

Maintenance Tips

News for Engineers and Maintenance Professionals



Spring 2008

Get Beneath Surface Problems and Save \$

Settling of road and concrete surfaces caused by erosion, poor compaction, or subsurface pipe leaks is very common. Much of it is evidenced by surface cracking in both asphalt and concrete pavements.

Although we do our best to prevent surface defects, if left unattended, they can evolve into critical maintenance issues that demand immediate attention.

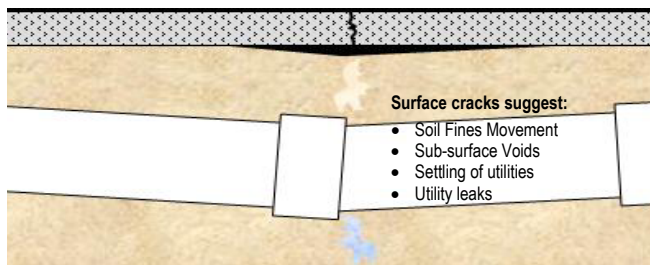


Fig. 1 – Subgrade soil problems are often hard to detect on the surface.



Now, early detection of sub-grade soil movement can save both time and money in repairs due to modern techniques of soil re-densification, leak mitigation, and pavement stabilization.

We are often so busy fixing immediate problems we find it impossible to schedule preventative inspections, and our inventory of future problems grows and grows.

More on reverse side...

UDI Polymers vs. Cementitious Grout How to Determine the Best Choice

It's been 20 years since the new breed of polyurethanes were introduced into industry for lifting and stabilizing concrete and pavements.

Before that, the only solution was to pump cementitious grout under the surface. **But which material offers the best solution?**

In the past, many maintenance managers made a choice by comparing the raw cost between the two technologies (Polymer costs more per cubic foot than gravel, sand, and cement.) Today, engineers know that they can use UDI polymers and save money when they compare total lifecycle costs.

Most engineers prefer polymer. It extends asset life. It is light in weight with good compressive strength. It can divert / displace water below ground. It installs faster, and curing time is short.

Nevertheless, when project bid evaluations do not take into consideration the full lifecycle costs polymer *seems* more expensive, when in most

More on reverse side...



Ready Response Team Lightens Load

Often the most challenging transportation and infrastructure repair problems show up unexpectedly. A water line leak or breakage undermines

a street or roadway. A flash flood causes below-ground soil problems or dangerous slab shifts and pavement differentials.

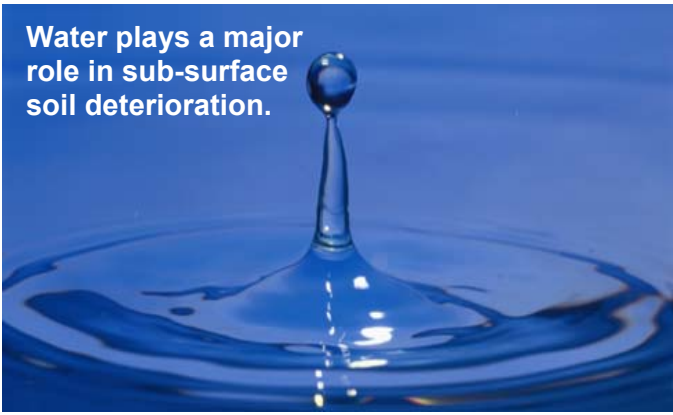
When that occurs, you want to get a repair crew onsite as soon as possible. For over 12 years, CST has been responding to the needs of transportation departments,

More on reverse side...

ACPA Award Given

In January 2008, CST received the prestigious ACPA / UDOT *Excellence in Concrete Pavement* award for pavement restoration of northern Utah's Interstate 84, as a Multiple Concrete Enterprises, Inc. subcontractor.

CST resealed 686,000 SF of pavement slabs, and completed slab lifting and stabilization using over 66,000 cubic feet of its unique polymeric materials.



Water plays a major role in sub-surface soil deterioration.

Detecting Sub-grade Erosion (Con't.)

However, when maintenance teams routinely look for early symptoms of failure, we can save money now and gain greater control over our busy schedules and over our future budgets.

As the illustration on the reverse page shows, water plays a significant role in the deterioration of sub-grade soils. This fact is a key in preventing future infrastructure damage.

Surface cracks, for instance, often tell a much bigger story. If the surface changes are the result of water movement through the soil either from surface cracks or from underground leaks, the residual effect is a reduction in soil density.



Polymer Evaluation (Con't.)

cases it actually saves money, particularly when using the latest UDI specifications. This spec can even provide advantages over rip and replace in terms of longevity.

To determine your best solution, run a comparison spreadsheet that includes all of the related lifecycle costs of your project. When you finish, your decision will be much easier to make.

	<u>Grout</u>	<u>Polymer</u>
Service Life	1-3 Years	10+ Years
Lifecycle Cost	\$1.75 /SqFt /Yr	\$0.75 /SqFt /Yr
Curing Time	1-3 Weeks	90 Minutes
Diverts Water	No	Yes
Raw Viscosity	High (Thick)	Low (Thin)
Speed	Days / Weeks	Hours / Days

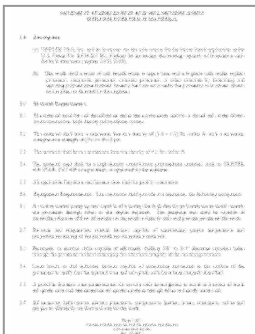
Comparison between Cementitious Grout and Polymer

When Bountiful, Utah city engineers decided to use CST's polymer solution to correct 3 areas of settled pavement, they were happy with the result. They report that the CST solution saved the city over \$38,000 – 67% of their initial estimate!

"We were pleased with the installation process." On this project, they lifted and stabilized road slabs, curb and gutter. The project was completed in only a few days.



New UDI Specification Available



New Polymer Lifting Specification

Engineers now planning projects for 2008 and beyond may wish to review the latest changes in specifications for polyurethane injection material and process.

New generation technology has now replaced the earlier outdated polyurethane lifting process. It extends asset life via added base stabilization.

The new specifications are available through any CST representative. Request UDI Spec. No. 122908. Or email CST@CSTstabilization.com.



Ready Response (Con't.)

counties, cities, and other agencies with the experience and savvy to fix complex problems.

We work with your engineers and consultants to design a long-term solution, or devise a practical quick fix, depending on the situation.

So, take advantage of the ready-response team at CST for all of your concrete and soil stabilization needs.

We bring the latest techniques and materials to your site and complete the work with highly experienced technicians. We are the region's source for the patented UDI Deep Injection® process.



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Concrete Stabilization Technologies is the exclusive provider of Uretex® patented technologies.

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