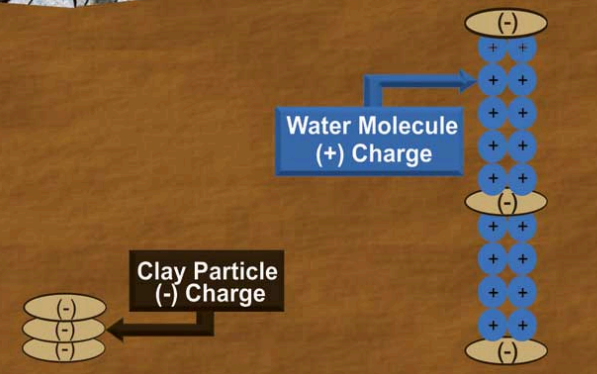
SOIL STABILIZATION

Preserving the life of concrete structures

The expansion potential of ***non-stabilized*** soil

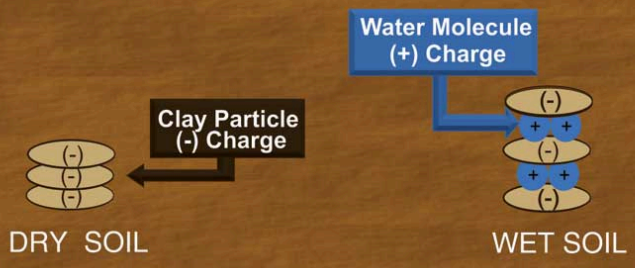
Non-stabilized soil has a high potential to both attract and absorb an almost unlimited amount of water. As water is absorbed, the soil begins to swell or lift; the swell (lift) can be measured in multiple inches of rise which causes concrete structures to lift, crack and break apart.



Images are for illustrative purposes only

The expansion potential of ***stabilized*** soil

Stabilized soil has a very limited potential to both attract and absorb water. As water is introduced to the soil, only a limited amount of swell can occur which in turn limits the swell potential (lift) of the soil to approximately 1 inch.



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What is soil stabilization?

In simple terms soil stabilization, specifically chemical injection, significantly reduces the swell potential of expansive soil (reduces the upward movement.) In more technical terms, soil stabilization is the process of injecting water with a chemical solution into the ground which has a two-part effect on clay filled soil. First, the water pre-swells & helps hydrate the clay as it distributes the chemical solution. Secondly, the chemical solution (an ion-exchanger) changes the clay's electrochemical nature which weakens and minimizes the clay's ability to both attract and bond with water. This is achieved because the clay bonds with the chemical solution in lieu of water (hence the ion exchange). Once stabilized, the soil's Potential Vertical Rise (PVR) or swell potential will be limited to approximately 1 inch.

Please note, a geotechnical swell test is required to verify all soil swell potential.

Why is soil stabilization important?

The soil in many areas of Texas contains high percentages of clay, a type of soil that is capable of absorbing an almost endless amount of water causing extreme swelling of the ground. **Clay filled soils can potentially swell in multiple inches (4”-6”+).** Concrete structures such as foundations, pools, decking, and driveways are designed to withstand a limited amount of soil movement but problems arise when soil movement exceeds the structure's design limits.

Will my concrete never crack?

Concrete can crack for reasons other than ground movement. Soil stabilization does not guarantee that concrete will never crack since there is still a limited amount of potential soil movement. Cracks caused by soil movement, after stabilization, are typically limited to hairline cracks.

What effect does soil stabilization have on plants & animals?

The chemical solution used in soil stabilization will increase the acidity of the soil which some plants do not tolerate as well, but in general it is has little to no effect on most vegetation. Please consult a landscape professional if you have additional questions regarding soil acidity and plant life. We do not perform soil PH testing. Concrete will be covering a majority of the soil that has been stabilized.

Prior to injection, the water/chemical solution **will not** cause harm on contact to skin and is only slightly more acidic than white vinegar. Water refusal, the water that comes back up out of the ground during soil injections, is only slightly more acidic than coffee. To be safe, it is not recommended that pets or animals drink any run-off.

Soil stabilization does not prevent or protect against erosion,
movement caused by tree roots, or settling (shrinkage) of the soil.