

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION 822

HOT IN-PLACE RECYCLING, INTERMEDIATE COURSE

February 27, 2001

- 822.01 General
- 822.02 Mix Design and Materials
- 822.03 Quality Control Requirements
- 822.04 Equipment
- 822.05 Weather Limitations
- 822.06 Construction
- 822.07 Density Acceptance
- 822.08 Surface Tolerances
- 822.09 Method of Measurement
- 822.10 Basis of Payment

822.01 General. This work shall consist of hot in-place recycling (HIR) of the top 2 inches (50 mm) of an asphalt concrete pavement in accordance with these specifications and details shown on the plan or established by the Engineer. HIR involves heating the existing pavement, collecting the material together, adding new material, mixing the materials together, and paving the recycled mix in a continuous process. This course of HIR will be used as an intermediate course for an asphalt concrete surface course.

822.02 Mix Design and Materials. For each type of existing mix in the pavement surface of the project, testing must be performed on the top 2 inches (50 mm) of mix to determine:

1. the existing gradation.
2. the required rate of application for proper rejuvenation of the existing asphalt binder to meet the specified Penetration.
3. a final mix with a minimum Marshall Stability (AASHTO T 245) of 1800 pounds (8006 N), unless the Design Designation indicates the current year trucks are less than 1500, then the minimum Marshall Stability shall be 1200 pounds (5338 N).

Materials added during the HIR process shall meet the following minimum requirements:

1. Virgin aggregate shall meet or exceed the quality requirements of 703.05.
2. Asphalt rejuvenating agents shall be primarily composed of a petroleum resin base.
3. Asphalt binders, if used, shall meet or exceed the binder requirements of 908.
4. Other modifiers, if used, shall be defined in the mix design.

The District shall verify that the mix design and materials meet the above minimum requirements. A minimum of two weeks before the start of production, the Contractor shall provide a copy of the mix design to the District Engineer of Tests. During production, any

changes in the mix design shall also be submitted. These submittals are for the verification of the above minimum requirements.

822.03 Quality Control Requirements. A minimum of two weeks before the start of production, the Contractor shall provide a copy of the Materials Quality Control Plan to the District Engineer of Tests and Laboratory.

At a minimum, the Materials Quality Control Plan shall include the following tests on material that has gone through the HIR process, for each production day (or night):

Binder Penetration Value (25C, 100 gram, 5 seconds): A minimum of one test per production day. The Penetration Value of the modified binder shall be between 40 to 90.

Binder Content: A minimum of two tests per production day. The binder content shall be maintained between ± 0.6 percent from the approved mix design.

Gradation: A minimum of two tests per production day. The gradation of the HIR processed material shall be within ± 8 percent of the approved mix design on the amount passing the No. 4 (4.75 mm) sieve.

Maximum Specific Gravity (MSG): A minimum of two tests per production day. The Contractor shall calculate the average of all the MSG determinations performed each production day and report this average on the Quality Control Report.

Contractor personnel performing these tests shall meet the Level 1 requirements of Supplement 1041.

Results of these tests shall be recorded on a Form TE-199 and be submitted to the District Engineer of Tests on the workday following the production day of the material represented by the report. If the results of any of the above tests are not met for more than two consecutive production days, production shall cease until the problem is identified and corrected. If necessary, a new mix design showing the requirements of 822.02 are met will be submitted prior to restarting production.

822.04 Equipment. Equipment used for HIR shall be self-contained, self-propelled units designed for this purpose and capable of a continuous in-place operation. Heating units shall be designed as to minimize the damage to the asphalt binder.

822.05 Weather Limitations. Requirements of 401.05 shall be met, except the minimum surface temperature shall be 50F (10C) and minimum air temperature shall be 40F (5C).

822.06 Construction. Surface preparation shall include the removal of:

1. Cold patch areas determined by the Contractor, to a depth of 3 inches (75 mm) and filling the areas with approved asphalt concrete.
2. Thermoplastic pavement markings.

The Contractor shall notify the Engineer a minimum of 24 hours prior to HIR. If the Contractor