

ORINATION FORM

Proposed Revisions to the Specifications

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

Date:

Office:

Originator:

Specification Section:

Telephone:

Article/Subarticle:

email:

Will the proposed revision require changes to:

Publication	Yes	No	Office Staff Contacted
Standard Plans Index			
Traffic Engineering Manual			
FDOT Design Manual			
Construction Project Administration Manual			
Basis of Estimate/Pay Items			
Structures Design Guidelines			
Approved Product List			
Materials Manual			

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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INTERIM SECRETARY

MEMORANDUM

DATE: December 20, 2018

TO: Specification Review Distribution List

FROM: Dan Hurtado, P.E., State Specifications Engineer

SUBJECT: Proposed Specification: **9710202 Pavement Marking Materials.**

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

This change was proposed by Ken Bergum of the State Materials Office (SMO) 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 **January 17, 2019**, may not be considered. Your input is encouraged.

DH/dt

Attachment

PAVEMENT MARKING MATERIALS.
(REV 11-28-18)

SUBARTICLE 971-2.2 is deleted and the following substituted:

971-2.2 Specific Properties: The large (Type 3 or larger) glass spheres used for drop on beads shall have an adhesion coating. Type 1 glass spheres used for drop on beads shall have a dual coating. Beads used in the intermix of materials are not required to be coated.

The following physical requirements apply:

Property	Test Method	Specification
Roundness*	ASTM D1155 <u>FM 5-620</u>	Min: 70 % by weight
Roundness**	ASTM D1155 <u>FM 5-620</u>	Min: 80% by weight
Refractive Index*	Becke Line Method (25+/-5C)	1.5 minimum
Refractive Index**	Becke Line Method (25+/-5C)	1.9 minimum

*Type 1, 3, 4 and 5 beads
**High Index beads

Sieve Size	Percent by Mass Passing Designated Sieve (ASTM D1214 <u>FM 5-620</u>)				
	Grading Designation				
	Type 1 (AASHTO)	Type 3 (FP 96)	Type 4 (FP 96)	Type 5 (FP 96)	High Index
No. 8				100	
No. 10			100	95 - 100	
No. 12		100	95 - 100	80 - 95	
No. 14		95 - 100	80 - 95	10 - 40	
No. 16	100	80 - 95	10 - 40	0 - 5	100
No. 18		10 - 40	0 - 5	0 - 2	
No. 20	95 - 100	0 - 5	0 - 2		95 - 100
No. 25		0 - 2			
No. 30	75 - 95				55 - 85
No. 40					15 - 45
No. 50	15 - 35				0 - 5
No. 80					
No. 100	0 - 5				

SUBARTICLE 971-2.4 is deleted and the following substituted:

971-2.4 Containers: The spheres shall be furnished in new 50 pound moisture-proof bags ~~or 2000 pound triwall boxes~~. All containers shall meet Interstate Commerce Commission requirements for strength and type.

SUBARTICLE 971-3.2 is deleted and the following substituted:

971-3.2 Composition:

Component	Test Method	Criteria
Total Solids, by weight	ASTM D2369	minimum 75%
Pigments, by weight	ASTM D3723	minimum 57%
Vehicle Solids % of Vehicle*		minimum 40%
TiO ₂ , Type II Rutile (white paint only)	ASTM D476	minimum 1.0 lb/gal
Volatile Organic Content, (VOC)	ASTM D3960	maximum 150 g/L
*Vehicle Solids % of Vehicle = $\frac{-(\% \text{ total solids} - \% \text{ pigment})}{(100 - \% \text{ pigment})}$		

SUBARTICLE 971-4.2 is deleted and the following substituted:

971-4.2 Composition:

Component	Test Method	Criteria
Total Solids, by weight	ASTM D2369	75% minimum
Pigments, by weight	ASTM D3723	57% minimum
Vehicle Solids, % on Vehicle*		40% minimum
TiO ₂ , Type II Rutile (white paint only)	ASTM D476	1.0 lb/gal minimum
Volatile Organic Content, (VOC)	ASTM D3960	150 g/L maximum
*Vehicle Solids % of Vehicle = $\frac{-(\% \text{ total solids} - \% \text{ pigment})}{(100 - \% \text{ pigment})}$		
Vehicle solids shall be 100% acrylic emulsion polymer.		

SUBARTICLE 971-4.3 is deleted and the following substituted:

971-4.3 Physical Requirements: Test laboratory samples in accordance with ASTM E811 and E1349. ~~and also~~ Samples must meet the following criteria:

Property	Test Method	Minimum	Maximum
Density	ASTM D1475	13.5 ± 1.4 lb/gal	N/A
Viscosity at 77°F	ASTM D562	80 KU	100 KU
Fineness of Grind	ASTM D1210	3(HS)	
Dry Opacity at 5 mils WFT	ASTM D2805	0.92	-
Bleed Ratio	ASTM D969	0.95	-
Flexibility	ASTM D522 Method B	Pass	-
Abrasion Resistance	ASTM D4060	Pass	-

SUBARTICLE 971-5.2 is deleted and the following substituted:

971-5.2 Composition:

Component	Test Method	White	Yellow
Binder	<u>AASHTO T250</u>	20.0% minimum	20.0% minimum
TiO ₂ , Type II Rutile	ASTM D476	10.0% minimum	-
Glass Spheres	AASHTO T250	40.0% minimum	40.0% minimum
Yellow Pigment		-	% minimum per manufacturer
Calcium Carbonate and Inert Filler (-200 mesh sieve)		30.0% maximum	37.5% maximum

Percentages are by weight.

SUBARTICLE 971-9.2 is deleted and the following substituted:

971-9.2 Composition:

Component	Test Method	White	Yellow
Binder	<u>AASHTO T250</u>	20.0% minimum	20.0% minimum
TiO ₂ , Type II Rutile	ASTM D476	10.0% minimum	-
Reflective Elements	AASHTO T250	% minimum per manufacturer	% minimum per manufacturer
Yellow Pigment		-	% minimum per manufacturer

Component	Test Method	White	Yellow
Calcium Carbonate and Inert Filler (-200 mesh sieve)		% minimum per manufacturer	% minimum per manufacturer
Note: Percentages are by weight.			

SUBARTICLE 971-10.2 is deleted and the following substituted:

971-10.2 Composition:

Component	Test Method	White
Binder	<u>AASHTO T250</u>	18.0% minimum
TiO ₂ , Type <u>II</u> Rutile	ASTM D476	10.0% minimum
Reflective Elements	AASHTO T250	30% minimum per manufacturer
Skid Resistant Elements		10% minimum per manufacturer
Note: Percentages are by weight.		