



Florida Department of Transportation

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605 Suwannee Street
Tallahassee, FL 32399-0450

JIM BOXOLD
SECRETARY

July 22, 2015

Khoa Nguyen
Director, Office of Technical Services
Federal Highway Administration
3500 Financial Plaza, Suite 400
Tallahassee, Florida 32312

Re: State Specifications Office
Section **970**
Proposed Specification: **9700100 Materials for Raised Retroreflective Pavement
Markers and Bituminous Adhesive.**

Dear Mr. Nguyen:

We are submitting, for your approval, two copies of the above referenced Supplemental Specification.

This change was proposed by Chester Henson of the State Roadway Design Office to provide manufacturing criteria for Class D temporary markers. This change is associated with changes to 102, 710, and 990.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via email to daniel.scheer@dot.state.fl.us.

If you have any questions relating to this specification change, please call me at 414-4130.

Sincerely,

Signature on File

Daniel Scheer, P.E.
State Specifications Engineer

DS/ft
Attachment

cc: Florida Transportation Builders' Assoc.
State Construction Engineer

MATERIALS FOR RAISED RETROREFLECTIVE PAVEMENT MARKERS AND BITUMINOUS ADHESIVE.

(REV ~~6-2-156-104-156-16-156-17-157-22-15~~)

ARTICLE 970-1 is deleted and the following substituted:

970-1 Raised Retroreflective Pavement Markers (RPM).

All raised pavement markers shall be one of the products listed on the Department's Approved Product List (APL). Manufacturers seeking evaluation of their product must submit an application in accordance with Section 6 and include independent testing showing the product meets the requirements of this section and 990. The Department will test all raised pavement markers in accordance with FM 5-566.

~~970-1.1 Composition: The marker shall consist of materials conforming to ASTM D4280.~~

~~970-1.2 Physical Requirements: The physical size of the RPM shall conform to the requirements of ASTM D4280. Laboratory and field samples for RPMs and bituminous adhesives shall meet the requirements of ASTM D4280 and include the following requirements:~~

~~The minimum area of each retroreflective face for Class A and B RPMs shall be 2.5 square inches. The minimum base size for Class A and B RPMs shall be 12 square inches.~~

~~970-1.2.1 Designation of Marker Type, Color and Classification: The marker description shall be in order of type, color and retroreflective surface condition in accordance with ASTM D4280 and the following chart.~~

RPM Class			
Class	Description	Expected Normal Service	ASTM Surface Designation
A	Temporary marker	Up to six months	none
B	Permanent marker	Long life	H, hard abrasion resistant lens
D	<i>Temporary, flexible - retroreflective tabs</i>	<i>One month</i>	<i>Monodirectional yellow marker</i>
			<i>Bidirectional yellow marker</i>

~~970-1.3.2 Performance Requirements.~~

~~970-2.1 Class A and B Markers: The RPM shall meet the performance requirements specified in ASTM D4280, Section 6.2, for luminous intensity, flexural strength, compressive strength, resistance to cracking, and thermal cycling, as modified herein. Test method FM 5-566 will be used to evaluate marker performance.~~

~~970-12.31.1 Composition: The marker shall consist of materials conforming to ASTM D4280.~~

~~970-12.31.2 Physical Requirements: The physical size of the RPM shall conform to the requirements of ASTM D4280. Laboratory and field samples for RPMs and bituminous adhesives shall meet the requirements of ASTM D4280 and include the following requirements:~~

~~The minimum area of each retroreflective face shall be 2.5 square inches. The minimum base size shall be 12 square inches.~~

~~970-12.31.1.3 Class A Markers: Meet the coefficient of luminous intensity requirements of ASTM D4280. Abrasion treatment is not required for Class A Markers.~~

970-12.31.2.4 Class B (Abrasion Resistant) Markers: Meet the coefficient of luminous intensity requirements of ASTM D4280 after abrasion. Each marker shall be marked as abrasion resistant by the manufacturer.

970-12.31.3.5 In-service Service Minimum Retroreflective Intensity: ~~The~~ Class B *retroreflective* pavement markers shall retain a minimum coefficient of luminous intensity for 18 months of not less than 30% of the values shown in Table 1 of ASTM D4280, and a minimum luminous intensity of 0.2 cd/fc at the end of two years.

~~970-1.3.6.2 Application Properties: Application properties shall meet the requirements of Section 706.~~ **Performance Requirements – Class D Markers:-** *Meet the requirements of Section 990.*

~~970-1.5.3 Packaging and Labeling:-~~

Shipment shall be made in containers which are acceptable to common carriers and packaged in ~~such~~ a manner ~~as to~~ *which* ensures delivery ~~is~~ in perfect condition. Each package shall be clearly marked as to the name of the manufacturer, type, color, quantity enclosed and date of manufacture. Show the designation of the marker in accordance with ASTM D4280, ~~and~~. *Show the product name as it appears on the APL.*

MATERIALS FOR RAISED RETROREFLECTIVE PAVEMENT MARKERS AND BITUMINOUS ADHESIVE.

(REV 7-22-15)

ARTICLE 970-1 is deleted and the following substituted:

970-1 Raised Retroreflective Pavement Markers (RPM).

All raised pavement markers shall be one of the products listed on the Department's Approved Product List (APL). Manufacturers seeking evaluation of their product must submit an application in accordance with Section 6 and include independent testing showing the product meets the requirements of this section and 990. The Department will test all raised pavement markers in accordance with FM 5-566.

The marker description shall be in order of type, color and retroreflective surface condition in accordance with ASTM D4280 and the following chart.

RPM Class			
Class	Description	Expected Normal Service	ASTM Surface Designation
A	Temporary marker	Up to six months	none
B	Permanent marker	Long life	H, hard abrasion resistant lens
D	Temporary , flexible retroreflective tabs	One month	Monodirectional yellow marker
			Bidirectional yellow marker

970-2 Performance Requirements.

970-2.1 Class A and B Markers: The RPM shall meet the performance requirements specified in ASTM D4280, Section 6.2, for luminous intensity, flexural strength, compressive strength, resistance to cracking, and thermal cycling, as modified herein.

970-2.1.1 Composition: The marker shall consist of materials conforming to ASTM D4280.

970-2.1.2 Physical Requirements: The physical size of the RPM shall conform to the requirements of ASTM D4280. Laboratory and field samples for RPMs and bituminous adhesives shall meet the requirements of ASTM D4280 and include the following requirements:

The minimum area of each retroreflective face shall be 2.5 square inches. The minimum base size shall be 12 square inches.

970-2.1.3 Class A Markers: Meet the coefficient of luminous intensity requirements of ASTM D4280. Abrasion treatment is not required for Class A Markers.

970-2.1.4 Class B (Abrasion Resistant) Markers: Meet the coefficient of luminous intensity requirements of ASTM D4280 after abrasion. Each marker shall be marked as abrasion resistant by the manufacturer.

970-2.1.5 In-Service Minimum Retroreflective Intensity: Class B retroreflective pavement markers shall retain a minimum coefficient of luminous intensity for 18 months of not less than 30% of the values shown in Table 1 of ASTM D4280, and a minimum luminous intensity of 0.2 cd/fc at the end of two years.

970-2.2 Performance Requirements – Class D Markers: Meet the requirements of Section 990.

970-3 Packaging and Labeling.

Shipment shall be made in containers which are acceptable to common carriers and packaged in a manner which ensures delivery in perfect condition. Each package shall be clearly marked as to the name of the manufacturer, type, color, quantity enclosed and date of manufacture. Show the designation of the marker in accordance with ASTM D4280, and show the product name as it appears on the APL.