



Porous Asphalt Background

•Porous asphalt was developed in the 1970's at the Franklin Institute in Pennsylvania to address storm sewer issues and replenish aquifers

•Literally hundreds of porous installations over 20 years old that are still functioning

 It is used for parking areas, walk paths, playgrounds, and some heavy duty applications

 Porous asphalt is more than the asphalt mix, it is a SYSTEM





Consider Porous Asphalt because...

- Reduces impervious areas and recharges the groundwater
 Reduces the need for expensive detention basins, which saves valuable land
- Prevent concentration of pollutants from runoff areas
- Earn LEED (Leadership in Energy and Environmental Design) credits And can save valuable time and money on construction
- WHO LIKES SAVING TIME AND MONEY?



A St. Louis Example of Savings: MSD (Metropolitan Sewer District) Stormwater Runoff Fees

 Porous asphalt is particularly attractive to developers and land owners who are paying a monthly storm water runoff fee

•MSD charges a fee based on the amount of impervious area

•Rate was \$ 0.14 / 100 SF and set to reach \$ 0.29 / 100 SF by 2014

* When using porous asphalt as an application, the contractor must certify with MSD once the porous project is complete

Construction Savings...

Porous pavement can reduce retention chambers and water quality devices which means....

Construction Savings...

...eliminating expensive, complicated pipe systems...





Construction Savings...

...and above ground retention areas...



Environmental Savings

Helps to alleviate flooding...













Porous Asphalt as a "System"

Our Typical Porous Asphalt Design:

50-60% 5/8 clean trap rock 40-60% 3/4 clean limestone Minimum of 6.0% total AC (PG76-22 polymer modified for our region) <u>Minimum of 6% recycled asphalt shingles</u>

WHY SHINGLES???

Steps in Porous Construction





Critical Porous Construction Points

Soil permeability testing

•Pre-construction meeting

•Keep heavy equipment OFF the subgrade

•Roll fabric out by hand

•Back dump clean stone

•Protect the recharge bed!



Critical Porous Construction Points

Push rock in over the fabric with a lightweight piece of equipment – preferably track skidsteer – careful not to contaminate the rock with construction traffic debris

 Roll asphalt with a 10 ton static drum roller – NO vibratory action. The number of passes will vary depending on heat, generally 3 passes with a 10 ton roller, can finish with smaller roller.

 Design should include overflow drainage to remove excess storm water -perforated pipe placed in the stone bed will distribute runoff evenly.





General Maintenance

It is recommended you vacuum sweep porous asphalt twice per year



- DO NOT SEAL COAT
- Warn maintenance and landscaping forces not to stockpile on porous surface
- Warn snow plows to lift the blade about an inch, and not to pile snow on the porous surface
- Place signage warning maintenance forces not to seal, sand, or resurface

Winter Weather Maintenance

- With porous asphalt, there is actually less snow plowing than conventional parking lots
- The underlying stone bed absorbs and retains heat -freezing rain and snow melt faster
- Water drains through the pavement and into the bed below with sufficient voids to prevent any heaving and damage

•Do not sand – salt is okay, but you should see a significant decrease in the amount needed





Marketing Porous Asphalt... Most Importantly,

DISPELL POROUS MYTHS:

- Porous asphalt is more expensive
- Porous asphalt will not withstand freeze/thaw cycles
- Porous cannot handle heavy vehicle traffic
- Porous asphalt will not last as long as traditional mix

 Hydrocarbons will leach out of the asphalt and contaminate the groundwater

Marketing Porous Asphalt...

- Join your local US Green Building Council
 Affiliate
- Provide Lunch and Learns for Engineering and Design firms and Local Municipalities
- Learn how stormwater runoff is handled in your market.

Offer real life examples from your area & offer field trip opportunities







Porous in Real Life...

Scott Air Force Base

•Parking lot for new Security Forces Building at Scott AFB

Lot size approximately
60 ft X 400 ft

 Recharge bed – 18 in deep

•500 ton of porous asphalt, 4 in deep, placed in two lifts











Porous in Real Life...

Scott Air Force Base





Paving Day 1 May 2010





Helpful Porous References

- Hotmix.org (National Asphalt Pavement Assoc.)
- (Insert Your State Here) Asphalt Pavement Association
- CH2M Hill Global engineering firm
- Pavegreen.com
- Stormh2o.com



