Construction Guide Specification for Micro Surfacing

Specification
AASHTO Construction Guide Specification 408

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Description
This guide specification is intended to provide information needed for owners or contractors to construct micro surfacing. Micro surfacing is the application of a mixture containing polymer modified emulsified asphalt, mineral aggregate, mineral filler, water, and other additives that are properly proportioned, mixed, and spread on a paved surface.

Terminology
The terminology in this specification covers the two grades of asphalt emulsion used in Micro Surfacing as recognized by AASHTO.

Materials
All materials shall meet AASHTO MP 28: Components of micro surfacing include asphalt emulsion, aggregate, mineral filler, water, and additives.

Construction
Design: Must follow AASHTO PP83
Pre-Construction meeting: Importance of preconstruction meeting to discuss topics listed.
Road Surface Preparation: Pavement shall be clean and dry with cracks properly prepared.
Equipment: Guidelines given for equipment necessary to construct micro surfacing.
Calibration: Frequency and method of paver calibration.
Application: Addresses weather limitations, test strips, application rates, importance of following job mix design, surface moisture, hand work, rut filling, and rolling.
Aggregate Stockpile Testing: Guidance on proper testing and maintenance of a stockpile.
Workmanship: Defines acceptable workmanship and processes to achieve it.
Return to traffic: Describes when and how to open a project to traffic.
Project Documentation: Provides list of required documentation to be recorded daily.
QA/QC: Referred to COMP TS 5c

** Recommend a post construction walk-thru meeting with the contractor before demobilization.

Measurement
Upon completion of acceptable work:
- Emulsion, by gallon via certified BOL including weigh back ticket of unused emulsion
- Aggregate, by dry ton via calibration totals
- Mineral Filler, by 94-pound sack and is included as aggregate.

Payment
Payment will be made at the contract bid price for the specified unit of measure and is full compensation for furnishing all materials, equipment, labor, and incidentals necessary to complete the work as specified. Water and mix additives are considered as incidental items.

Deal breakers and no fly zone
Keys that are critical to a successful project:
1. Follow a properly prepared mix design.
2. Assure materials specification are met. Consistency within the specification is important.
3. Ensure equipment is calibrated and fully functional.
4. Stress thorough communication between parties at the preconstruction meeting and throughout the project.
5. Inspect the project as it proceeds, correct any issues immediately.
6. Trained (certified) inspector & contractor staff

Points to Understand
1. Ambient and pavement temperatures shall meet specification.
2. Pavers should be continuous flow, capable of metering individual materials accurately. Calibration is required.
3. Spreading equipment should meet all requirements.
4. Rut filling, when required by the project plan, should be applied using required equipment and technique.
5. All materials should meet specifications. Aggregate stockpile tolerances are important.
6. Ensure longitudinal joints and edge lines are straight and neat at centerline, curbs, shoulders.
7. Transverse joints should be kept to a minimum and constructed appropriately to provide a good appearance.
8. A test strip should be evaluated by the Agency to ensure that adequate workmanship, aesthetics and cure time of mixture are met.
9. Commentary is provided throughout the document for additional context.

Referenced Documents
AASHTO: M 140, M 208, M 316, MP 28, PP 83, T 11, T 27, T 31
AASHTO 10th Edition of Guide Specifications for Highway Construction
National Cooperative Highway Research Program Synthesis 411
Manual on Uniform Traffic Control Devices for Streets and Highways, (MUTCD), 2009 Edition