

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.

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 utilities.
- 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).

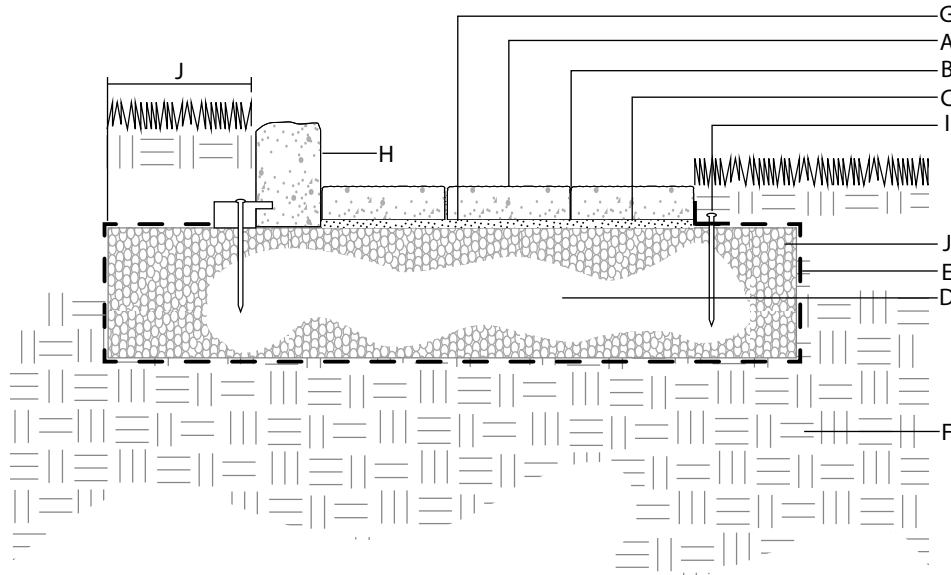
Base Material

- 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 $\pm 3/8"$ (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.

Installation Guidelines- Interlocking Concrete Pavers



- 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

Mock-Up Sample Units

Before project installation begins, construct a separate mock-up sample panel of not less than 7 feet by 7 feet with units in the pattern, type, color, finish and shape specified. This sample panel must be completed for evaluation of surface preparation techniques, application workmanship, as well as the application methods for any jointing materials, and cleaning and sealing agents.

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 Because concrete units are manufactured with high quality, naturally-mined aggregates and materials, variations in color or shading should be expected in products that are manufactured at different times and in units having different shapes. This color or shading variation is acceptable in the industry.

The contractor must install concrete units in accordance with the landscaping industry's best practices, according to ICPI standard specifications, and the manufacturer's instructions. Install units from several pallets to ensure distribution of color. County Materials is not liable or responsible for loss or damage resulting from improper storage, handling, maintaining the products or failure to follow installation instructions. Follow recommended warnings, advisories and instructions.
- 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.
- 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.

Installation Guidelines- Concrete Slabs

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

Excavation

- A Before excavating, call all local utility companies (e.g., phone, gas, electrical) to ensure that 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 continue.
- B When excavating, it is important to achieve a slope in increments of 3/16" per ft. (5 mm per 300 mm) which will allow for proper drainage. The excavation should mirror 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 membrane to prevent the contamination of your base (clay and 0-3/4" [0-20 mm] crushed stone).

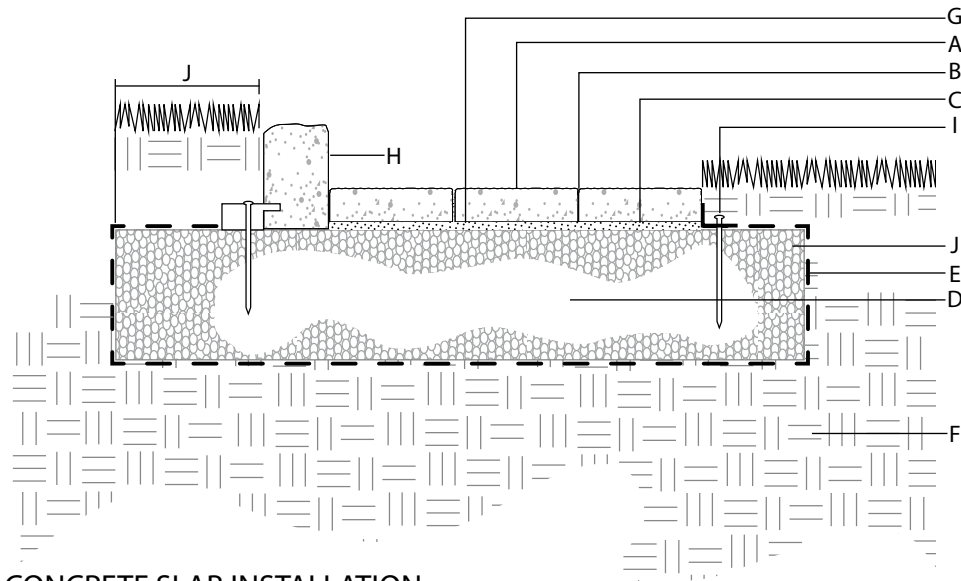
Base Material

- 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 $\pm 3/8"$ (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 Once the setting bed is graded, pre-compact with a hand tamper, then lightly fluff.

Installation Guidelines- Concrete Slabs



- A County Materials Concrete Slabs. 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) (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
- J Base stone extends beyond edge of pavement to a minimum of 6" (150 mm) or equal to depth of base stone

CONCRETE SLAB INSTALLATION

Typical cross section

Installation of Slabs

- A Once the choice of slabs and the design has been finalized, it is recommended you start installing your slabs at a 90-degree angle. To obtain a 90-degree angle you should use the rule of a 3/4/5-triangle. This is realized by proceeding as follows: measure a first horizontal line of 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 slabs, walk on the installed slabs, and fill in gaps caused by the pipes with concrete sand.
- B Color of concrete products may vary significantly between production lots. Install concrete slabs 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 concrete saw. When cutting slabs, always wear personal protective equipment, including protective ear and eye wear.
- D Once you finish installing your slabs, you can install the specified edge restraint.