Public Workshop Homeowners & Stormwater

Permeable Pavement

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Disclaimers

- 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

<u>Advantages</u>

- 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)





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



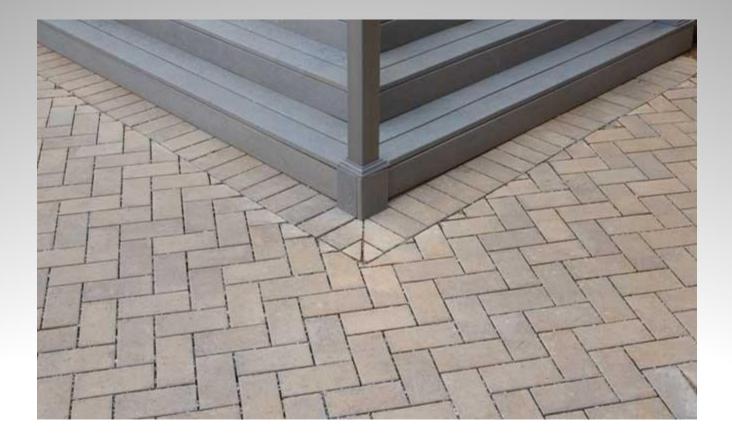
Pave Drain Pavers

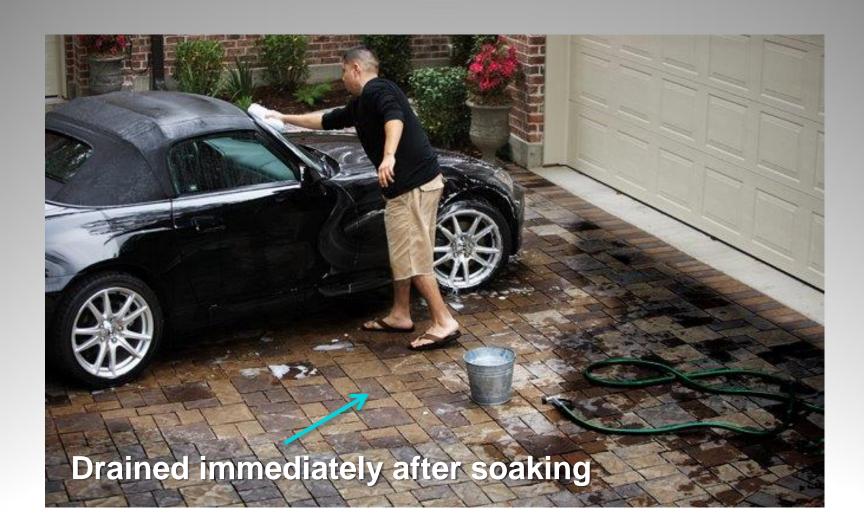
Standard Asphalt

Eco Venetian (Stone Look)



Eco Enviro (Brick Look)





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)



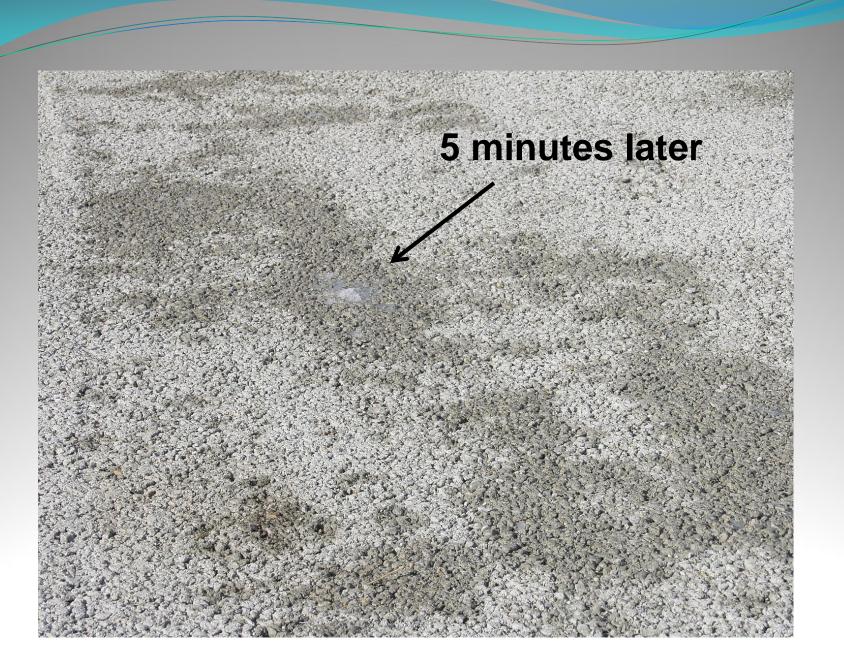
Parking spots are porous asphalt & are dry

Drive isle is standard asphalt & is wet

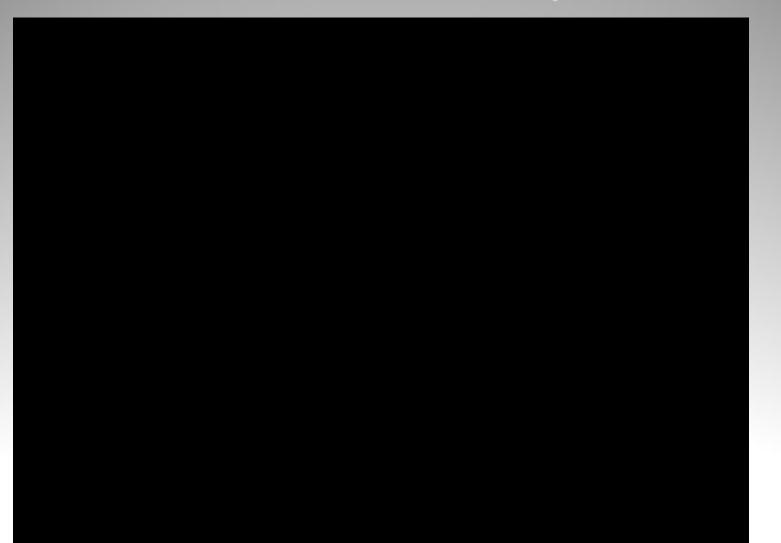
Porous concrete is designed to pass up to 8 inches of rain without pooling on surface



Duplicating the most intense 5 minutes of a hurricane



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



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



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.



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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