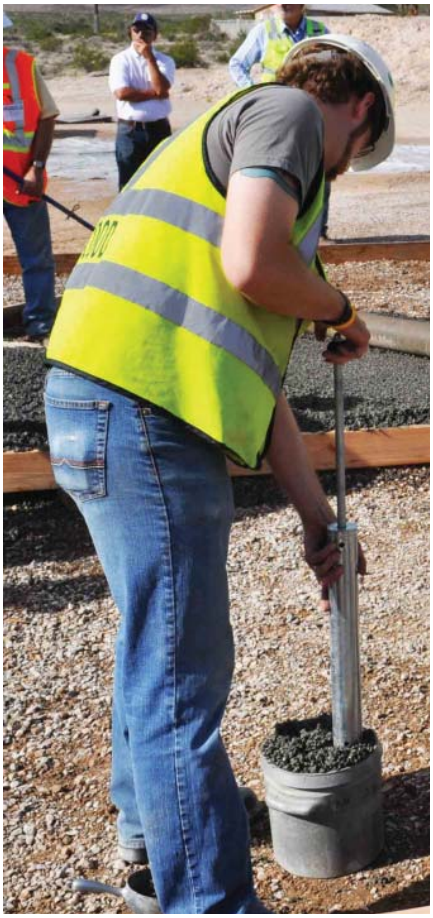


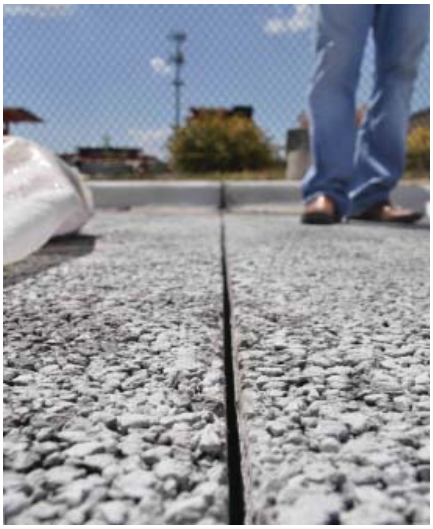
What's Upstream

I want to inspire everyone to be all we can be, and to do epic things. We live in times when so many smart people have developed all known technology, that it is unusual to find a product that is evolving and improving in ways which allow it to claim a new market share. This is the market equivalent of causing a lightning strike. If we do epic things, we can make it have more thunder! I challenge everyone to use our think tank with this thought...rarely do great ideas come from one person. It's a fragment here and there which is built upon, a step at a time. We should try for ourselves what others have done and improve on it.

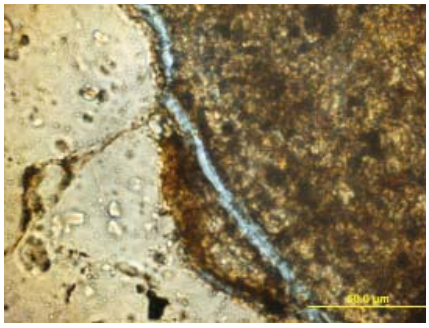
Our goals include a careful study of ways to make stronger pavement and ways to keep it draining well. All of these things are considered, based on their potential cost, the handling logistics of deploying it and side effects, as well as any benefit that results by using it. We initiate work on these subjects to inform people and also to challenge people to try them and bring us report on their experience.

Warrantees for pervious concrete pavement are thought of as fiction or as a bad joke. However, some producers have an entirely different view about a warrantee on their products. Producers like JB Parson and Ozinga have shown that with the proper testing and a well executed plan for construction, operation and maintenance, a warrantee is possible. This degree of confidence makes a powerful statement to those potential owners of pervious pavement. To offer a warrantee or even to remain legally defendable, we must understand the new advancements in pervious concrete. Regardless of your viewpoint, it behooves us to be hip.

Testing is mostly based on density. This has historically been difficult to measure consistently and even more difficult to predict for a given mix design. The proper use of the ASTM C-1688 will give unit weight. But, it says much more about a mixture because it correlates with moisture content, hardened void content and the infiltration of the finished pavement.



Admixture is always a popular subject for pervious concrete performance, and some are considered a mainstay, like hydration stabilizing admixture (HSA). HSA will alter the critical processes and performance will vary in response to other components of the mix. I hope to know more about why pervious mixtures seem to require uncommonly high doses of HSA, in relation to their performance in conventional concrete mixtures. We want to know more about the differences in different brands of HSA and better guides for their use with other variables.



Self Cure has great potential in successful curing and reducing the requirement for traditional curing methods. Self Curing Admixtures and curing products that are used in topical application are both interesting on this front.

Pozzolan is sometimes used to replace cement. Slag and fly ash will require different handling and curing requirements and we are often trying to maximize these items for green reasons. We see great potential in the use of silica fume and densifiers for added durability, especially in freezing conditions.

Freezing conditions and deicing salts are a great risk to pervious concrete. Entrained air is considered and compared to features of permeability reducing admixtures (PRA) which increase the density of the paste. We need more experience with high density paste, to be sure.

Equipment that is used to apply compactive forces to the slab surface are studied closely. Among the various ways this is done, we have attempted to evaluate these and measure them. I have used every opportunity to share my own views about the ways a motorized roller screed will affect surface compaction in various mixtures and equipment configurations. I have used a mortar penetrometer to measure surface density, immediately following the strike. We have used the same method to evaluate the effects of various tooling, including weighted fresno, cross rollers, manual steel troweled finish and most importantly, the motorized pan floated finish. We want to find more ways to control and measure compaction at the surface.

Extraction is used to restore permeability using high performance vacuum equipment if in fact, the pavement was draining properly when it was built. We first teach ways that are more economical for the pavement owner to avoid the need for extraction. Many ways are used to sustain the permeability of this pavement, starting with a mixture of sufficient voids and a system designed to minimize clogging sources. Continue with a well planned operation and maintenance plan that includes proactive, timely and economical means to deal with clogging materials. Identify the sources of silted inflow, airborne particulate, erosion and tracking. We invite everyone with any solutions in these functions. We have shown various dry and wet vacuum processes. But, we always need more answers on sustaining permeability.

Grouted Surfaces are used to toughen the edges and joints. Moderate amounts of grout may be applied to colorize the surface and stencil logo patterns. The term, grouted surfaces refers to grout applied to the fresh, plastic stage of the initial placement.

Stamping, exposed aggregate and colorized surfaces are also interesting. But, we are watching closely for any issues where decorative work might affect durability.

We would prefer to avoid the need for repairs. But, reality speaks and repairs are needed for a variety of surface defects. Repair methods and materials range from small, thin repairs to large milled overlays.

Bunyan Springs

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