

One of the mantras of ICPI contractor training is that pricing is established by the job and not by the square foot. Pricing by the job relies on establishing and maintaining a database of productivity for each job with each one divided into labor functions. These typically include excavation, base/subbase installation and compaction, bedding installation, paver and joint material installation. Mobilization and clean up will vary and should be documented on each job as well. Job functions are expressed in a unit of something bought and installed per person per hour. For example, base is purchased by the ton and installation productivity is therefore measured in tons per person per hour.

Who measures productivity for each job? The job foreman is responsible for measuring or documenting productivity for each job function on every job. The number of hours spent on each job function are then compared to the estimate that created the bid initially. If the hours exceed the estimate, then the job lost money or at least was not as profitable. Company owners, managers and project estimators should work with the job foreman in identifying ways to avoid hours that exceed the estimate or adjust productivity hours on the next project.

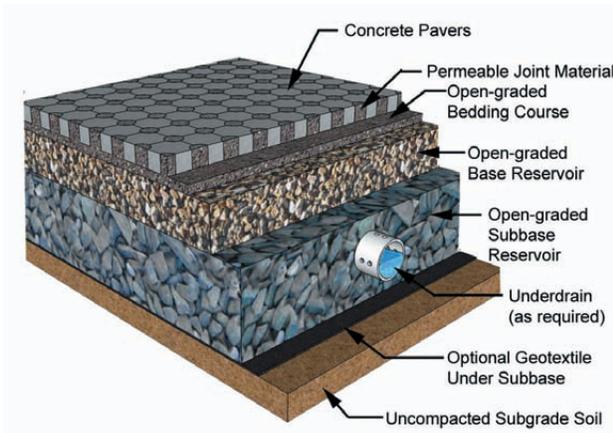


Figure 1 illustrates a typical PICP cross section. For contractors new to PICP, starting out with some realistic productivity figures can be helpful in pricing jobs. These are presented below and should be modified according to each job so more accurate costs can be estimated and bid prices provided to potential clients.

Productivity depends on the foreman, the crew, weather, suppliers, traffic, site location, site access, material storage and more. Productivity on a range of job sizes and configurations will be collected over time. A pattern will likely emerge where productivity will be similar to jobs of similar stress and site access. A good estimator will be able to make reasoned judgments that result in competitive yet profitable prices.

Approx. Productivity Rates for PICP Installation

Note: Many commercial projects utilize asphalt contractors to install base/subbase materials as they have equipment and experience.

Subbase (assume No. 2 stone at 12 in. thickness placed and compacted in two 6 in. lifts)

- Commercial parking lot: 60 tons/person/per hour

Base Installation and Compaction:

4" lift: plus minus 1/10 ft.

- Small backyard project (wheelbarrow delivery): 1 ton/person/hour
- Trucked in: 2.5 tons/person/hour
- Driveway: 3 to 4/tons/person/hour
- Commercial parking lot: 30 tons/person/hour

Screeding bedding materials:

- Manually with metal screed and rails/pipes: 100 sf/person/hour
- Screed beam worked manually on rails: 200 sf/person/hour
- Mechanical spreader with rollers on rails with powered equipment: 300 sf/person/hour
- Asphalt spreader with lasers (3 person crew): 500 sf/person/hour

Paver Installation and compaction (including occasional compaction to correct local rutting from equipment)

Manually:

- Small areas: 20 sf/person/hour
- Driveways: 40 sf/person/hour
- Large areas: 60 sf/person/hour

Mechanically (crew of 3):

- Low: 150 sf/person/hour
- Average: 200 sf/person/hour
- High: 300 sf/person/hour

Installing edge restraints (into dense graded base borders): 30 ft/person/hour

Concrete curbs: typically used in commercial applications are assumed to be installed by others.

Cutting pavers (dry cutting; wet cutting will be lower)

- 6 cm thick pavers: 30 ft/person/hour
- 8 cm thick pavers: 20 ft/person/hour

Sweeping and filling joints/openings

- Push broom/lute: 250 sf/person/hour
- Mechanical: 500 sf/person/hour

Conclusion

PICP is experiencing about 20% annual growth. An increasing number of contractors are entering this market thanks to national, state and local stormwater runoff regulations and low-impact development ordinances. The preceding productivity estimates are like a road map by indicating a route to take. When it is actually taken, adjustments are made along the way. ♦

Materials: The following information is provided from **Pavers by Ideal**.

Sweeping Stone - # 9 (1/4")

- 6cm AquaBric: 2 lbs/sf
- 8cm AquaBricIV: 2.66 lbs/sf
- 8cm EcoStone: 3 lbs/sf

Setting Bed - # 8 (3/8")

- 2" thick: 1700 lbs/100sf
- 3" thick: 2550 lbs/100sf

Base/Subbase:

- 1st choice: #2 (1 1/2") Open Graded Stone
- 2nd choice: #57 (3/4") Open Graded Stone (max: 6" thick)
- 3rd choice: Processed Gravel

Coverage:

- @ 6" thick ≈ 3 tons/100 sf
- @ 8" thick ≈ 4.5 tons/100 sf
- @ 12" thick ≈ 6 tons/100 sf

Thickness: (minimum)

- Walkways: 6"-8"
- Driveways: 8"-12"
- Parking lots: 12"- 18"

(Note: Thickness will vary depending on type of sub-grade soil & hydrological requirements of site.)



Concrete & Permeable Pavers ■ Landscape Retaining Walls ■ Garden Products

Manufactured by Ideal Concrete Block Company, Inc.

45-55 Power Rd – Westford, MA 01886 ■ 232 Lexington St. – Waltham, MA 02452