



Florida Department of Transportation

JEB BUSH
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

THOMAS F. BARRY, JR.
SECRETARY

December 5, 2002

Mr. Donald Davis
Program Operations Engineer
Federal Highway Administration
227 N. Bronough Street, Suite 2015
Tallahassee, Florida 32301

Re: Office of Design, Specifications
Section 706
Proposed Specification: D7060000.D04

Dear Mr. Davis:

We are submitting, for your approval, two copies of a proposed Supplemental Specification for Raised Retro-Reflective Pavement Markers and Bituminous Adhesive.

This change has been developed by Philip Lancaster, of the State Materials Office to require the Contractor to provide a certification conforming to the requirements of Section 6. This revision is part of the process change in the method of accepting manufactured products.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via Email to SP965DB or duane.brautigam@dot.state.fl.us.

If you have any questions relating to this specification change, please call Duane F. Brautigam, State Specifications Engineer at 414-4110.

Sincerely,

Signature on file
Duane F. Brautigam, P.E.
State Specifications Engineer

DFB/jf
Attachment

cc: General Counsel
Florida Transportation Builders' Assoc.
State Construction Engineer

**RAISED RETRO-REFLECTIVE PAVEMENT MARKERS AND
BITUMINOUS ADHESIVE.
(REV 11-14-02)**

SECTION 706 (Pages 773-775) is deleted and the following substituted:

**SECTION 706
RAISED RETRO-REFLECTIVE PAVEMENT MARKERS AND
BITUMINOUS ADHESIVE**

706-1 Description.

Place raised Retro-Reflective Pavement Markers (RPMs) and adhesive, which upon installation produces a positive guidance system to supplement other reflective pavement markings.

706-2 Materials.

~~Use only RPM materials and bituminous adhesives listed on the Qualified Products List (QPL). Meet the material requirements of Section 970. The Engineer will take random samples of the RPMs in accordance with the Department's Sampling, Testing and Reporting Guide schedule.~~

Use only Class B markers unless otherwise shown on the plans.

Meet the requirements of Section 970.

~~**706-2.1 Certification:** Provide certification to the Engineer in accordance with a certification conforming to the requirements of Section 6, from the manufacturer confirming certifying that the RPMs and adhesives meets the requirements of Section 970.~~

~~**706-2.2 Qualified Products List:** Only use RPM materials and bituminous adhesives listed on the Qualified Products List. Manufacturers seeking evaluation of their product shall submit an application in accordance with Section 6.~~

706-2.1 Product Acceptance on the Project. Use only reflective pavement markers and bituminous adhesive that are listed on the Qualified Products List.

Provide to the Engineer a manufacturer's certification conforming to the requirements of Section 6, which confirms that each product meets the requirements of this Section.

706-3 Equipment.

Use equipment having either thermostatically controlled double boiler type units utilizing heat transfer oil or thermostatically controlled electric heating pots to install hot applied bituminous adhesive. Do not use direct flame melting units with flexible adhesives; however, this type of unit may be used with standard adhesive in accordance with manufacturer's recommendations. Use a melter/applicator unit suited for both melting and pumping the adhesive through heated applicator hoses.

Heat the adhesive to between 375 and 425°F [190 and 220°C] and apply directly to the bonding surface from the melter/applicator by either pumping or pouring. Maintain the application temperature between 375 and 425°F [190 and 220°C]. The adhesive may be reheated. However, do not exceed the manufacturer's recommendations for pot life at application temperatures.

706-4 Application.

Apply RPMs to the bonding surface using bituminous adhesives only. The Engineer will conduct field testing in accordance with FM 5-566. Correct RPMs not applied in accordance with these requirements at no cost to the Department.

Prior to application of adhesive, clean the portion of the bonding surface of any material which would adversely affect the adhesive.

Apply the adhesive to the bonding surface (not the marker) so that 100% of the bonding area of the marker will be covered, in accordance with adhesive manufacturer's recommendations. Apply sufficient adhesive to ensure, that when the marker is pressed downward into the adhesive, adhesive will be forced out around the entire perimeter of the marker.

Immediately remove excess adhesive from the bonding surface and exposed surfaces of the RPMs. Soft rags moistened with mineral spirits meeting Federal Specifications TT-T-291 or kerosene may be used to remove adhesive from exposed faces of the RPMs. Do not use any other solvent. If any adhesive, pavement marking materials or other foreign matter adheres to the reflective face of the marker, replace the marker at no cost to the Department.

Install RPMs with the reflective face of the RPM perpendicular to a line parallel to the roadway centerline. Do not install RPMs over longitudinal or transverse joints of the bonding surface.

Ensure that all final RPMs are in place prior to opening the road to traffic.

If more than 2% of the RPMs fail in adhesion or alignment within the first 45 days under traffic, replace all failed markers at no expense to the Department. If more than 5% of the markers fail in adhesion and or alignment during the initial 45 day period, the Engineer will extend the replacement period an additional 45 days from the date that all replacement markers have been installed. If, at the end of the additional 45 day period, more than 2% of all markers (initial installation and 45 day replacements combined) fail in adhesion or alignment, replace all failed markers at no expense to the Department.

706-5 Contractor's Responsibility for Notification.

Notify the Engineer prior to the placement of RPMs. At the time of notification, indicate the manufacturer and the LOT numbers of RPMs and bituminous adhesive that are intended for use. Verify that the approved LOT numbers appear on the material packages. Furnish a test report to the Engineer certifying that the materials meet all requirements specified.

706-6 Method of Measurement.

The quantities to be paid for will be the number of RPMs, furnished and installed, completed and accepted.

706-7 Basis of Payment.

Price and payment will be full compensation for all work specified in this Section.

Payment will be made under:

- | | |
|-------------------|---|
| Item No. 706- 3- | Retro-Reflective Pavement Markers - each. |
| Item No. 2706- 3- | Retro-Reflective Pavement Markers - each. |

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Meet the requirements of Section 970.

706-2.1 Product Acceptance on the Project. Use only reflective pavement markers and bituminous adhesive that are listed on the Qualified Products List.

Provide to the Engineer a manufacturer's certification conforming to the requirements of Section 6, which confirms that each product meets the requirements of this Section.

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Install RPMs with the reflective face of the RPM perpendicular to a line parallel to the roadway centerline. Do not install RPMs over longitudinal or transverse joints of the bonding surface.

Ensure that all final RPMs are in place prior to opening the road to traffic.

If more than 2% of the RPMs fail in adhesion or alignment within the first 45 days under traffic, replace all failed markers at no expense to the Department. If more than 5% of the markers fail in adhesion and or alignment during the initial 45 day period, the Engineer will extend the replacement period an additional 45 days from the date that all replacement markers have been installed. If, at the end of the additional 45 day period, more than 2% of all markers (initial installation and 45 day replacements combined) fail in adhesion or alignment, replace all failed markers at no expense to the Department.

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