

Full-Depth Reclamation

With Cement

Demands for Accountability

Confronted with difficult economic conditions, citizens today demand better and more effective use of their tax dollars. Today, local government agencies face the difficult task of maintaining and repairing failing pavement structures with very limited funds. When utilizing funds, the agencies must search out the most cost-effective solutions using available resources and meeting the demands of Life Cycle Cost and Life Cycle Assessment.



When a pavement failure occurs due to a failed base, simple patching and overlay is not an option. Resurfacing a roadway or runway with a failed base is a highly inefficient use of time and precious money. History has shown that covering up a problem that is not fully repaired is problematic and unsatisfactory because failures will soon reappear. For this reason, government agencies need to find alternatives to the standard method of operation.

Benefits of Full-Depth Reclamation with Cement



Recently, many government agencies and their engineering consultants have turned to Full-Depth Reclamation (FDR) with Cement. Agencies can rebuild an entire pavement section in a matter of days, avoiding the guesswork of expensive full-depth patching. The entire pavement section can be rebuilt for relatively the same investment dollars spent on patching in numerous locations. Agencies are able to create strong and consistent bases that the original pavement structure lacked. According to a 20-year research study performed by the Portland Cement Association (PCA), roads reconstructed using the FDR process have a life expectancy up to three times that of non-treated roads.

FDR with Cement makes the reconstruction process of pavements largely self-sustaining. The existing asphalt and base materials are pulverized in place, mixed with cement and water, and compacted to produce a durable base for an asphalt or concrete surface. This green process saves time, money, virgin construction materials, minimizes waste of materials from the original pavement structure, diminishes construction traffic, reduces hauling between quarries and the project site, thus saving fuel and preventing deterioration of the local roads.

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Local Airports Weigh the Benefits of FDR



Today many airports around the country are taking a closer look at the Full-Depth Reclamation (FDR) process as they too are competing for limited funds. If the funds are attained, each facility must spend the money wisely as they attempt to maximize the investment. This is a time when the agencies must look for the most cost-effective solution for the overstressed, under-maintained and many times, under-designed pavements.

Montgomery County Airport Utilizes FDR with Cement

At the Montgomery County Airport in North Carolina, the Airport Commission received needed funding for airport improvements. The lack of maintenance funds and poor conditions on its runway made it one of the worst runways in the state. Many of the PCI numbers for the runway were in the below 55 or poor category, a condition where lower cost pavement preservation strategies are no longer cost effective, and therefore, the FDR process becomes a viable option.



One of the project's goals was to give the citizens an airport that would handle the needs of the community for many years to come. With the poor runway conditions and inconsistent, low PCI numbers, it was decided FDR with Cement at the depth of ten inches would be the best means to rebuild this troubled runway. The project began June 2012 with Site Prep Inc performing the FDR work. The FDR process went smoothly; APAC Inc followed with the placement of FAA P-401 asphalt. To date, this is the largest North Carolina airport project utilizing the FDR technology.

"Considering our limited budget, we have been looking for ways to stretch our resources with a life cycle mentality," stated Dion Viventi, Project Manager of North Carolina DOT – Division of Aviation. "We were confident in the consultant's recommendation since they had specified this process previously at other airports with successful results. We were pleased with the number of prospective contractors at the pre-bid meeting; it showed us the FDR method had evolved where contractors felt comfortable to compete for these types of aviation projects."