

Full Depth Reclamation

Full depth reclamation (FDR) is a pavement rehabilitation process in which the full flexible pavement section and a predetermined portion of the underlying materials are uniformly crushed, pulverized or blended resulting in a stabilized base course. Further stabilization may be obtained through the use of various additives. Through this green rehabilitation process, Tenmile Creek Excavating, LLC (TCE) recycles existing road materials to create a new homogeneous stabilized base resulting in quality, low cost, strong, long lasting roadways and parking areas.

The FDR Process

Evaluation

Our Full Depth Reclamation process begins with a thorough evaluation of existing conditions to determine a project specific mix design.

Initial Pulverization

After the evaluation, the pulverizing machine will crush and blend the existing flexible pavement section and some of the underlying granular material. Doing this will eliminate deep cracks that can ultimately lead to reflective cracking experienced if only an asphalt overlay would be installed.

Compaction and Initial Grading

Following pulverization, the material will be compacted with a pad foot roller. During the compaction operation, initial shaping takes place utilizing our computer controlled grading equipment. TCE can add or remove material to obtain the desired cross section and surface profile.

Stabilization

If the mix design requires additional stabilization, this can be achieved with the incorporation of bituminous, chemical, or mechanical materials. The method to be utilized will be determined during the evaluation process.

Final Blending and Grading

After stabilization, the materials are kneaded with the pad foot roller and then graded to the final profile. The base is then sealed with a smooth drum roller. In 5 days the surface can be paved or chip sealed.

During all of the above operations, laboratory testing and monitoring will be performed. This allows for field adjustments to the project mix design as conditions change.

Stabilization

Stabilization is the improvement of selected material engineering properties by the addition of additives so that the material can serve its function in the construction of the life of a pavement or building structure. It is a permanent change in the properties of the material.

Types of Stabilization

Bituminous

If the existing gravel or pavement cross section is free of soil contamination, an emulsion additive can be blended into the base. The emulsion creates a more flexible (fatigue resistant) base.

Chemical

If the soil has a high moisture content, Portland cement, fly ash, etc., can be spread over the soil and then blended with the soil to condition it.

Mechanical

This method is utilized when additional granular material is to be incorporated into the existing materials.

Full Depth Reclamation

Lower construction costs

- Reuse existing materials (Green Process)

Environmentally friendly

- Less waste, manufacturing by-products and fuel usage

Addresses deterioration issues

- Removes full depth of road/parking lot to eliminate reflective cracking
- Creates a homogeneous cross section

Less impact to the users

- Up to 14,000 square yards can be processed in a day by a single crew
- Short cure time—Asphalt overlay can be placed within 5 days

Stabilization

Uses

- Eliminate undercuts and the use of geofabrics. This typically saves money
- Strengthen subgrades under roadways and building pads
- Allows access to construction sites by drying and stiffening subgrades; this may allow you to compress your construction schedule while providing a more stable platform for construction to proceed