Micro surfacing
What is Micro Surfacing

- Micro surfacing is a mixture of dense graded aggregate, emulsified asphalt, Portland cement, fillers, polymers and water. The micro surfacing is applied as a thin surface treatment using a specially designed micro surfacing machine.

- Specialized design techniques are used to get the right curing time. Micro surfacing provides greater durability than a Chip Seal.
Features & Benefits

- Micro surfacing is quick to apply
- Traffic returned to surface within 20 minutes.
- Micro surfacing will seal small cracks
- Does not raise the grade of your roadway
- Protects the underlying pavement.
- Minor profiling can be achieved with multiple applications.
Micro-Surfacing

- Thin paving system (10-15 mm)
- Polymer modified emulsion
- Crushed aggregate
- Mineral filler
- Additives (as needed)
- Water
Materials

- 100% crushed aggregate
- Clean
- Abrasion resistant
- Polish resistant
- Freeze-thaw resistant
- Asphalt
- Emulsifier
- Modifier
Preparation for Micro-surfacing

- Roadway must be clean. Free of any vegetation, dust or debris.
- All Utility boxes and valves must be protected.
- Cracks and joint separation must be crack sealed with no over banding.
- Any pavement failure must be repaired.
Application Rate

- Type II  10 - 20 lb/yd^2
- Type III  15 - 30 lb/yd^2
- Rut fill as required
Equipment

- Micro Surfacing Unit
- Support trucks
- Front end loader for loading aggregate
- Sweeper
- Storage tankers for water & emulsion
Ralumac Machine
The Process

- Aggregate
- Fines Feeder
- Aggregate Gate
- Conveyor
- Mixer
- Mixer Gate
- Slurry mix
- Water Spray bar

Conveyor
Aggregate
Fines Feeder
Aggregate Gate
Conveyor
Mixer
Mixer Gate
Slurry mix
Water Spray bar
Micro surfacing truck mount machine
Micro surfacing screed
Micro surfacing screed augers, spreading the mixed material
Exeter Township, Berks County, PA
Protecting manholes and valve covers with plastic
Micro surfacing over utility
Removed plastic covering
Cracks will need to be Sealed
Area in need of repair
Crack Seal before Micro surfacing
Failed areas are patched
Micro surfacing covers patched area
Center pass, handwork is needed on joint
Several weeks later
Micro surfacing truck mount, Rockland Township, PA
First pass with micro surfacing
Water spray helps microsurfacing adhere to roadway
Hand work is needed at every joint, radius and intersections.
Hand work is necessary at the project limits.
All cracks have been sealed
Special attention is needed at the center joint.
Micro surfacing is black when cured, brown when freshly laid.
Traffic must be kept off the mat until dry, about 20 minutes.
Traffic will return to pavement within 20 minutes of lay down.
A storage area for aggregate, asphalt, & water is needed
The area should be of sufficient size to maneuver
Re-supplying the lay-down vehicle is quick
The roadway must be blown clean before micro-surfacing.
Water is sprayed onto tires & roadway surface
Water on the roadway helps the micro-surfacing adhere.
Traffic control is critical on microsurfacing.
On board computers are essential to a smooth operation.
Squeegee operators ensure a smooth edge.
A squeegee is used to make each joint flush
A smooth even textured mat
Attention to detail & a smooth finish
Micro-surfacing rut box
Rut Filling Box

- Ruts over ½ inch deep.
- Type II or III gradation
- Keep traffic off each lift until material is set.
Re-profiling rutted wheel path

Original Pavement Profile

Crown

Ruts in Wheel path
How the box works

Spreader Box with Steel Strike Off

Pavement

Full Width Lane

The Scratch Coat is Generally 150 mm Less Than the Width of the Lane
Weather conditions must be adhered to

- Minimum temperature - 50°F
- Rain safe - 1½ hours
- No freezing within 24 hrs
THANK YOU

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