

## WHAT WE DO

Soil Scientific is the manufacturer of Clay Set, a hydrogen ionic soil stabilization option for expansive clay. Clay Set offers an effective, permanent and money saving solution that is changing the clay stabilization world and is gaining acceptance as a new standard practice when dealing with expansive clay.

## WHO WE ARE

### INTEGRITY SERVICE INNOVATION

Soil Scientific is a woman owned business that was founded by Pamela Degenhardt Langan who has been a specialist in ionic stabilization of clay soils for two decades. Pamela has been instrumental in developing this technology and the methodologies that are making ionic stabilization a viable option in all areas of the U.S. and Canada. We are dedicated to operating with the highest ethical standards, providing excellent products and service and continuing to be an innovator for all soil related issues.



## HOW TO USE CLAY SET

Clay Set treatment can be used on existing structures or as a pre-construction remediation that will allow the use of spread footer and slab on grade foundations.

### PRE CONSTRUCTION MIXING

In areas where the clay is very stiff clay or claystone is present, over excavation is required to assure a thorough treatment. Soil is removed to the depth of treatment and replaced in lifts. Clay Set is applied to each lift then thoroughly mixed into the lift and compacted. The process is repeated until the excavated area is at grade.



### PRE CONSTRUCTION LARGE RIG INJECTION

Where the soil is less stiff, Clay Set treatment can be done using large injection rigs. Each rig can treat approximately 10,000 SF a day. Multiple passes over the treatment footprint are completed based on specific soil condition at the site.



**NO PRE SWELLING MEANS THAT CHANCES OF SHRINK ARE ALSO GREATLY REDUCED AND YOU CAN USE CLAY SET TO TREAT EXISTING STRUCTURES**

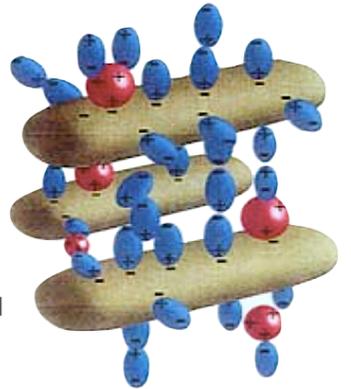


### EXISTING STRUCTURES

If an existing structure is moving, Clay Set is a minimally invasive way to stop the movement. Small holes are drilled through the slab and injections are done beneath and/or into the soil around the perimeter of the foundation.

## THE SCIENCE AND WHY IT WORKS

**SIMPLY PUT** ...Clay soil particles attract and bind water because their lattice molecular structure produces a negative charge. Water molecules have polarized positive and negative sides, so when introduced to the clay soil, it's positive side is attracted and the water is adsorbed into the clay soil causing each clay particle to be expanded and also pushed apart, resulting in an overall swelling of the clay soil.



**WHEN SOILS ARE TREATED WITH CLAY SET** the swell potential and soil suction of the clay particles are significantly reduced and strength is increased. Clay Set accomplishes these vitally important goals by reducing the negative internal and external charges naturally found in the clay lattice. This is an irreversible molecular change that provides a reliable and long lasting low swell soil that will not carry water to untreated soils below or around the treatment zone.

## NOT ALL IONIC STABILIZERS ARE THE SAME

PROVEN LONG TERM RESULTS | MOST AFFORDABLE | EXPERT ADVICE

### HOW CLAY SET COMPARES

	Clay Set	Fill	Lime
Permanent molecular treatment	Yes	No	No
Can be used on existing structures	Yes	No	No
Expense	\$	\$\$\$	\$\$\$
Soil disposal site needed	No	Yes	No
Truckloads of soils or materials in/out	No	Yes	Yes
Suitable fill supply needed	No	Yes	No
Causes "Bathtub Effect"	No	Yes	No
Causes sulphate heave	No	No	Yes
Moisture migration is reduced	Yes	No	No
Increases soil strength	Yes	???	Yes

Clay Set helps you solve problems instead of causing them....  
Treating clays permanently, all while reducing overall project costs!

### BETTER FOR THE ENVIRONMENT

- Use of on site soil eliminates export/import of fill or additives, thereby greatly reducing CO2 emissions (and cost)
- No dust pollution issues for public or personnel
- No heavy metals or toxins added to the soil
- No risk of added toxins leaching into groundwater
- Smallest carbon footprint in manufacturing of product
- No landfill space consumed for waste soils



### WHY CHOOSE CLAY SET

- Proven long-term results
- Used by some of the country's largest builders & developers
- Save up to 80%
- Dramatic swell reduction
- No expensive foundations needed after treatment
- Does NOT pre-swell the soil so the potential for shrink is also reduced & excess soil is not an issue
- Strength is increased
- No select fill needed, allows the use of on site soil
- Better for the environment
- Simple application
- Treatment allows for use of "waste" soils for fill
- Provides dust control
- Increased pavement life & reduced maintenance