

## SECTION 439—BITUMINOUS WEARING COURSE FB-1

**439.1 DESCRIPTION**—This work is construction of a wearing course of plant-mixed bituminous concrete on a prepared surface.

**439.2 MATERIAL**—[Section 401.2](#) and as follows:

(a) **Bituminous Material.** [Section 430.2\(a\)](#), except exclude PG 64-22 and PG 58-28 asphalt cement.

(b) **Aggregate.**

- Fine Aggregate—[Section 703.1](#), Type B, for surface finish only.
- Coarse Aggregate, Type A—[Section 703.2](#)

(c) **Mixture Composition.** Determine the optimum emulsion content using [PTM No. 750](#).

**439.3 CONSTRUCTION**—[Section 401.3](#), except as follows:

(c) **Bituminous Mixing Plant.**

**1. Plant Requirements.** Plants do not require equipment for developing the design and control tests according to the Department's modified Marshall method.

Use a synchronized, volume-proportioning, mobile plant; a stabilization plant; or a stationary plant conforming to the following requirements:

- Mobile plant—Equipped to mix, spread, and strike off surface.
- All plants—Aggregate bins and bituminous tank of sufficient capacity to provide a constant supply and proper proportioning of materials. Provide heating facilities when required to heat aggregate or bituminous materials.
- All plants—Capable of mixing materials to obtain a uniform coating of particles and a thorough distribution of bituminous material throughout the aggregate.
- All plants—Positive-driven feed to proportion coarse aggregate from bins and a positive pump to proportion bituminous material coming from the tank.
- All plants—Feeder and pump, synchronized to discharge coarse aggregate and bituminous material in desired proportions for mixing that are calibrated immediately before mixture production.

**2. Preparation of Mixture.**

**2.a Aggregates.** Dry the aggregate as necessary at a temperature not to exceed 66 °C (150F), except when using PG 46-40 or PG 52-28 asphalt cements. The Contractor may use damp aggregates with emulsified asphalt.

**2.b Bituminous Material.** Heat the bituminous material to the temperature specified in [Section 430.2](#).

**2.c Mixing.** Add the required quantities of aggregate and bituminous material to the mixer. Mix the aggregate and bituminous material until uniformly coating the aggregate with a film of adequate thickness to

provide the required binding properties. Bulletin 27 requirements for mixing and determining the percentage of the aggregate coated do not apply to the mixture.

**(d) Hauling Equipment.** These requirements do not apply when using a mobile plant.

**(e) Bituminous Pavers.** These requirements do not apply when using a mobile plant. The requirement for a heated unit does not apply if the bituminous material is an emulsified asphalt.

**(g) Preparation of Existing Surface.** Tack coat requirements apply only when designated in the contract.

**(h) Spreading and Finishing.** When spreading courses using emulsified asphalt, do not strip asphalt from the aggregate. Unless the mixture contains PG 46-40 or PG 52-28, do not place the wearing course until the binder course is satisfactorily cured and at least 24 hours after placing the binder course. To spread the mixture to the loose depth required to obtain the required compacted depth, the Contractor may use the mobile plant that produced the mixture. After uniformly spreading the mixture, allow the mixture to cure as specified in [Section 439.3\(g\)](#) or until the surface becomes tacky. Using a power roller, compact the mixture to a firm, even surface that does not move under the compaction equipment. Intermediate rolling with a pneumatic-tire roller is not required.

**(j) Mat Density Acceptance.** The Representative will accept density when the mixture does not move under compaction equipment.

**(l) Surface Tolerance.** After complying with the surface tolerance requirements specified in [Section 401.3](#), while the surface is still tacky, and before opening to traffic, uniformly spread a layer of fine aggregate on the surface at a rate of 1.6 kg/m<sup>2</sup> to 2.7 kg/m<sup>2</sup> (3 pounds per square yard to 5 pounds per square yard). Sweep and roll the surface before opening to traffic.

**(o) Defective Work.** Revise to read:

Unless otherwise directed in writing by the District Executive, remove and replace pavement deficient in surface tolerance or depth as specified in [Section 401.3](#) or defective in residual asphalt content as specified in [Section 401.2](#).

#### 439.4 MEASUREMENT AND PAYMENT—

**(a) Bituminous Wearing Course FB-1.**

1. **Area Basis.** Square Meter (Square Yard)
2. **Mass (Weight) Basis.** Tonne (Ton)
3. **Material Used Basis.**
  - 3.a **Aggregate.** Square Meter (Square Yard) or Tonne (Ton)
  - 3.b **Bituminous Material.** Liter (Gallon)

**(b) Scratch Course.**

1. **Mass (Weight) Basis.** Tonne (Ton)
2. **Material Used Basis.**
  - 2.a **Aggregate.** Tonne (Ton)
  - 2.b **Bituminous Material.** Liter (Gallon)

**(c) Leveling Course.** [Section 439.4\(b\)](#)