

\*

USE ON ALL PROJECTS INVOLVING BITUMINOUS MATERIALS

\*

(1005PG, 10/10/18)

**SECTION 1005 BITUMINOUS MATERIALS:**

**1005-2 Sampling of Bituminous Material:** the first sentence of the first paragraph of the Standard Specifications is revised to read:

Sampling of bituminous material shall conform to the requirements of Arizona Test Method 103.

**1005-3.01 Asphalt Cement:** the second paragraph of the Standard Specifications is revised to read:

If PG 76-22 TR+ asphalt binder is used, it shall conform to the requirements of Table 1005-1a.

If PG 70-22 TR+ asphalt binder is used, it shall conform to the requirements of Table 1005-1b.

If PG 64-28 TR+ asphalt binder is used, it shall conform to the requirements of Table 1005-1c.

**1005-3.01 Asphalt Cement:** the third paragraph of the Standard Specifications is hereby deleted:

**1005-3.04 Emulsified Asphalt (Special Type):** of the Standard Specifications is revised to read:

Emulsified asphalt (special type) shall consist of Type SS-1 or CSS-1 diluted with water to provide an asphalt content not less than 26 percent. The water used must be potable. The material shall not be diluted in the field.

**TABLE 1005-1:** "Creep Stiffness of PAV Binder" in Table 1005-1 of the Standard Specifications is revised to read:

<b>TABLE 1005-1 ASPHALT BINDER ADJUSTMENT TABLE</b>			
<b>Test Property</b>	<b>AASHTO Test Method</b>	<b>Test Result</b>	<b>Percent of Contract Unit Price Allowed</b>

Creep Stiffness of PAV Binder: S, MPa	T 313	≤ 300	100
		301-330	95
		331-450	85
		451-600	75
		> 600	65 (1)

**TABLE 1005-1b: PG 70-22 TR+ ASPHALT BINDER** is hereby added to the Standard Specifications:

TABLE 1005-1b PG 70-22 TR+ ASPHALT BINDER				
Test Property	Test Method	Requirement	Test Result	Percent of Contract Unit Price Allowed
Solubility in Trichloroethylene, %, minimum	ASTM D 2042	97.5	-----	-----
Softening Point, °C, minimum	AASHTO T 53	54	≥ 54 51 - 53 < 51	100 85 70 (1)
Elastic Recovery, @ 10 °C, %, Minimum	AASHTO T 301	55	≥ 55 50 - 54 < 50	100 85 70 (1)
Phase Angle (δ), @ 70 °C @ 10 rad/sec, degrees, maximum	AASHTO T 315	75	≤ 75 76 - 83 > 83	100 85 65 (1)
(1) Reject Status: The pay adjustment applies if allowed to remain in place.				
Notes: PG 70-22 TR+ asphalt binder shall contain a minimum of 8 percent crumb rubber and a minimum of two percent SBS (styrene-butadiene-styrene) polymer. PG 70-22 TR+ asphalt binder shall conform to the requirements of AASHTO M 320 and, in addition, shall meet the requirements specified above. Table 1005-1 will also apply for PG 70-22 TR+ asphalt binder. Should the bituminous material be deficient on more than one of the properties listed in Tables 1005-1 and 1005-1b, the pay adjustment will be the greatest reduction to the contract unit price specified considering individual test results.				

The pressure aging temperature for PG 70-22 TR+ asphalt binder shall be 110 °C.

The crumb rubber shall be derived from processing whole scrap tires or shredded tire materials. The tires from which the crumb rubber is produced shall be taken from automobiles, trucks, or other equipment owned and operated in the United States. The processing shall not produce, as a waste product, casings or other round tire material that can hold water when stored or disposed of above ground.

**TABLE 1005-1c: PG 64-28 TR+ ASPHALT BINDER** is hereby added to the Standard Specifications:

<b>TABLE 1005-1c PG 64-28 TR+ ASPHALT BINDER</b>				
Test Property	Test Method	Requirement	Test Result	Percent of Contract Unit Price Allowed
Solubility in Trichloroethylene, %, minimum	ASTM D 2042	97.5	-----	-----
Softening Point, °C, minimum	AASHTO T 53	50	≥ 50 47 - 49 < 47	100 85 70 (1)
Elastic Recovery, @ 10 °C, %, Minimum	AASHTO T 301	55	≥ 55 50 - 54 < 50	100 85 70 (1)
Phase Angle (δ), @ 64 °C @ 10 rad/sec, degrees, maximum	AASHTO T 315	75	≤ 75 76 - 83 > 83	100 85 65 (1)
(1) Reject Status: The pay adjustment applies if allowed to remain in place.				
Notes:  PG 64-28 TR+ asphalt binder shall contain a minimum of 8% crumb rubber and a minimum of two percent SBS (styrene-butadiene-styrene) polymer.  PG 64-28 TR+ asphalt binder shall conform to the requirements of AASHTO M 320 and, in addition, shall meet the requirements specified above.  Table 1005-1 will also apply for PG 64-28 TR+ asphalt binder.				

Should the bituminous material be deficient on more than one of the properties listed in Tables 1005-1 and 1005-1c, the pay adjustment will be the greatest reduction to the contract unit price specified considering individual test results.

The pressure aging temperature for PG 64-28 TR+ asphalt binder shall be 100 °C.

The crumb rubber shall be derived from processing whole scrap tires or shredded tire materials. The tires from which the crumb rubber is produced shall be taken from automobiles, trucks, or other equipment owned and operated in the United States. The processing shall not produce, as a waste product, casings or other round tire material that can hold water when stored or disposed of above ground.

**TABLE 1005-3a:** “Elastic Recovery by means of Ductilometer” is revised and “Note 2” is added in Table 1005-3a of the Standard Specifications:

<b>TABLE 1005-3a POLYMERIZED CATIONIC RAPID SET (CRS-2P) EMULSIFIED ASPHALT (1)</b>		
<b>Tests on Emulsion:</b>	<b>Test Method</b>	<b>Requirement</b>
Elastic Recovery by means of Ductilometer, 25 °C (77 °F), % minimum	AASHTO T 301 (2)	55
(2) Testing shall be performed on residue by distillation, not on residue by oven evaporation.		

**TABLE 1005-3b:** “Elastic Recovery by means of Ductilometer” is revised and “Note 3” is added in Table 1005-3b of the Standard Specifications:

<b>TABLE 1005-3b POLYMERIZED HIGH FLOAT EMULSIFIED ASPHALT (1)</b>			
<b>Tests on Emulsion:</b>	<b>Test Method</b>	<b>Requirement</b>	
		<b>HFE-150P</b>	<b>HFE-300P</b>
Elastic Recovery by means of Ductilometer, 4 °C (39.2 °F), % minimum	AASHTO T 301 (3)	25	25
(3) Testing shall be performed on residue by distillation, not on residue by oven evaporation.			

**TABLE 1005-6:** PG 70-22 TR+ and PG 64-28 TR+ are added to “Paving Asphalt” in Table 1005-6 of the Standard Specifications:

<b>TABLE 1005-6 OTHER REQUIREMENTS</b>			
Grade of Asphalt Specification Designation	Range of Temperatures for Application by Spraying, °F (Not applicable for Plant Mixing)	Range of Aggregate Temperatures for Plant Mixing, °F	Basis of Conversion, Average Gallons Per Ton at 60 °F
Paving Asphalt	275 - 400	-----	
PG 76-XX			232
PG 70-XX			233
PG 64-XX			235
PG 58-XX			236
PG 52-XX			238
PG 76-22 TR+			229
PG 70-22 TR+			230
PG 64-28 TR+			231