

414-R-768 ULTRATHIN BONDED WEARING COURSE, WARRANTED

(Revised 10-19-23)

The Standard Specifications are revised as follows:

SECTION 414, BEGIN LINE 19, DELETE AND INSERT AS FOLLOWS:

**Asphalt Materials**

PG Binder, PG ~~64-2258S-28~~, PG ~~76-2258E-28~~.....902.01(a)

SECTION 414, BEGIN LINE 28, DELETE AND INSERT AS FOLLOWS:

**(b) Asphalt Materials**

The PG binder grade shall be selected based on the following requirements:

PG Binder	ESAL
<del>64-2258S-28</del>	< 10,000,000
<del>76-2258E-28</del>	≥ 10,000,000

Additional requirements for the PG ~~76-22~~ binder as follows:

Characteristic	Test Method	Min.	Max.
Separation, % prepared by ASTM D 7173	AASHTO T 53		6°C
Elastic Recovery, @ 39°F (4°C), %	AASHTO T 301	60	

SECTION 414, BEGIN LINE 97, INSERT AS FOLLOWS:

**414.05 Use of Recycled Materials**

Recycled materials shall be in accordance with 401.06 for dense graded surfaces, except *RAS shall not be used* and RAP for use in the UBWC 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 414, BEGIN LINE 159, DELETE AND INSERT AS FOLLOWS:

**414.10 Pre-Paving Meeting**

A pre-paving meeting between the Engineer and Contractor will be held on-site prior to beginning work. The following shall be reviewed:

- (a) work schedule
- (b) traffic control plan
- (c) equipment calibrations and adjustments
- (d) inspection and evaluation of the condition and adequacy of equipment, including units for transport of materials
- (e) ~~JMF~~DMF
- (f) Contractor’s proposed emulsion and mix application rates
- (g) QCP in accordance with ITM 803
- (h) Contractor’s authorized representative.

SECTION 414, BEGIN LINE 198, DELETE AND INSERT AS FOLLOWS:

The Contractor shall furnish to the Engineer a warranty bond at the pre-construction conference or prior to beginning any work on the contract. The warranty bond shall be equal to 100% of the contract total for the warranted UBWC pay items, ~~and~~ shall be

properly executed by a surety satisfactory to the Department, and shall be payable to the State of Indiana. The warranty bond shall be in effect for ~~three~~ *one* years from the date of substantial completion.

SECTION 902, BEGIN LINE 81, DELETE AND INSERT AS FOLLOWS:

**2. Asphalt Emulsion Ultrathin Bonded Wearing Course**

Characteristics		Test Method	Min.	Max.
Viscosity, Saybolt Furol @ 25°C (77°F <del>(25°C)</del> ), s		AASHTO T 59	20	100
Storage Stability Test, 24 h, % <del>(Note 1)</del>		AASHTO T 59		1
Sieve Test, %		AASHTO T 59		0.05
Residue by Distillation, % (Note 2/)		AASHTO T 59	63	
Oil Distillate by volume of emulsified asphalt, %		AASHTO T 59		2
Demulsibility, %	w/35 mL, 0.02 N CaCl <sub>2</sub> or	AASHTO T 59	60	
	w/35 mL, 0.8% DSS	AASHTO T 59		
<b>Tests on Residue from Distillation</b>				
Penetration (0.1 mm) at 77°F (25°C), 100g, 5 s		AASHTO T 49	90	150
Elastic Recovery @ 4°C (39°F <del>(4°C)</del> ), %		AASHTO T 301	58	
Notes:				
1. <del>After 24 h, the emulsion shall be a homogeneous color.</del> <i>The distillation temperature for this test shall be 175°C (350°F).</i>				
2. <del>Except maximum temperature of 400 ±10°F (205 ±5°C).</del>				