

Full Depth Reclamation with Cement Slurry

Concrete Results

The Challenge

Across the country, thousands of miles of federal, state, county, and city roads are rapidly deteriorating and are in need of immediate rehabilitation. Ruts, potholes, and severe cracking are the most common problems in failing flexible pavements that are usually maintained with additional asphalt patches and thin overlays. These problems are often the result of a failed or inadequate base course. Properly fixing these base problems is important to ensure long-lasting pavement rehabilitation.

The Solution

Salvaging these existing, failed flexible pavements is a good practice, both economically and environmentally, because they still contain good granular material that can be reused and recycled into a strong, durable new base. A process known as Full-Depth Reclamation (FDR) is a technique in which the existing asphalt pavement and a portion of the underlying base materials are pulverized and blended together with Portland cement to create an enhanced roadway base material.

The Results

John Coyle, PE, City Right of Way Manager for Salt Lake City, UT, has combined the benefits of concrete pavement surfaces with the sound engineering behind FDR with cement. Many of the FDR projects he has managed included 6 inches of pulverization of the existing asphalt and base course, topped with a 6 inch Portland cement concrete pavement.

This FDR section saves the taxpayers about 30% when compared to the conventional removal and replacement of the asphalt pavement and aggregate base course. In addition to the impressive upfront cost savings, the residents along these improved roadways will enjoy decades of superb performance, with minimal maintenance disruptions.

PAVE AHEAD

DURABLE. SUSTAINABLE. CONCRETE.



Local Street Reconstruction Salt Lake City, UT

Design Factors:

- 6" Portland Cement Concrete Pavement on 6" Full Depth Reclaimed Subgrade.
- Subgrade cement-stabilized at 4% by weight of reclaimed material.
- 100 year predicted pavement life

Concrete Placement:

- 2110 lbs. Portland cement per CY
- 0.45 W/C ratio
- Placed directly from ready mixed concrete truck with slurry spreader attachment.

Photo courtesy of Spencer Guthrie, Ph.D., Brigham Young University