



## INTERLOCKING CONCRETE PAVERS:

### *Building a Pavement to Last a Lifetime*

You've decided to increase the value of your home by making an investment in Hardscaping...

**Know What to Expect and How to Get the Best Installation**







*Your contractor will select the correct equipment for the job.*



Concrete pavers offer a variety of patterns and colors that add character to any home. They provide value as a durable yet low maintenance surface for patios... walks... entryways... driveways... which last a minimum of 30 years when installed correctly. Other pavements such as asphalt or poured concrete experience a shorter life. A well-designed and durable project can depend on taking a little extra time learning installation steps and making the right decisions to get the best possible results.

### ***Knowing Your Contractor:***

In order to ensure a quality installation, you should ask your contractor the following questions:

*How long have they been installing pavers?*

*Have they been trained by a manufacturer or by the ICPI? Do they have a certificate of completion?*

*What percentage of their total business consists of installing concrete pavers?*

*Can they provide references and can you contact them and inspect their projects?*

*Do they have a current liability insurance certificate?*

*Proof that Worker Compensation Insurance covers all employees on the job?*

*Do they install the job per ICPI guidelines?*

*Do they provide a written, itemized proposal outlining the scope of work? Do they guarantee their work? Are they members of the ICPI or other industry associations?*



*Layout and Excavation*



of the pavement foundation is one of the most important elements of the job. Soil subgrade and base preparation should consume up to 70% of the labor. For example, if the job will be completed in five days, you can expect the soil subgrade and base to be prepared in three days.

Preparing the subgrade is setting the table for the rest of the pavement. Attention must be given to understanding the type of soil, and the amount of compaction. Interlocking concrete pavements are designed to be flexible pavement systems. A brief explanation of each follows.

## *Installation Procedures*

### **Step-By-Step Process:**

#### *Layout and excavation of a site*

The layout of an interlocking concrete pavement is where the drawing is translated into reality. In addition to knowing the size of the project and excavated area, the layout forces the contractor to consider the sequence of job functions and crew involvement. Considering all factors in advance helps ensure a smooth operation.

#### *Preparing the soil subgrade*

As with the layout and excavation, proper preparation

#### *Soil type*

A properly prepared soil subgrade will support the base above it and allow the base to perform its role of distributing the loads and stresses from above. The soil type should have been identified before starting the job, during the bid proposal. It can affect the estimate on labor hours and the type of equipment required for the job.

#### *Compaction*

Once the soil type is identified, the contractor will need to compact it. Compaction increases the weight per unit volume (or density) of soil. When a soil is compacted, the air spaces between the voids decrease. Compaction achieves four main





*Compacting*



*Installing the Geotextiles (optional)*



*Installing the Base Aggregates*

purposes; it will increase the soil's load bearing strength; prevent pavement settlement/rutting; reduce seasonal movement, and help ensure that any movement is uniform.

### ***Installing Geotextiles (optional)***

Geotextiles are recommended over clays or silts. They are also a good choice over soils saturated for a large portion of the year. The fabric separates fines in soils from the base and prevents them from migrating upward into the base.

### ***Best Practices for Base Installation***

ICPI recommends minimum base thickness for different applications. For pedestrian areas, including patios and walkways, a minimum 4 in. (100 mm) thickness is recommended. For residential driveways over well drained soils a minimum of 6 in. (150 mm) thickness is recommended. These thicknesses will be increased in colder climates or over continually wet or weak soils. Most driveways in freezing climates are at least 10 in. (250 mm) thick.

### ***Installation of edge restraints***

Edge restraints are a critical component of all interlocking concrete pavements. They hold the pavers in place for the life of the pavement.

### ***Bedding sand***

Sand is installed over the base to a consistent thickness. ICPI guidelines note that bedding sand can be installed between  $\frac{3}{4}$  inch (20mm) and  $1\frac{1}{2}$  inch (40 mm). Th. With the compacted base and uncompacted bedding sand installed to these tolerances, the pavers are ready for installation.



*Installing and Leveling the Bedding Sand*

### ***Choosing the right paver for the job***

It is important to choose the right pavers for the application. As a rule of thumb, pedestrian areas and residential driveways will achieve interlock with 2-3/8 inch (60 mm) thick pavers. Another important consideration is the size of the paver. It is important that you ask your contractor whether the pavers they are using are the recommended size for the application.

### ***Cutting pavers***

All jobs with concrete pavers will involve cutting. There are three basic tools for cutting pavers: the mechanical splitter, the powered table saw and the hand-held gas powered quick saw. Professional contractors should take care to control the dust from cutting pavers but you should always expect that

there will be dust during this process. Cutting pavers is also noisy.

### ***Compacting the pavers in place***

*Pavers are first compacted without joint sand to create initial interlock.*

All pavers should have two passes of the plate compactor over them prior to filling the joints with joint sand. After this is complete, dry joint sand is spread and swept and the pavers compacted again until the joints are completely full. At the end of the day all pavers should be compacted in place within 6 to 8 feet (2 m) of any unfinished edge.





*Installing the 1st pavers*

## *Why Should you choose a company with a certified installer?*

### **Knowledge**

ICPI certified concrete paver installers are industry professionals. They recognize industry guidelines on constructing interlocking concrete pavements.

### **Industry support**

Many certified installers are ICPI members. As members, their companies receive technical support and the latest industry information.

### **Assurance**

You can be sure that a company with a certified installer on staff is dedicated to quality installation guidelines and on-going education.

### **Continuing education**

Certified Concrete Paver Installers are initially certified for five years may renew their certification annually. ICPI has certified over 10,000 concrete paver installers.

## *What is ICPI Certification?*

The ICPI Concrete Paver Installer Certification course communicates industry established guidelines to



*Cutting pavers*

contractors who build segmental concrete patios, driveways and walkways. Launched in 1995, the two-day certification course enhances the knowledge of individuals who construct interlocking concrete pavements. Installers are instructed by ICPI Certified Instructors who have attended ICPI training and have years of experience in the industry.

## *Why consumers choose ICPI certified concrete paver installers?*

ICPI sets installation guidelines for the industry. Certification helps contractors meet or exceed these guidelines.

### **Identifies the professionals**

You want to do business with a professional company that knows industry guidelines. Certification identifies installers who know them.

### **Increases confidence**

Knowing that an experienced, skilled company with certified employees on the job boosts your confidence in getting best practices in installation.

### **Investing wisely**

You're investing in a low-maintenance, long-lasting



*top left: Pavers compacted in place before spreading of joint sand. middle left: Spreading and sweeping of joint sand. bottom left: Compacting with joint sand. right: The finished patio.*

pavement. Certified installers can help get the job done right the first time and on time.

### **Installing smartly**

Because you want to hire skilled practitioners and craftsmen to install the best pavement, you should receive the highest value and benefit from educated, certified installers.

The installer can verify certification by presenting a valid certificate or card from ICPI.

### ***Who is ICPI?***

Formed in 1993, the Interlocking Concrete Pavement Institute (ICPI) is the authority on interlocking concrete pavements in North America. Membership consists of the manufacturers, suppliers, distributors

and contractors. ICPI endeavors to increase the use of segmental concrete pavements in North America through education on proper installation methods.

### ***How to Know When the Installation is Done Right?***

For additional information on proper installation techniques and questions you should ask your contractor to help get the best job possible, see the ICPI Concrete Paver Consumer Guide.

### ***How to Find an ICPI Certified Paver Installer***

Visit [www.icpi.org](http://www.icpi.org)





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