

## 401-R-820 QC/QA HMA PAVEMENT

(Adopted 04-16-26)

The Standard Specifications are revised as follows:

SECTION 401, BEGIN LINE 87, INSERT AS FOLLOWS:

Sieve Size	Dense Graded, Mixture Designation – Control Point (Percent Passing)				
	25.0 mm	19.0 mm	12.5 mm	9.5 mm	4.75 mm**
2 in. (50.0 mm)					
1 1/2 in. (37.5 mm)	100.0				
1 in. (25.0 mm)	90.0 - 100.0	100.0			
3/4 in. (19.0 mm)	< 90.0	90.0 - 100.0	100.0		
1/2 in. (12.5 mm)		< 90.0	90.0 - 100.0	100.0***	100.0
3/8 in. (9.5 mm)			< 90.0	90.0 - 100.0	95.0 - 100.0
No. 4 (4.75 mm)				< 90.0	90.0 - 100.0
No. 8 (2.36 mm)	19.0 - 45.0	23.0 - 49.0	28.0 - 58.0	32.0 - 67.0*	
No. 16 (1.18 mm)					30.0 - 55.0
No. 30 (600 µm)					
No. 50 (300 µm)					
No. 200 (75 µm)	1.0 - 7.0	2.0 - 8.0	2.0 - 10.0	2.0 - 10.0	3.0 - 8.0
<p>* The mix design gradation shall be less than or equal to 58.0% passing the No. 8 (2.36 mm) sieve for all 9.5 mm surface mixtures. The mix design gradation can be greater than 58.0% passing the No. 8 (2.36 mm) sieve when used on non-Department maintained facilities.</p> <p>** The total blended aggregate gradation for the 4.75 mm mixture shall have a fineness modulus greater than or equal to 3.30 as determined in accordance with AASHTO T 27.</p> <p>*** The percent passing shall be 98.0% - 100.0% when SMA RAP material in accordance with 401.06 is used.</p>					

SECTION 401, BEGIN LINE 92, DELETE AND INSERT AS FOLLOWS:

~~Dust/Calculated Effective Binder Ratio for dense graded mixtures shall be 0.6 to 1.4. The Dust/Calculated Effective Binder Ratio for 4.75 mm mixtures shall be 1.0 to 2.0.~~

<i>Dust/Calculated Effective Binder Ratio</i>	
<i>Mixture</i>	<i>Ratio</i>
<i>4.75 mm</i>	<i>1.0 – 2.0</i>
<i>9.5 mm</i>	<i>0.6 – 1.4</i>
<i>12.5 mm</i>	
<i>19.0 mm</i>	
<i>25.0 mm</i>	<i>0.8 – 1.6</i>

SECTION 401, BEGIN LINE 162, DELETE AND INSERT AS FOLLOWS:

**401.06 Recycled Materials**

Recycled materials may consist of RAP or RAS or a blend of both. HMA RAP shall be the product resulting from the cold milling or crushing of an existing HMA pavement.

Before entering the plant, *HMA* RAP shall be processed so that 100% will pass the 2 in. (50 mm) sieve. Before entering the plant, RAS shall be processed so that 100% will pass the 3/8 in. (9.5 mm) sieve. The *HMA* RAP coarse aggregate shall pass the maximum size sieve for the mixture being produced.

*SMA* RAP, as defined in 410.06, may be used. The Contractor may request the use of *SMA* RAP material in the *HMA* mixture provided the material is stockpiled separately at the plant and the material properties were determined in accordance with ITM 584 during stockpile construction. The request shall include all QC test results describing the stockpile composition. The Engineer will obtain a representative sample of the *SMA* RAP material in accordance with ITM 207 for testing in accordance with ITM 590 to verify the proposed design value.

*HMA* RAP for the ESAL category 3 and 4 surface mixtures shall be a fine *HMA* RAP with 100% passing the 3/8 in. (9.5 mm) sieve and 95 to 100% passing the No. 4 (4.75 mm) sieve.

The Contractor may request the use of coarse *HMA* RAP in a category 4 surface mixture up to a maximum 20.0% by volume of material retained on the No. 4 (4.75 mm) sieve. The election to use coarse *HMA* RAP in a category 4 surface mixture will void the allowed use of crushed stone and gravel coarse aggregate materials in accordance with 904.03(d). ~~SMA RAP as defined in 410.06 shall not be used in any HMA mixture.~~

SECTION 401, BEGIN LINE 217, INSERT AS FOLLOWS:

HMA mixtures utilizing *HMA* or *SMA* RAP, ~~or RAS~~, or a blend of ~~RAP and RAS~~ any of these

MAXIMUM BINDER REPLACEMENT, %										
Mixture Category	Base and Intermediate							Surface		
	Dense Graded				Open Graded			Dense Graded		
	25.0 mm	19.0 mm	12.5 mm	9.5 mm	25.0 mm	19.0 mm	9.5 mm	12.5 mm	9.5 mm	4.75 mm
2	25.0*				25.0*			25.0*		
3	25.0*				25.0*			25.0*		
4	25.0*				25.0*			25.0*		
* The contribution of RAS to any HMA mixture shall be ≤ 3.0% by total mass of mixture and ≤ 15.0% binder replacement.										

SECTION 401, BEGIN LINE 965, DELETE AS FOLLOWS:

~~A \$500.00 credit adjustment will be included in a quality adjustment pay item in accordance with 109.05.1(d) for each disputed subplot that did not result in an improvement to the SCPF or Lot PF.~~