Special Specification 3001
Injection of Latex into Asphalt Binder

1. DESCRIPTION

Inject latex modifier into base asphalt binder immediately before it enters the asphalt concrete mixing plant to produce a final modified binder that meets the specified grade. Use of this method to meet the requirements of the specified binder grade is at the Contractor's option unless otherwise shown on the plans.

2. MATERIALS

Furnish materials that meet the following requirements:

2.1. **Base Asphalt Binder**. Furnish base asphalt binder of the type, grade, and source used in the binder design and meeting the requirements of Item 300, "Asphalts, Oils, and Emulsions," and preapproved for use by the Construction Division.

2.2. **Latex Modifier**. Furnish latex additive consisting of an emulsion of styrene-butadiene-styrene rubber (SBR) in water. Provide SBR solids content of the emulsion for each shipment or container of latex modifier.

3. EQUIPMENT

Provide all equipment necessary for metering and blending the latex into the binder and for sampling of the final product.

3.1. **Inline Mixer**. Provide a mixer in the asphalt line downstream of the latex injection point with internal baffles and sufficient length to disperse the latex modifier into the binder.

3.2. **Sampling Port**. Provide a sampling port in an accessible location downstream of the inline mixer. Ensure that the sampling port meets the requirements of AASHTO T40 for sampling from pipelines.

3.3. **Metering Equipment**. Provide continuously recording meters for both the base asphalt and the latex modifier that meet the requirements of Item 520, "Weighing and Measuring Equipment."

4. BINDER DESIGN

Perform a binder design that demonstrates that the final product meets the requirements of the grade of performance graded (PG) binder shown on the plans, in accordance with Item 300, "Asphalts, Oils, and Emulsions." Furnish the Engineer with representative samples of all materials used in the binder design and a split sample of the proposed final binder. The Engineer will verify the design. If the design cannot be verified, the Engineer may reject the design.

- Provide the Engineer with a binder design report that includes the following items:
- the source and grade or product name of each material used;
- a test report showing passing results for all specified tests;
- the SBR solids content of the latex modifier;
- the percentage of each material used, including the percentage of SBR solids in the final binder;
- a brief description of the mixing procedure used;
- the name and contact information of the laboratory that did the design; and
- the date the design was performed.

5. PRODUCTION OPERATIONS

Provide the Engineer with a daily report of metering records, showing the calculated percentages of each component material used. Provide with this report a balance sheet of component material inventories. Stop production any time metering records indicate that the amount of latex solids falls below the amount determined in the binder design. Resume production only when the Engineer is satisfied that any measurement problems have been corrected.

Obtain one sample of the binder, witnessed by the Engineer, from the sampling port in accordance with Tex-500-C for each day of production and submit it to the Engineer. The Engineer will test these samples to establish consistency of the material and may reduce sampling rates once consistency has been demonstrated. The Engineer may suspend production if tests results indicate that the binder is not consistent.

Perform a new binder design if the source or grade of any of the component materials is to be changed. If the new binder design is not completed before the new materials are to be used, stop production until the new binder design is approved.

6. MEASUREMENT AND PAYMENT

The work performed, materials furnished, equipment, labor, tools, and incidentals will not be measured or paid for directly but are subsidiary or included in payment for other bid items.