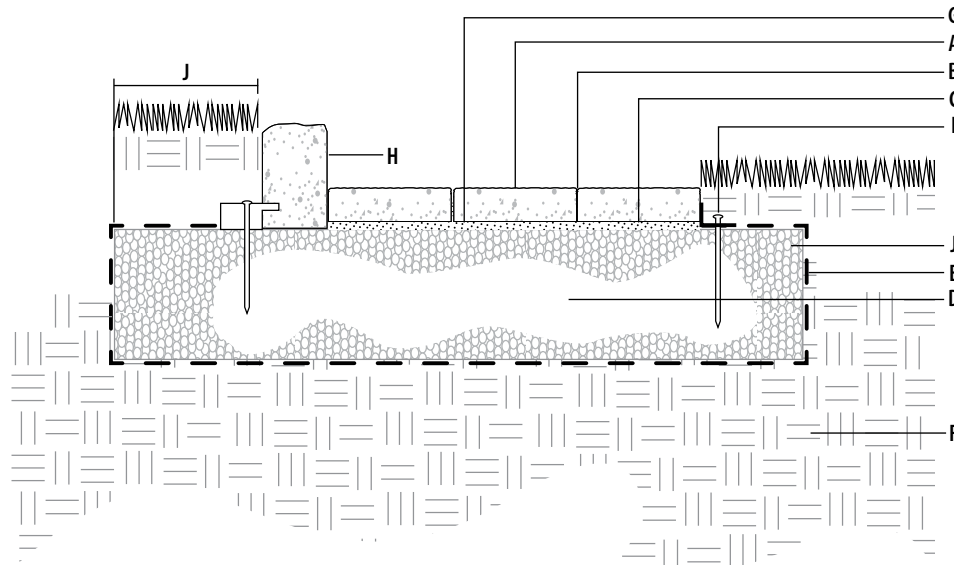
- A** Install your 0-3/4" (0-20 mm) crushed stone base, in 4" (100 mm) lifts with a (minimum 5000 lbs [22 kN] vibrating plate) compactor.
- B** To facilitate compacting, wet your base material thoroughly and compact with a vibrating plate proceeding in all directions. Continue this process until you achieve your desired height. At this stage, you can verify your final height with the help of a paver.
- C** Base tolerance ± 3/8" (10 mm) for every 10' (3-m) increment.

THE SETTING BED

- A** On your compacted crushed base, install two pipes (outside diameter of 1" (25 mm)). Grade the concrete sand with the help of a straight edge. If the base isn't properly graded and smooth, imperfections will be evident in the finishing grade of the pavement.
- B** Bedding sand should not be compacted until all paving stones have been laid down. Passing the vibrating plate over your paving stones causes them to settle approximately 3/8" (10 mm) into your bedding sand.

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- A County Materials Concrete Paving Stones (ASTM C936). Paver surface pitch for positive drainage (minimum 2%. 1/4"/ft, [6mm/300mm])
- B Sand joint material (ASTM C144)
- C Sand setting bed: 1" (25mm) before compaction (ASTM C33)
- D Base stone depth varies with soil type, climate, load and water table
- E Geotextiles
- F Subgrade soil; classified and properly graded
- G Geotextile strip to prevent downward sand migration
- H Edge restraint
- I Edge restraint (PVC, aluminum) anchored to base stone
- J Base stone extends beyond edge of pavement to a minimum of 6" (150 mm) or equal to depth of base stone

INTERLOCKING CONCRETE PAVEMENT INSTALLATION

Typical cross section

INSTALLATION OF PAVING STONES

- A Once the choice of paving stones and the design has been finalized, it is recommended that you start installing your pavers at a 90-degree angle. This is realized by proceeding as follows: measure a first horizontal line 3' (1-m), and a second line of 4' (1.2 m) perpendicular to the first. You then connect a third straight line of 5' (1.5 m) which will form a triangle, and the result will be a perfect 90-degree angle. While installing your paving stones, walk on the installed pavers, and fill in gaps caused by the pipes with concrete sand.
- B Color of concrete products may vary significantly between production lots. Install concrete units from several pallets to ensure distribution of color. Furthermore, you should proceed with the cubes from top to bottom.
- C You may use a chalk line to mark the stones to be cut along the borders, after which you can then cut using a guillotine or a concrete saw. When cutting paving stones, always wear personal protective equipment, including protective ear and eye wear.
- D Once you finish installing your paving stones, you can then install the specified edge restraint. In a vehicular traffic application, the concrete must be reinforced using steel rods.

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JOINT MATERIAL

County Materials recommends natural sand (as specified by ASTM C144) as the preferred paver jointing material for use with County Materials' concrete pavers, and a sand joint stabilizer from either Surebond or Prosoco.

A Spread out the joint material on the paving stones, and sweep in between joints in all directions.

B Make sure all joint material is completely swept off and removed from the surface of the pavers before compacting to minimize surface abrasion. Pass vibrating plate in all directions to allow sand to penetrate between the joints. Proceed with steps A - B if additional joint material is required, and follow the instructions provided on the joint material packaging.

VIBRATING PLATE ALERT! - Paver and patio stone surfaces require a buffer between the plate compactor and the paver surface to prevent scuffing. Pavers with embossed surfaces (high and low points) are more susceptible to scuff marks from plate compactors. County Materials recommends the use of urethane mats between the plate and the paver surface when compacting. County Materials will not be held responsible for compaction scuffs or burns on pavers.

EFFLORESCENCE

Efflorescence is a naturally occurring process in all concrete products which may appear in the form of a white powdery film on the unit's surface. Efflorescence may be more perceivable in darker colors. It does not, in any way, compromise the functionality or the structural integrity of the product or your installation. Although efflorescence cannot be prevented, it will wash off over time or it can be cleaned with a recommended industry cleaner. County Materials accepts no responsibility or liability for the occurrence of efflorescence.

POLYMERIC HAZE

Polymeric haze from the use of polymeric joint sand may appear on your concrete paver products if the sand was not installed properly or removed from the surface of the paver properly. This does not, in any way, compromise the functionality or the structural integrity of the product or your installation. The hazing will weather away naturally with time and rain. Polymeric haze may be removed with a recommended industry cleaner; you are advised to contact your installer or the polymeric sand company directly for recommendations. County Materials accepts no responsibility or liability for the occurrence of polymeric haze.

CONSTRUCTION RESIDUE

A possible by-product of cutting concrete units during installation with a saw is residue-filled water or concrete dust. Residue-filled water or re-hydrated dust can cling to the surface of units and leave a concrete stain. It is recommended to wash and remove the water or concrete dust from the surface of the pavers before it dries. Construction residue can also happen through soil disturbance or environmental elements. These contaminants should be removed immediately; they do not compromise the functionality or the structural integrity of the product or your installation. County Materials accepts no responsibility or liability for the occurrence of construction residue.

PROPER LIFETIME CARE

Refer to County Materials' Care and Maintenance Guide for Pavers and Patio Products for year-round care and maintenance recommendations.

Purchaser is responsible for proper use, handling, maintenance and installation of product as determined by the manufacturer and industry standards. Product has a fitness for a particular purpose. Use and/or application of product not intended by the manufacturer and not in compliance with industry standards is not recommended. Use and/or installation and application are the sole responsibility of the purchaser.