

## 410-R-759 QC/QA HMA - SMA PAVEMENT

(Revised 12-18-24)

The Standard Specifications are revised as follows:

SECTION 109, BEGIN LINE 801, INSERT AS FOLLOWS:

**(a) HMA and SMA**

Quality adjustments with respect to mixture, density, and smoothness for mixture produced will be computed in accordance with *either 401.19 or 410.19*.

SECTION 410, BEGIN LINE 24, DELETE AND INSERT AS FOLLOWS:

Asphalt Materials

PG Binder, PG ~~76-22~~, PG ~~70-22~~58E-28 ..... 902.01(a)

Coarse Aggregates, Class AS..... 904.03

Fine Aggregates (sand, mineral filler)..... 904.02

Stabilizing Additives \* ..... AASHTO M 325

*\*The stabilizer shall be virgin cellulose or virgin mineral fiber.*

**410.04 Design Mix Formula**

A DMF shall be prepared in accordance with 410.05 and submitted in a format acceptable to the Engineer one week prior to use. The DMF shall state the maximum particle size in the mixture. The DMF shall state the calibration factor, test temperature and absorption factors to be used for the determination of binder content using the ignition oven in accordance with ITM 586, the binder content by extraction in accordance with ITM 571,  $\Delta P_b$ , determined in accordance with ITM 591, the aggregate degradation loss value in accordance with ITM 220 and a Mixture Adjustment Factor, MAF. The DMF shall state the source, type dosage rate of any stabilizing additives. The DMF ~~will~~shall be based on the ESAL and mixture designation. No mixture shall be used until the DMF has been assigned a mixture number by the DTE. *The mixture number will be assigned for each calendar year. Assigning of a mixture number shall not in any way be construed as acceptance in conjunction with 401.19.*

The ESAL category ~~identified in the pay item correlates to the following ESAL ranges:~~shall be ESAL Category 4 corresponding to greater than or equal to 10,000,000 ESALs.

ESAL Category	ESAL
2*	<3,000,000
3	3,000,000 to <10,000,000
4*	$\geq$ 10,000,000
* A category 2 mixture shall replace a category 1 mixture and a category 4 mixture shall replace a category 5 mixture.	

The plant discharge temperature for any mixture shall not be more than 315°F ~~whenever PG 70-22 binder is used or not more than 325°F whenever PG 76-22 binder is used.~~ SMA may be produced using a water-injection foaming device. The DMF shall list the minimum and maximum plant discharge temperatures as applicable to the mixture.

#### 410.05 SMA Mix Design

The DMF shall be determined for each mixture from a SMA mix design by a design laboratory selected from the ~~Department's list of Qualified~~ *QPL of HMA Mix Design Laboratories. A laboratory will be considered for inclusion on the QPL by following the procedure in ITM 574.* A SMA mixture shall be designed in accordance with ITM 220, AASHTO M 325 and AASHTO R 46 except the design gyrations shall be 75 for all ESAL categories.

All loose mixtures shall be conditioned ~~for 4 h~~ in accordance with AASHTO R 30 prior to testing-, *except as follows:*

(a) *Mixtures shall be conditioned for 4 hours.*

(b) *SMA mixtures shall be conditioned at  $300 \pm 5^{\circ}\text{F}$ .*

Steel furnace slag coarse aggregate, when used in an intermediate mixture application, shall have a deleterious content less than 4.0% as determined in accordance with ITM 219.

SECTION 410, BEGIN LINE 99, DELETE AS FOLLOWS:

~~A PG binder grade or source change will not require a new mix design. If the upper temperature classification of the PG binder is lower than the original PG grade, a new TSR value is required.~~

SECTION 410, BEGIN LINE 110, INSERT AS FOLLOWS:

#### 410.06 Recycled Materials

Recycled materials shall be in accordance with 401.06 for dense graded mixtures except *RAS shall not be used* and non-SMA RAP material for use in the SMA mixture shall be 100% passing the 3/8 in. (9.5 mm) sieve and 95 to 100% passing the No. 4 (4.75 mm) sieve.

SECTION 410, BEGIN LINE 260, DELETE AS FOLLOWS:

~~mechanical devices may be placed by other methods. The temperature of mixture at the time of spreading shall be no more than  $315^{\circ}\text{F}$  whenever PG 70-22 binder is used or no more than  $325^{\circ}\text{F}$  whenever PG 76-22 binder is used. The temperature of each mixture shall not be less than  $245^{\circ}\text{F}$  at the time of spreading when placed with paving equipment in accordance with 409.03(c)2 or 409.03(c)3. No mixture shall be placed on a previously paved course that has not cooled to less than  $175^{\circ}\text{F}$ .~~

SECTION 410, BEGIN LINE 507, DELETE AND INSERT AS FOLLOWS:

#### 410.22 Basis of Payment

The accepted quantities for this work will be paid for at the contract unit price per ton for QC/QA – HMA, of the type specified, – SMA, complete in place.

Payment for furnishing, calibrating, operating the inertial profiler, and furnishing IRI profile information will be made in accordance with 401.18.

Furnishing and operating the 16 ft straightedge shall be included in the cost of other pay items within this section.

*Adjustments to the contract payment with respect to mixture, density, and smoothness for mixture produced will be included in a quality adjustment pay item in accordance with 109.05.1.*

Joint adhesive will be paid for by the linear foot, complete in place.

~~Adjustments to the contract payment with respect to mixture, density, and smoothness for mixture produced will be included in a quality assurance adjustment pay item. The unit price for this pay item will be \$1.00 and the quantity will be in units of dollars. The quantity is the total calculated in accordance with 410.19. A change order will be prepared to reflect contract adjustments in accordance with 109.05.~~

Payment will be made under:

Pay Item	Pay Unit Symbol
Joint Adhesive, _____ course type	LFT
QC/QA - HMA, <u>4</u> , <u>58E</u> , _____ mm, - SMA (ESAL <sup>(1)</sup> )(PG <sup>(2)</sup> )(Course <sup>(3)</sup> )(Mix <sup>(4)</sup> )	TON
<del>Quality Assurance Adjustment</del> .....	<del>DOL</del>

<sup>(1)</sup> ESAL Category as defined in 410.04

<sup>(2)</sup> Number represents the high temperature binder grade. *Letter represents traffic loading designation.* Low temperature grades is - 2228

<sup>(3)</sup> Surface or Intermediate

<sup>(4)</sup> Mixture Designation