Porous Pavement & the Stormcrete™ Modular Precast Porous Concrete System

FLORIDA STORMWATER ASSOCIATION
Emerging Technologies – 6/15/17
Benefits of Porous Pavement

- Lessens the impact on existing storm or combined sewers
- Greater base-flow in streams and rivers
- Provides natural filtration through soils of TSS, Nutrients, Heavy Metals and other pollutants.
- Higher coefficient of friction means safer stopping
- More closely mimicking the natural hydrologic responses to a rainfall events
- Reduces the Heat Island effect common to conventional pavement
The Pre-Stormcrete® Porous Pavement Market

Permeable Interlocking Concrete Pavers

Pervious Concrete

Porous Asphalt

When it Rains...it's Porous™
Plugging Issues due to “run-on”
Durability Issues
Bad Batch
Vote of no confidence shown by the engineer
Negative *Perceptions* of Porous pavement in the Marketplace

- Durability
- Installation is labor-intensive
- Inconsistency in mix from batch to batch
- Difficult to produce
- Weather dependent (can’t install when too cold/hot)
- Difficult to maintain and Repair
- No access to subgrade (utilities)

**HIGH RISK!!!**
Introducing Stormcrete®
Modular Precast
Porous Concrete Stormwater System
Each precast porous segment is **REMOVABLE** and **REUSABLE**.
Stormcrete® - Modular Precast Porous Concrete Storm Water System

Green Infrastructure Technology:
- Controls Stormwater Quality and Quantity
- Slabs manufactured, CURED and stored in a controlled environment
- Porous section is removable / maintainable / Reusable
- Provides access to sub-base – utilities, spills, etc.
- Reduced life cycle costs
- Can be installed year-round in almost any type of weather conditions
- Ready to use immediately – pre-cured

LOW RISK!!!
Standard Slab Sizes

5' x 4', 5' x 2.5', 4' x 2.5', 5' x 2'
Stormcrete®
Typically 3 man crew
Modular Precast Porous Slab Sections

**Stormcrete®**

- **Preash Porous Slab**
  - 5"
  - 3/8” stone
  - 2 - 3”
  - Varies *

- **Leveling Course**
  - 3/8” stone
  - 2 - 3”

- **Reservoir Course**
  - 3/4” stone
  - Varies *
  - (6” minimum)

- **Optional Under Drain**
  - (if required by design professional)

- **Infiltration**
  - (if existing conditions permit)

*Depth of Reservoir course varies based on engineered storage/treatment goals.*
Quality Control
tick tick tick....
Stormcrete® Manufacturing
Mixed / Placed / Covered
- +/- 20 minutes in controlled conditions
“The void content can range from 15 to 35%, with typical compressive strengths of 400 to 4000 psi. The drainage rate of pervious concrete pavement will vary with aggregate size and density of the mixture, but will generally fall into the range of 192 to 1724 in./h.”
Target Mix: 125 lbs/ft³
(2,083 lbs.)

This slab is < 1% from theoretical weight. Poured in place specs allow +/- 5% variation.
Each Slab is labeled with cast date and weight (i.e. density)
Applications

Sidewalks
Sidewalk
UTC Farmington, CT

Stormcrete™
Modular Precast
Porous Concrete

Standard Pavers (impervious)
Applications

Green Alleys
Green Alley – Lowell, MA

Conventional Concrete (impervious)

Stormcrete®

Conventional Concrete (impervious)
Shallow Depth Installations
Applications

Gutters
Portland Marine Terminal
Stormcrete®
Porous Concrete Gutter System
Take Exit 61 off the 101. Head northeast on N. Rose Ave. Turn left onto Simon Way to the job site.

Existing Conditions Before Stormcrete®
Stormcrete® Gutter System
Washington DC DOT
River Smart Demonstration Project

Stormcrete™
Modular Precast Porous Concrete Gutter System
Applications

Pedestrian Plazas – SUNY Albany
Pedestrian Plaza
SUNY - Albany
Stormcrete™
Modular Porous Concrete