Evaluating Permeable Pavement Products

ABOUT SPANCRETE

- Third-generation family owned and operated
- Midwest’s largest provider of precast building solutions
  - Expansion into Southeast started in 2007
- Known for High Quality, Award Winning Designs for over 65 Years
- Extensive Design-Build and Building Information Modeling experience
- Expert in All Market Segments and Building Types with over 20,000 projects completed to date
- Over 425 employees
- Two divisions
  - Precast Services
  - Global Services

Global Headquarters – Waukesha, WI
The leading global provider of precast concrete solutions that extend far beyond just equipment and product output. Spancrete Global Services partners with customers to provide comprehensive solutions including equipment systems, complete turnkey plant solutions, launch and operational support, training and ongoing services as well as research and development and engineering expertise.
MARKET SEGMENTS

- Commercial/Industrial
- Assisted Living/Medical
- Parking Decks
- Education/Dormitory
- Food sector
- Military/Government
- Lodging
- Bridges/Transportation
- Stadiums/Sports Arenas
- Single & Multi-Family Residential
Next Generation of Permeable Pavement

RePlenish™
Precast Permeable Pavement Panels

15% Voids
25% Voids

OVERVIEW
- Purpose
- Surface Product Options
- System Pro’s and Con’s
- Below Grade System
- Life Cycle Costs
- Applications
- Funding
PRODUCT OPTIONS

- Paver Joint Systems
- Poured-In-Place
- Precast Permeable

Areas to watch:
- Subbase Installation & Care
- Impact of Organic Material
- Winter Maintenance
- On-going Maintenance

Benefits:
- LEED Credits
- Contaminant Removal
- Some level of stormwater capture
PRODUCT OPTIONS: PAVER JOINT SYSTEMS

Areas to watch:
- Maintenance Practices
- Amount of Maintenance
- Annual Joint Replacement
- Void Size
- Infiltration Rate
- ADA / Uneven Surfaces

Benefits:
- Durability
- Freeze Thaw of Product
- Flexible Installation
- Immediate Use

PRODUCT OPTIONS: POURRED IN PLACE

Areas to watch:
- Durability = Cure Time + Environmental Conditions
- Voids
- Freeze Thaw
- Ecological Value
- Travel time of material
- Maintenance

Benefits:
- Infiltration Rate
- Permeable across system
- Cost
PRODUCT OPTIONS: SPANCRETE REPLENISH PRECAST PERMEABLE PANEL

Areas to watch:
- Only straight shot applications (No curve options)

Benefits:
- Durability
- Freeze Thaw
- High Infiltration Rate
- Variable product voids
- Permeable across product
- Used in run-on and complete system applications
- Flexible maintenance and cleaning options

BASIC SYSTEM
APPLICATION STRATEGY

Complete System

Run-on, Drain or Partial System

KEY FACTORS

Durability

Performance

Maintenance
LIFE CYCLE COSTS

What are you getting?

Product & Installation Costs?

Maintenance Requirements?

Cost

Performance

Durability

Maintenance

How long will the system last?

Product Performance Comparison?

Product & Installation Costs?
WHAT ARE YOU GETTING?

Pavement

VS.

Flood Management?

+ Stormwater Management?

+ Contaminant Removal?

+ Pavement

PRODUCT & INSTALLATION COSTS

- Life Cycle Costs

- Product Costs vs. Storage Costs
PRODUCT PERFORMANCE

Infiltration Rate
- Higher the Better
- Permeable Surface vs. Joints
- Void Ratios vs. Durability

HOW LONG WILL THE SYSTEM LAST?

Durability
- Factory vs. Field
- Joint Material Replacement
- Resurfacing

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MAINTENANCE

Maintenance Factors:
- Site Strategy – Complete vs. Drain Application
- Surface Use
- Cleaning Frequency
- Equipment Options

MAINTENANCE EQUIPMENT

Key Factors:
- Ease of cleaning for client
- Cleaning Equipment Options
- Purchase special equipment
- Impact on joint material or product surface

Cleaning Equipment Options:
- Sweeping / Collection
- Vacuum Street Sweepers
- Litter Vacuum
- Power Washing
MAINTENANCE FACTORS

- Impact of organic material
- Use of deicing products (Preferred: Sodium Chloride and Calcium Magnesium)
- Snow cover removal (Preferred: Plastic Tip Plow)
- Uneven Surfaces

SNOW AND ICE MELT

Iowa University Study of Permeable Concrete

- Aggregate base provides insulation
- Delays the formation of a frost layer
- Permeability is restored when meltwater is present
- Hotter than traditional concrete in direct sunlight
- Less heat storage capacity in the pervious concrete.
APPLICATIONS

- Stormwater Strategies
- Flood Conditions
- Urban and Redevelopment Areas
- Infrastructure Alternatives
- Complimentary stormwater practices
VS. STORMWATER PONDS

Evaluating Ponds vs. Permeable Pavement
- Stormwater Management Costs
- Land Prices
- Efficient use of space
- Liability
- On-going & long term cleaning costs

HIGH VOLUME STORAGE
PARKING LOTS

DRIVEWAYS & ALLEYS
CROSS WALKS & BIKE PATHS

TRANSPORTATION:
HIGHWAY SHOULDERS
TRANSPORTATION:
PARKING LOTS
REST STOPS
TRAVEL PLAZAS

PROTECTING WALL SYSTEMS:
MECHANICALLY STABILIZED EARTH SYSTEMS
RETAINING WALLS
FUNDING SOURCES

EPA’s Great Lakes Shoreline Cities Green Infrastructure Grants

Funds 50% of the cost of green infrastructure projects on public property to reduce urban runoff and sewer overflows

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EPA.gov
Green Infrastructure
- Municipal Grants
  MMSD.com/gi/green-infrastructure

By 2035, install enough green infrastructure in our region to capture 740 million gallons of water every time it rains.

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MMSD.com

Water Quality Improvement Grants

Grants focus on projects that achieve tangible near-term and long-term results such as protecting critical natural habitats and making water resources more swimmable, fishable and drinkable.

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Thank You

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