

Soil Pak- 250 Benefits



- **Environmental Friendly** Solution
 - Biodegradable with 20 days
 - Spills- Cleanup with fresh water
- **Low Cost** alternative to conventional Soil Cementing & Stabilization Techniques
 - Higher Compressive strength
 - No hazardous chemical impact
- **Process utilizes conventional construction equipment**
- **Utilizes materials on site** -reducing material & transport costs
- **Time saving process**
- **Durability**-Reduce scheduled rework cycles

SoilPak-250 Handling Safety

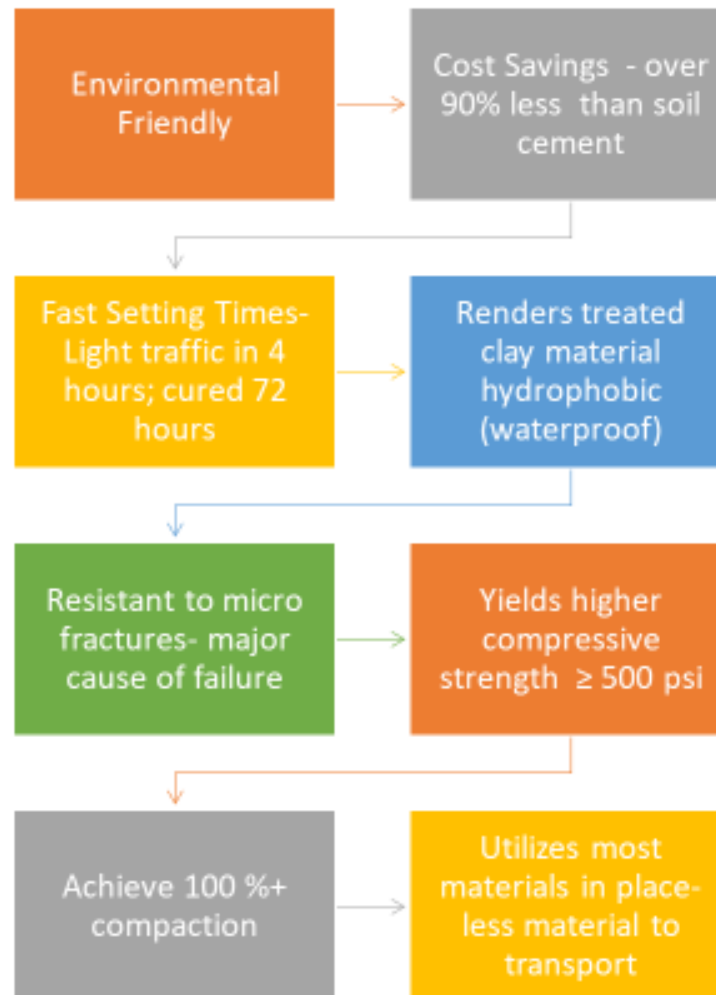


HMIS Rating

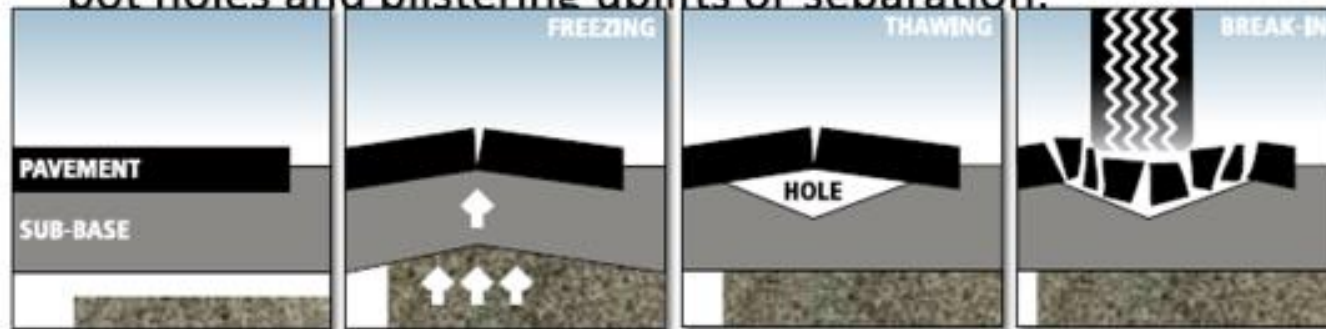
Health:	1
Flammability:	1
Reactivity:	0
Personal Protection:	B

Container Packaging: 5 Gallon Buckets, 265 Gal IBC Tote, Bulk Tank

SoilPak-250 Advantages

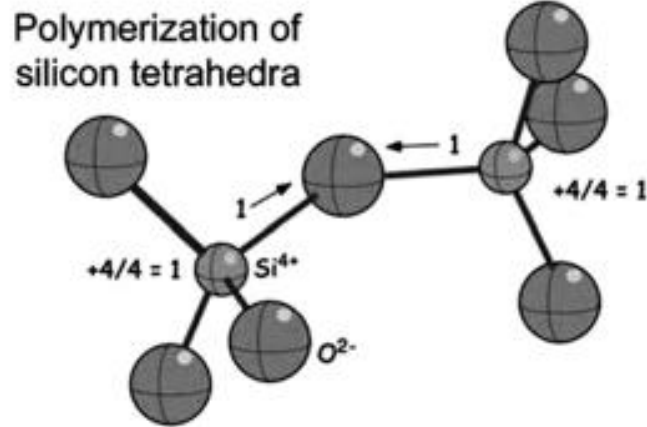


- Laboratory testing with **Soil Chem Road Material** has demonstrated unprecedented results and will undergo third party CBR Testing and certification. Which measures the strength and load bearing capacity of a road after it has been submerged under water for 96 hours, which simulates a road submerged in a flood for 4 days. The ASHTO and ASTM testing standards determine this to be the most severe conditions a road should have to endure.
- Because the material provides a water resistant barrier under proper compaction and application it's not effected freeze and thaw cycles that can damage the roads causing pot holes and blistering uplifts or separation.



SoilChem Road Material

This material dissolves silicon and aluminum ions and the neighboring silicon and aluminum hydroxide molecules, which then undergo a condensation reaction. This reaction causes the “monomers” and other silicon and aluminum hydroxide molecules to poly-condense or polymerize, to form rigid chains or nets of oxygen bonded tetrahedral. The physical properties of the soil can often approach and sometimes even exceed the structural strength of concrete.





Compressive Strength of Moulded Soil-Cement Cylinders, ASTM D 1633 Method A
 (Unconfined Compressive Strength of Compacted Soil-Cement Mixtures, ASTM D 5102 Procedure B)

Project Information
 Project: SoilChem General File 2017
 Client/Arch. Firm: SoilChem, Rayville, LA
 Project Location / Contractor: not given
 ETL Job No: C-9026-111

Sample Information
 Sample Location / Boring No: not given
 Sample No: **Treated** Depth: ft.
 Material Origin: not given
 Sampling Info. provided by: Client
 Material Description: **Light Brown Moulded Treated Sample, 5/22/2017 delivery**
 Sampled By: Client
 Technician: H. Statler
 Sample Date: 5/22/2017
 Test Date: 5/22/2017

Test Data

Percent Contact Area	NA
Per-Net Hydraulic Load Applied	NA
Per-Net Gross Load Applied	NA
Per-Net Area	NA
Working Method	
Hydraulic Method Control	
Manually Applied	psi
Moulded Method Control	
Moulded Control	psi
Shrinkage Before Control	psi
Fracture Before Control	psi
MO Ratio Before Control	
Shrinkage After Control	0.87%
Fracture After Control	4.47%
MO Ratio After Control	1.70%
Area After Control	17.47%
MO Coefficient Factor	0.858
Control Load	18.7 lbs
Compression Load	908 lbs
Load Load	7000 lbs
Conf.ing Principle	0.0
Maximum Stress	517.5 psi
Corrected Maximum Stress	519.2 psi
Peak Strain	1.3%
Failure Type	Cylindrical

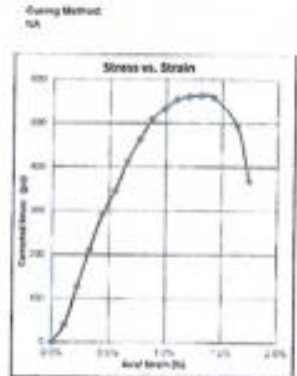


Figure 3. The Compressive Strength of Sample No. 3 (Cured for 7 days)

Soil Sample - Test Results

Lafayette Area Sand Pit

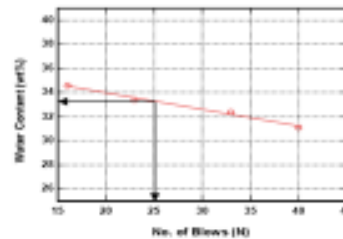


Soil Sample Information

- Company Name:
- Report No.: SC1164
- Sample Location: North
- Sample Delivery Date: 03/26/2019
- Report Date: 03/23/2019

Soil Tests

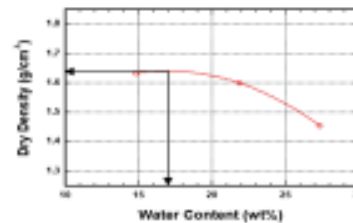
1) Atterberg Limits



- Liquid Limit: 33.2
- Plastic Limit: 21.57
- Plasticity Index: 11.63
- Description: Plastic soil (SoilChem SoilPak-250 Applicable)

Test Method: ASTM D 4318 (Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils)

2) Moisture-Density Relation (Compaction) Test



Water Content (wt%)	Dry Density (g/cm³)
14.85	1.633
21.89	1.599
27.31	1.456

- Optimum Water Content: 17.0 wt%
- Maximum Dry Density: 1.64 g/cm³
- Description:

Soil-Pak-250

Typical Physical Properties

- Appearance: Brown
- Physical State: Liquid
- Odor: Sweet
- Specific Gravity: 1.07
- Weight per Gallon: 10.4
- Solubility in Water: Soluble
- Ph: 3-6
- Boiling Point: > 212°F



SoilPak-250 Process



- Enzyme is a catalyst which accelerates the ionic bonding to clay particles creating an immediate bond
- Modifies the surface charge and structure of clays rendering them hydrophobic (waterproof)
- Reduces Plasticity & Permeability
- Plentiful ionic bonds continue between SoilPak-250 and soil elements to create a rock hard road
- Improves the ability to compact soils to full compaction state

Soil Stabilization Systems Applications

- Municipal Roads
- Haul Roads
- Logging Roads
- Mining Roads
- Parking Lots
- Drilling Site Pads
- Lease Access Roads
- Service Yards
- Pipe Yards
- Containment Ponds
- Railroad Lines



Application of

 *SoilChem Road Material*

It can provide not only a solid road base eliminating the need for gravel and other expensive materials, but it can provide great dust control and eliminate wash boarding and continuous maintenance.



The preferred application depends on the traffic volume and required load rating. Just as with cement the depth or thickness of the application can be adjusted to fit the specific application. Heavy industrial usage requires 12" of treatment while residential application may only require 4" to 6" of treatment.



Laboratory testing revealed that the best performance is achieved at a mix ratio of 1 part **Soil Chem Road Material** to 1 part water and applied at a rate of .6 gallons per yard to a depth of 12". Following deep stabilization, the solution is sprayed topically at a rate of .2 gallons per yard and then compacted to a 90% compaction using a sheep foot and rollers.

