

BASIC PAVER AND SLAB INSTALLATION

What You Will Need

Building Materials

- Bedding Material
- Base Material
- Joint Sand or Polymeric Sand
- Geotextile
- Paver Edge Restraint

Guides

- Screeding tool: 8'-10' long (use straight 2x4 or carpenters level)
- Two Levelling Guides: 10' long, 1" outer diameter (pipe, electrical conduit, wood strips, etc.)
- Wooden Stakes or Metal Pegs
- String
- String level
- Carpenters Pencil

Tools

- Hand Tamper
- Carpenters Level

- Trowel
- Rake
- Shovel
- Wheelbarrow
- Broom
- Rubber Mallet
- Tape Measure
- Safety Glasses

Equipment (available to rent)

- Plate Compactor (min.-5000 lbf) or Roller Compactor
- Concrete Saw with a Diamond Blade
- Jumping Jack or Sheep's Foot Compactor

Optional

- Gloves
- Knee Pads



Base & Bedding Recommendations

	Bedding Material	Base Material	Advantages	Installation Notes
Traditional Base	Course Sand <i>Alternate Names:</i> Concrete Sand (adhering to either ASTM C33 or CSA A23.1 FA1)	3/4" crusher run, well-graded gravel <i>Alternate Names:</i> 3/4 down "A" Base	This base system has many years of successful use, and materials are readily available and often most economical.	
Free Draining Base	1/8" to 1/4" crushed clear/clean stone. <i>Alternate Names:</i> 1/8", 1/4" chip or HPB (High Performance Bedding)	3/4" crushed clear/clean stone <i>Alternate Names:</i> ASTM No.57 Fifty-Sevens	This base system is more resistant to frost heave and is not as easily damaged during installation by rain or foot traffic.	Geotextile is required to prevent soil particles from entering the clean base material. Subsoil must be sloped to drain water away from any structures, and towards a suitable runoff location or below grade drainage system. Final paver laying must not vary by more than 1/8".

Design & Excavation

1. Mark out Your Design

- a. Use your preferred method to mark out the outline of your design on the ground. String or spray paint are good options.
- b. We recommend excavating at least 12" past your intended paver perimeter.

2. Set Elevations

- a. Set stakes; mark the elevation and grade; set string lines to mark the top of finished patio. Slopes should be minimum of 1.5% or 1" for every 8'.
- b. Grade stakes should be checked periodically to ensure they have not been disturbed.

3. Excavation (Table A)

IMPORTANT: Before any digging, contact your local utility companies for the location and depth of pipes, cables and conduits.

- a. Calculate your Total Excavation Depth using the appropriate table for your jobsite based on the climate you live in.

Total Excavation Depth = Paver/slab thickness + 1" Bedding Sand + 4–8" Base Layer
- b. Remove the dirt and sod below your string lines to match your Total Excavation Depth.
- c. Compact the newly unearthed soil using the Jumping Jack or Sheep’s Foot Compactor. Compaction of the unearthed soil is critical to the performance of your paving project. Do this prior to installing geotextile and/or base layer.

Table A
Dry Climate

Project	Paver/Slab Thickness	Bedding Material Layer	Minimum Base Thickness*
Patio/Sidewalk	x	1"	4"
Driveway	x	1"	6"

Cold Climate/Wet Soil

Project	Paver/Slab Thickness	Bedding Material Layer	Minimum Base Thickness*
Patio/Sidewalk	x	1"	6"
Driveway	x	1"	8"

Minimum Base Thickness is dependent on soil structure. Every job-site is unique, and your base thickness requirements may vary. When in doubt, consult a professional.

Base Layer Compaction

4. Install Geotextile (optional)

- a. Geotextile reduces the likelihood of premature settling and rutting. Use it in areas where soil remains saturated part of the year, where there is freeze and thaw, or over clay and moist, silty soils.
- b. Ensure minimum downslope overlap of 12".
- c. Cover the compacted soil including the vertical sides, with geotextile.

5. Spread and Compact Your Base Layer

IMPORTANT: Do not install frozen base material or spread base material over frozen soil.

IMPORTANT: As you compact, check the base material moisture to ensure it is neither too wet or too dry. Clump some aggregate in your hand. It should retain its shape when dropped from 1 foot. If your aggregate is too dry, spray lightly with water.

- a. Spread a layer of base material across your surface. Reference the items on Table A to calculate your required base thickness.

For 7000 lbf reversible plate compactors: Spread and compact up to 4" at a time. The base material should extend 6 inches beyond your intended paver perimeter. Base should be compacted so that a 10 inch spike should take 3 hard strikes with a 2lb hammer to drive into the base.

For 5,000 lbf reversible plate compactors: Spread and compact up to 2" at a time. The base material should extend 6 inches beyond your intended paver perimeter. Base should be compacted so that a 10 inch spike should take 3 hard strikes with a 2lb hammer to drive into the base.

- b. Continue adding layers and compacting until you are 2" + Paver height away from top of soil.

6. Screed and Compact Your Final Base Layer

- a. Lay your levelling guides (1" pipe, electrical conduit or wood strips) onto your compacted base.
- b. Set the proper height of your levelling guides. Ensure that the bottom of the screed bar ends up being 1" above the compacted base.
- c. Fill the area with your final base layer. Slide the 2x4 board along the levelling guides to spread and level the final base layer within 3/8" of the final grade. Compact the final base layer, as usual.

7. Confirm Your Final Base Height (Diagram A)

- a. Place a test paver or slab on your base layer. If the paver or slab is more than 1" below your final grade height, add more base material, screed and compact until the 1" threshold is reached.

Edge Restraints & Bedding Material

8. Install Edge Restraint

IMPORTANT: An edge restraint should be installed after the base layer is compacted and prior to bedding sand.

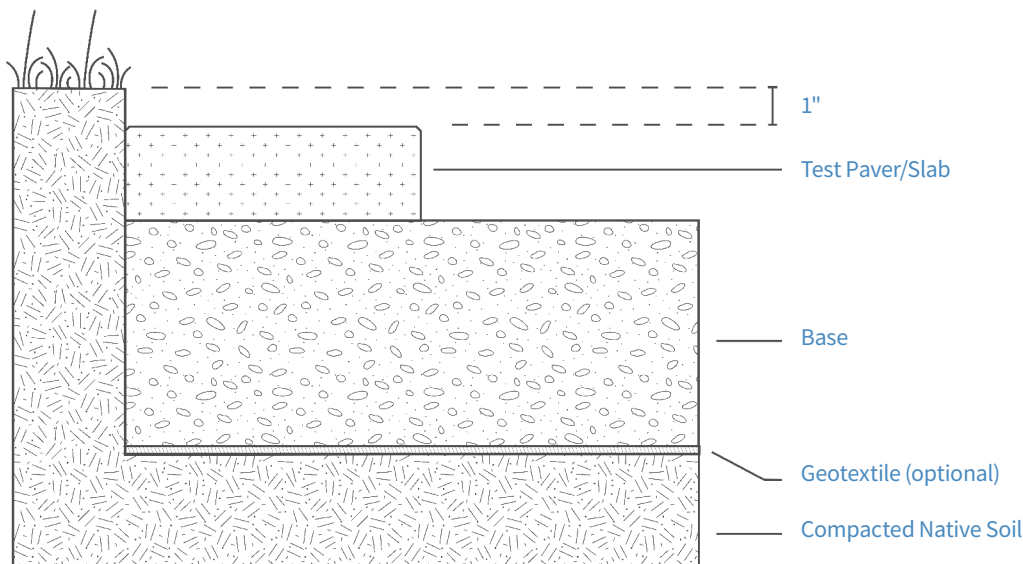


Diagram A

a. Install an edge restraint of your choice. We recommend Snap Edge. Carefully follow the manufacturer's instructions.

9. Bedding Material

IMPORTANT: Do not use crushed limestone or stone dust as bedding sand. Do not install frozen or water saturated sand.

- Lay your levelling guides (1" pipe, electrical conduit or wood strips) onto your compacted base.
- Set the proper height of your levelling guides. Ensure that the bottom of the screed bar ends up being 1" above the compacted base.
- Fill the area between the leveling guides with bedding material. Bedding material will be spread and levelled to an uncompacted nominal 1". (25 mm) thickness.
- Slide the 2x4 board along the levelling guides to spread and level the bedding material.

Installing Pavers & Slabs

10. Lay Down Pavers

IMPORTANT: Do not use your house or building as reference line.

- Use string lines as a guide for maintaining straight joint lines.
- Pull and mix pavers or slabs from different bundles for better colour blending.
- Cut or split pavers or slabs using a concrete saw or paver splitter. Use proper dust collection or a respirator when running a saw.
- When installing pavers or slabs, ensure that each block is in contact with previously placed block as you place it. Avoid placing a paver or slab on the bedding material and then pushing it into place.

Compacting Pavers & Slabs

11. Compact Your Pavers or Slabs

IMPORTANT: Always use a Paver Saver Mat when using a plate compactor to avoid damaging your pavers.

a. Plate Compactor (minimum 5000 lbf): Used for pavers only.

Roller Compactor: Used for pavers or slabs

b. After placing your pavers or slabs, select the appropriate compactor for your surface. Compact with two passes at right angles made across the surface to set the pavers or slabs in the bedding sand and force the sand into the joints.

Joint Sand or Polymeric Sand

Finish your paver or slab installation with either joint sand or polymeric sand.

12a. Option 1: Install Polymeric Sand

IMPORTANT: For joint sand installation refer to page 7.

- Carefully follow the manufacturer's instructions. Each manufacturer has specific installation instructions regarding application, wetting and drying
- Final surface height variation should not exceed 3/8" from final elevation.

c. Refer to icpi.org/barkmanconcrete for detailed Barkman ICPI technical specifications.

12b. Option 2: Install Joint Sand

a. Sweep dry joint sand into the spaces between your finished pavers. Joint sand can be finer than bedding sand.

b. Compact the surface.

IMPORTANT: Always use a Paver Saver Mat when using a plate compactor to avoid damaging your pavers.

c. Plate Compactor (minimum 5000 lbf): Used for pavers only.

d. Roller Compactor: Used for pavers or slabs.

e. Ensure joints are full. Apply more sand if necessary and make take two or three more passes with compactor.