

Public Workshop

Homeowners & Stormwater

Permeable Pavement

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Disclaimers

1. Neither I nor Carroll County Government endorse any product, supplier, or contractor.
2. Porous Pavement is not a “silver bullet” or magical cure for stormwater management problems. (*If anyone tells you that it is, don't believe them!!*)

What is Permeable Pavement?

- **Permeable paving** is a range of sustainable materials and techniques for **permeable pavements** with a base and subbase that allow the movement of stormwater through the **surface**. (*Wikipedia*)

Benefits of Permeable Pavement

- Mimics the natural process that occurs on the ground's surface, reducing runoff and returning water to underground aquifers (*Green Building Alliance*)
- Uses:
 - low-volume pavements
 - residential roads and driveways
 - sidewalks
 - parking lots
 - patios
 - swimming pool decks

Pavers

Pavers

Advantages

- Can be removed and reset to remove fine materials and clean/replace stone reservoir.
- Closed pavers are safer for women in heels.
- Base material does not wash out.

Potential Issues

- Placed by hand.
- Can shift (need adequate base stone).
- Open pavers can be a hazard for small or high heels (ex. “Grimpler” or “Grass Pavers”).
- Material can wash out.

Open Pavers

(Grimpler Realty)



(Grass Pavers)

**Notice size of
openings
filled to
surface with
small (No. 8)
stone**

Steven Decatur High School

Porous Paver Stormwater Management



- **No Exposed Stone**
- **Water Goes In Through Joints**

Smalls Nursery Pave Drain Pavers



Standard Asphalt

Pave Drain Pavers

Eco Venetian (Stone Look)



Eco Enviro (Brick Look)





Drained immediately after soaking

Christopher Newport College

Plastic Pavers With Stone Fill



**No. 8 Stone
Washout**

Plastic Pavers With Stone Fill

West of Thurmont – Frederick County



**Concentrated
Flow**

Porous Concrete & Asphalt

*(Normally used at large scale, but could
be used for residential areas)*

Porous Concrete (Large Scale)



Porous Asphalt (Foundry Road)



Parking spots are porous asphalt & are dry

Drive aisle is standard asphalt & is wet

Porous concrete is designed to pass up to 8 inches of rain without pooling on surface



Duplicating the most intense 5 minutes of a hurricane



5 minutes later

Miller Porous Asphalt



Stone Base

- To avoid restricting flow through concrete and to provide necessary storage, stone base must be as porous as the concrete. Use 1/4- to 3/4-inch stone with no fines.
- Determining and preserving infiltration rate of soil in cut area is one of keys to success.
- Do not need to compact the ground with a 12" stone base.

*If someone asks you to allow **crusher run base** material, **do not** agree to it. It will not allow the runoff to pass through. You might as well use ordinary concrete or black top.*



No. 57 Stone Base

Longevity

Will it come apart with use or clog up and stop working?

Manchester Valley 2011

Note
Sediment
Deposit
From
Pervious
Run-On



Maintenance

- Carroll County performs triennial inspections (every 3 years).
- Is cleaning once every 3 years enough? *No! They must be swept with a regenerative vacuum at least yearly.*
- Once clogged, what do you do? *There is a proposed code change to require at least a yearly vacuuming, with reports submitted to the County.*

**Yearly Maintenance =
1 Truck at 1 Acre Per Hour @ \$200/Hour**



Previous Problems With Porous Asphalt

- Comes apart under use (popcorn mix).
- Stone in the asphalt moves (compacts) under use in hot weather, seals up and stops allowing water through.

*C.J. Miller appears to have solved these problems.
We have approved the first installation of porous
asphalt in Carroll County.*

Contact

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