

ORINATION FORM

Proposed Revisions to the Specifications

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

Date: Specification Section:

Originator: Articles/Subarticles:

Telephone:

email:

Will the proposed revision involve Design Standard Index changes? Yes No

Roadway Design staff contacted (name):

Structures Design staff contacted (name):

Will the proposed revision involve PPM changes? Yes No

Roadway Design staff contacted (name):

Will the proposed revision involve CPAM changes? Yes No

Construction staff contacted (name):

Will the proposed revision involve Pay Item changes? Yes No

Estimates staff contacted (name):

Will the proposed revision involve SDG changes? Yes No

Structures staff contacted (name):

Will the proposed revision involve APL changes? Yes No

Product Evaluation staff contacted (name):

Will the proposed revision involve Material Manual changes? Yes No

State Materials Office staff contacted (name):

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.)

Why does the existing language need to be changed?

Summary of the changes:

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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MIKE DEW
SECRETARY

MEMORANDUM

DATE: November 29, 2018

TO: Specification Review Distribution List

FROM: Dan Hurtado, 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.

This change was proposed by Wayne Rilko of the State Materials Office to modify the language.

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://www2.dot.state.fl.us/ProgramManagement/Development/IndustryReview.aspx> . Comments received after **December 27, 2018**, may not be considered. Your input is encouraged.

DH/dt
Attachment

BITUMINOUS MATERIALS.
(REV 11-13-18)

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 the table below, unless noted otherwise. Quality control (QC) testing results shall be reported for original binder DSR ($G/\sin \delta$ and phase angle, as applicable).

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	in Trichloroethylene	Minimum 99.0% (Not applicable for PG 76-22 (ARB))
Flash Point, AASHTO T48-17	Cleveland Open Cup	Minimum 450°F
Rotational Viscosity, AASHTO T316-13 (2017)	275°F	Maximum 3 Pa·s ^(a)
Dynamic Shear Rheometer ^(b) , AASHTO T315-12 (2016)	$G^*/\sin \delta$	Minimum 1.00 kPa
	Phase Angle, δ ^(c) PG 76-22 (PMA) and PG 76-22 (ARB) ^(d)	Maximum 75 degrees
Separation Test, ASTM D7173-14 and Softening Point, AASHTO T53-09 (2013)	163±5°C	Maximum 15°F (PG 76-22 (ARB) only)
	48 hours	
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 T350-14	Grade Temperature (Unmodified binders only)	“S” = 4.50 kPa ⁻¹ max

Multiple Stress Creep Recovery, $J_{nr, 3.2}$ ^(d, e, f) AASHTO T350-14	67°C (Modified binders only)	“V” = 1.00 kPa ⁻¹ max Maximum $J_{nr, diff} = 75\%$
	76°C (High Polymer binder only)	0.10 kPa ⁻¹ max
Multiple Stress Creep Recovery, %Recovery ^(d, e) AASHTO T350-14	67°C (Modified binders only)	$\%R_{3.2} \geq 29.37 (J_{nr, 3.2})^{-0.2633}$
	76°C (High Polymer binder only)	$\%R_{3.2} \geq 90.0$
Pressure Aging Vessel Residue (AASHTO R28-12)		
Dynamic Shear Rheometer, AASHTO T315-12 (2016)	$G^* \sin \delta$, 10 rad/sec.	Maximum 5000 kPa ^(f, g, h)
Creep Stiffness, AASHTO T313-12 (2016)	S (Stiffness), @ 60 sec. m-value, @ 60 sec.	Maximum 300 MPa Minimum 0.300
ΔT_c , ASTM D7643-16	20 hours PAV aging S (Stiffness), @ 60 sec. m-value, @ 60 sec.	$\Delta T_c \geq -5.0^\circ\text{C}$
<p>(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.</p> <p>(b) Dynamic Shear Rheometer (AASHTO T315-12 (2016)) shall be performed on original binders for the purposes of QC testing only.</p> <p>(c) The original binder phase angle (AASHTO T315-12 (2016)) shall be performed at grade temperature.</p> <p>(d) AASHTO T315-12 (2016) and AASHTO T350-14 will be performed at a 2-mm gap for PG 76-22 (ARB).</p> <p>(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 M332-14.</p> <p>(f) A maximum $J_{nr, diff} = 75\%$ does not apply for any J_{nr} value ≤ 0.50 kPa⁻¹.</p> <p>(g) For all PG grades of a PG 67 or higher, perform the PAV residue testing at 26.5°C with a maximum of 5000 kPa.</p> <p>(h) For all PG grades of a PG 76 or higher, perform the PAV residue testing at 26.5°C with a maximum of 6000 kPa.</p>		