ORIGINATION FORM
Proposed Revisions to the Specifications

(Please provide all information - incomplete forms will be returned)

Date: 10.28.2020

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Office: State Materials Office

Specification Section: 916

Article/Subarticle: 2.3 (Table 916-1)

****Will the proposed revision require changes to:**

Publication	Yes	No	Office Staff Contacted and date contacted
Standard Plans Index	○	◉	Rick Jenkins, Cheryl Hudso
Traffic Engineering Manual	○	◉	Javier Ponce
FDOT Design Manual	○	◉	Bobby Bull
Construction Project Administration Manual	○	◉	Scott Arnold
Basis of Estimate/Pay Items	○	◉	Melissa Hollis
Structures Design Guidelines	○	◉	Ben Goldsberry
Approved Product List	○	◉	Karen Byram
Materials Manual	○	◉	Tim Counts

**This section must be completed prior to processing proposed revisions.

Will this revision necessitate any of the following:

Design Bulletin ☐ **Construction Bulletin** ☐ **Estimates Bulletin** ☐ **Materials Bulletin** ☐

Are all references to external publications current? **Yes** ○ **No** ◉

If not, what references need to be updated? (Please include changes in the redline document.)

None.

Why does the existing language need to be changed?

Table 916-1, clarification.

Summary of the changes:

Table 916-1, clarification.

Are these changes applicable to all Department jobs? **Yes** ◉ **No** ○

If not, what are the restrictions?

Contact the State Specifications Office for assistance in completing this form.

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M E M O R A N D U M

DATE: December 3, 2020

TO: Specification Review Distribution List

FROM: Daniel Strickland, P.E., State Specifications Engineer

SUBJECT: Proposed Specification: **9160203 BITUMINOUS MATERIALS**

In accordance with Specification Development Procedures, we are sending you a copy of a proposed specification change.

The changes are proposed by Wayne Rilko from the State Materials Office to clarify Table 916-1 in the Standard Specification.

Please share this proposal with others within your responsibility. Review comments are due within four weeks and should be sent to Mail Station 75 or online at http://fdotewp1.dot.state.fl.us/programmanagement/development/industryreview.aspx . Comments received after **January 5, 2021,** may not be considered. Your input is encouraged.

DS/dh

Attachment

BITUMINOUS MATERIALS
(REV 10-28-20)

SUBARTICLE 916-2.3 is deleted and the following substituted:

916-2.3 Reporting: Specification compliance testing results shall be reported for the tests in Table 916-1 below, unless noted otherwise. Quality control (QC) testing results shall be reported for original binder DSR (G/sin δ and phase angle, as applicable).

Table 916-1		
SUPERPAVE PG ASPHALT BINDER		
Test and Method	Conditions	Specification Minimum/Maximum Value
Superpave PG Asphalt Binder Grade		Report
APL Number		Report
Modifier (name and type)	Polymer, Ground Tire Rubber with Approved Product List (APL) number, Sulfur, PPA, REOB, and any Rejuvenating Agents	Report
Original Binder		
Solubility, AASHTO T44-14 (2018)	in Trichloroethylene	Minimum 99.0% (Not applicable for PG 76-22 (ARB))
Flash Point, AASHTO T 48-18	Cleveland Open Cup	Minimum 450ºF
Rotational Viscosity, AASHTO T 316-19	275ºF	Maximum 3 Pa·s[(a)]
Dynamic Shear Rheometer [(b)], AASHTO T 315-19	$G^*/\sin\delta$	Minimum 1.00 kPa
	Phase Angle, δ[(c)] PG 76-22 (PMA) and PG 76-22 (ARB)[(d)]	Maximum 75 degrees
Separation Test, ASTM D7173-20 and Softening Point, AASHTO T 53-09 (2018)	163±5°C 48 hours	Maximum 15°F (PG 76-22 (ARB) only)
Rolling Thin Film Oven Test Residue (AASHTO T240-13 (2017))		
Rolling Thin Film Oven, AASHTO T240-13 (2017)	Mass Change %	Maximum 1.00
Multiple Stress Creep Recovery, $J_{nr,\ 3.2}$ AASHTO T 350-19	Grade Temperature (Unmodified binders only)	"S" = 4.50 kPa^{-1} max

Multiple Stress Creep Recovery, $J_{nr,\ 3.2}$[d, e, f] AASHTO T 350-19	67°C (Modified binders only) 76°C (High Polymer binder only)	"V" = 1.00 kPa^{-1} max Maximum $J_{nr,diff}$ = 75% 0.10 kPa^{-1} max
Multiple Stress Creep Recovery, %Recovery[d, e] AASHTO T 350-19	67°C (Modified binders only) 76°C (High Polymer binder only)	$\%R_{3.2} \geq 29.371\ (J_{nr,\ 3.2})^{-0.2633}$ $\%R_{3.2} \geq 90.0$
Pressure Aging Vessel Residue (AASHTO R 28-12 (2016))		
Dynamic Shear Rheometer, AASHTO T 315-19	$G^*\sin\delta$, 10 rad/sec.	Maximum 5,000 kPa[~~f,~~ g] Maximum 6,000 kPa [h]
Creep Stiffness, AASHTO T 313-19	S (Stiffness), @ 60 sec. m-value, @ 60 sec.	Maximum 300 MPa Minimum 0.300
ΔTc, ASTM D7643-16	20 hours PAV aging S (Stiffness), @ 60 sec. m-value, @ 60 sec.	$\Delta Tc \geq -5.0°C$

(a) Binders with values higher than 3 Pa·s should be used with caution and only after consulting with the supplier as to any special handling procedures, including pumping capabilities.
(b) Dynamic Shear Rheometer (AASHTO T 315-19) shall be performed on original binders for the purposes of QC testing only. The original binder G*/sin δ shall be performed at grade temperature. Grade temperature for High Polymer binder is 76°C.
(c) The original binder phase angle (AASHTO T 315-19) shall be performed at grade temperature.
(d) AASHTO T 315-19 and AASHTO T 350-19 will be performed at a 2-mm gap for PG 76-22 (ARB).
(e) All binders with a high temperature designation >67 will be tested at 67°C. PG 76-22 (PMA) and PG 76-22 (ARB) shall pass a "V" grade per AASHTO M 332-19.
(f) A maximum Jnr diff = 75% does not apply for any Jnr value ≤ 0.50 kPa-1.
(g) For ~~all PG grades of a~~ PG 67~~ or higher~~, perform the PAV residue testing at 26.5°C with a maximum of 5,000 kPa.
(h) For ~~all PG grades of a~~ PG 76 or higher, perform the PAV residue testing at 26.5°C with a maximum of 6,000 kPa.