

Permeable Pavers

Driveway Causing Runoff Erosion?

Driveways often cause problems with runoff. Permeable pavers are a system of concrete blocks or pavers set in gravel to allow water to pass around them and into the soil. Permeable pavers can be used instead of solid concrete or asphalt for driveways, patios, and walkways.



Whenever the ground is covered with non-permeable surfaces such as solid concrete or asphalt, rain can't seep into the soil. As water flows off asphalt or concrete, it can cause erosion or carry pollution into stormdrains and on to rivers and streams. Permeable paving is a system that allows water to pass around the paver and infiltrate in-between the pavers

Cold Climate Considerations:

Porous pavement/concrete is susceptible to cracking and breaking due to the effects of freeze thaw cycles in our environment; however, new technology has led to the development of other material that may work well for your situation. This manual primarily addresses permeable pavers. In cold climates where areas need to be plowed for ice or snow removal, blocks may catch and cause damage to the blocks and/or plow.

Cost Estimate:

- about \$10 per square foot

Time Estimate:

- one to four days depending on the size of the area

Materials:

- Coarse gravel
- Geotextile or landscaping weed fabric
- Bedding sand and / -or pea gravel
- Paving blocks or bricks
- Edge restraints

Steps:

1. Evaluate your chosen area of installation with the following guidelines:
 - a. Do not place pavers on permafrost.
 - b. Only roof runoff should be redirected onto permeable pavers.
 - c. Location should not be on or near septic tanks or wellheads.
 - d. Before you dig, be aware of underground service lines or utilities. Call 1-800-478-3121 or go online at www.akonecall.com to have the underground lines marked.
2. Prepare area. If there is an existing surface already remove pavement, pavers, or turf and excavate down one foot deep.
3. Compact the soil with either a hand tamp or a mechanical compactor. Using a hand tamp is not recommended for large areas.
4. Deposit a six inch (minimum) layer of gravel or sand as a base.
5. Lay down a layer of geotextile fabric to keep the sand in place and to prevent weeds from growing.
6. Deposit a one inch layer of bedding sand on top of fabric.
7. Install the edge restraints. Place the restraints along the perimeter of the project. These can be plastic, aluminum, or steel and are available at most hardware stores.
8. Install the permeable pavers with design of your choice.
9. Fill the joints by sweeping coarse sand or pea gravel over the pavers. Or plant moss or grass between the pavers.
10. Compact the pavers with a hand tamp for small areas and a mechanical compactor for large areas.
11. Spray the paved area with water to help compact the sand.

Pros:

- Reduces water runoff.
- Increases groundwater infiltration.

Cons:

- Some pavers are sensitive to deformation in the base or sub-grade and do require a thick base to prevent "heaving."

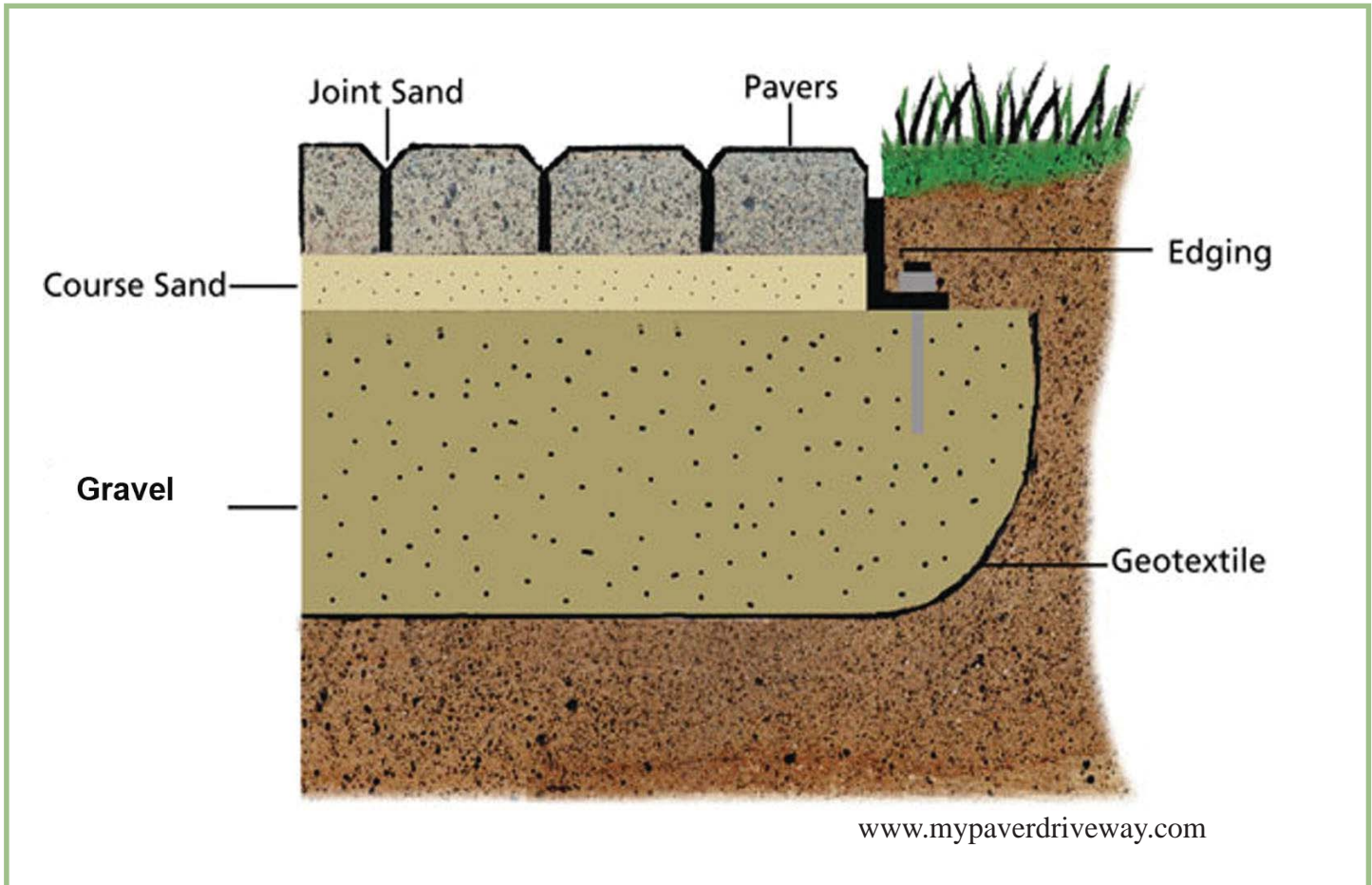
Tools:

- Hand tamp or mechanical compactor
- Shovel
- Excavator (optional)
- Hose
- Push broom
- Level



Maintenance:

- Over several years some of the joint sand may erode away. If it does, just spread more joint sand over the pavers and sweep it in.
- Weeding may be necessary throughout the summer to prevent weeds from growing in the cracks between the pavers.
- If the pavers become uneven you can remove the pavers in the affected area, re-level the aggregate base (you may need to add more sand) and reinstall the pavers.
- Sweep the pavers at least every spring to remove dirt and sand, which will prevent the loss of porosity of the pavers.



For more information about this and other Green Infrastructure Projects please visit:

www.fairbanksgig.com

Sources:

Interlocking Concrete Pavement Institute

<http://www.icpi.org/>

Low Impact Development Center, Inc., Permeable Pavers

http://www.lid-stormwater.net/permpavers_benefits.htm

Natural Resources Defense Council

<http://www.nrdc.org/thisgreenlife/1106.asp>

Tree People

<http://www.treepeople.org/install-permeable-surfaces>

