



Florida Department of Transportation

CHARLIE CRIST
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

STEPHANIE KOPELOUSOS
SECRETARY

December 22, 2010

Monica Gourdine
Program Operations Engineer
Federal Highway Administration
545 John Knox Road, Suite 200
Tallahassee, Florida 32303

Re: Office of Design, Specifications
Section 711
Proposed Specification: 7110400 Thermoplastic Traffic Stripes and Markings -
Application.

Dear Ms. Gourdine:

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

These changes were proposed by Chester Henson of the State Roadway Design Office to require the certification of proper thickness of pavement marking prior to acceptance.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via email to SP965RP or rudy.powell@dot.state.fl.us.

If you have any questions relating to this specification change, please call Rudy Powell, State Specifications Engineer at 414-4280.

Sincerely,

Rudy Powell, Jr., P.E.
State Specifications Engineer

RP/cah

Attachment

cc: Gregory Jones, Chief Civil Litigation
Florida Transportation Builders' Assoc.
State Construction Engineer

THERMOPLASTIC TRAFFIC STRIPES AND MARKINGS (REV11-4-10)

ARTICLE 711-4 (of the Supplemental Specification) is deleted and the following substituted:

711-4 Application.

711-4.1 General: Remove existing pavement markings such that scars or traces of removed markings will not conflict with new stripes and markings by a method approved by the Engineer. Cost for removing conflicting pavement markings during maintenance of traffic operations to be included in Maintenance of Traffic, Lump Sum.

Before applying traffic stripes and markings, remove any material by a method approved by the Engineer that would adversely affect the bond of the traffic stripes. Before applying traffic stripes to any Portland cement concrete surface, apply a primer, sealer or surface preparation adhesive of the type recommended by the manufacturer. Offset longitudinal lines at least 2 inches from any longitudinal joints of Portland cement concrete pavement.

Apply traffic stripes or markings only to dry surfaces, and when the ambient air and surface temperature is at least 50°F and rising for asphalt surfaces and 60°F and rising for concrete surfaces.

Apply striping to the same tolerances in dimensions and in alignment specified in 710-5. When applying traffic stripes and markings over existing markings, ensure that not more than 2 inches on either end and not more than 1 inch on either side of the existing line is visible.

Apply thermoplastic material to the pavement either by spray, extrusion or other means approved by the Engineer.

Conduct field tests in accordance with FM 5-541. *Take test readings representative of the striping performance.* Remove and replace traffic stripes and markings not meeting the requirements of this Section at no additional cost to the Department.

Apply all final pavement markings prior to opening the road to traffic.

711-4.1.1 Preformed Thermoplastic: Apply markings only to dry surfaces and when ambient air temperature is at least 32°F. Prior to installation, follow the manufacturer's recommendations for pre-heating.

711-4.2 Thickness:

711-4.2.1 Initial or Recapped Stripes and Markings: Apply or recap traffic stripes or markings such that, ~~before application of drop-on-glass spheres,~~ all lane lines, center lines, transverse markings and traffic stripes and markings within traffic wearing areas (such as dotted turning guide lines), will have a thickness of 0.10 to 0.15 inch when measured above the pavement surface ~~at the edge of the traffic stripe or marking.~~

Also, all gore, island, and diagonal stripe markings, bike lane symbols and messages, wherever located, will have a thickness of 0.09 to 0.12 inch when measured above the pavement surface ~~at the edge of the traffic stripe or marking.~~

Measure, record and certify on Department approved form and submit to the Engineer, the thickness of white and yellow pavement markings in accordance with Florida Method FM 5-541.

711-4.2.2 Refurbishing Existing Traffic Stripes and Markings: Apply a minimum of 0.06 inch of thermoplastic material. Ensure that the combination of the existing stripe and the overlay after application of glass spheres; does not exceed the maximum thickness of 0.150 inch for all lines.

711-4.3 Retroreflectivity: Apply white and yellow traffic stripes and markings that will attain an initial retroreflectivity of not less than 450 mcd/lx·m² and not less than 350 mcd/lx·m², respectively for all longitudinal lines. All transverse lines, messages and arrows will attain an initial retroreflectivity of not less than 300 mcd/lx·m² and 250 mcd/lx·m² for white and yellow respectively. All pedestrian crosswalks, bike lane symbols or messages in a proposed bike lane shall attain an initial retroreflectivity of not less than 275 mcd/lx·m².

Measure, record and certify on Department approved form and submit to the Engineer, the retroreflectivity of white and yellow pavement markings in accordance with Florida Method FM 5-541.

~~—————The Department reserves the right to test the markings within three days of receipt of the Contractor's certification. The test readings should be representative of the Contractor's striping performance. If the retroreflectivity values measure below values shown above, the striping will be removed and reapplied at the Contractor's expense.~~

711-4.4 Glass Spheres:

711-4.4.1 Longitudinal Lines: For initial traffic striping and marking, apply the first drop of Type 4 or larger glass spheres immediately followed by the second drop of Type 1 glass spheres. For refurbishing, apply a single drop of Type 3 glass spheres. Apply reflective glass spheres to all markings at the rates determined by the manufacturer's recommendations.

711-4.4.2 Transverse Stripes and Markings: Apply a single drop of Type 1 glass spheres. Apply reflective glass spheres to all markings at the rates determined by the manufacturer's recommendations.

Apply a mixture consisting of 50% glass spheres and 50% sharp silica sand to all thermoplastic pedestrian crosswalk lines and bike lane symbols at the rates determined by the manufacturer's recommendations.

711-4.4.3 Preformed Markings: These markings are factory supplied with glass spheres and skid resistant material. No additional glass spheres or skid resistant material should be applied during installation.

ARTICLE 711-9 thru 711-10 (of the Supplemental Specification) is deleted and the following substituted:

711-9 Submittals.

711-9.1 Submittal Instructions: Prepare a certification of quantities, using the Department's current approved form, for each project in the Contract. Submit the certification of quantities and daily worksheets to the Engineer. The Department will not pay for any disputed items until the Engineer approves the certification of quantities.

711-9.2 Contractor's Certification of Quantities: Request payment by submitting a certification of quantities no later than Twelve O'clock noon Monday after the estimate cut-off date or as directed by the Engineer, based on the amount of work done or completed. Ensure the certification of quantities consists of the following:

(a) Contract Number, FPID Number, Certification Number, Certification Date and the period that the certification represents.

(b) The basis for arriving at the amount of the progress certification, less payments previously made and less any amount previously retained or withheld. The basis will include a detailed breakdown provided on the certification of items of payment.

711-9.10 Method of Measurement.

~~711-9.1 General:~~ The quantities to be paid for under this Section will be as follows:

(a) The length, in net miles, of 6 inch Solid Traffic Stripe, authorized and acceptably applied.

(b) The total traversed distance in gross miles of 10-30- or 3-9- skip line. The actual applied line is 25% of the traverse distance, for a 1:3 ratio. This equates to 1,320 feet of marking per mile of single line.

(c) The net length, in feet, of all other types of lines and stripes, authorized and acceptably applied.

(d) The area, in square feet, of Removal of Existing Pavement Markings, acceptably removed.

(e) The number of pavement messages, symbols and directional arrows, authorized and acceptably applied.

~~711-9.2 Certification of Quantities Submittal Instructions:~~ Prepare a certification of quantities, using the Department's current approved form, for each project in the Contract. Submit the certification of quantities and daily worksheets to the Engineer. The Department will not pay for any disputed items until the Engineer approves the certification of quantities.

~~Make all requests for payment by submitting these certifications no later than Twelve O'clock noon Monday after the estimate cut off date or as directed by the Engineer, based on the amount of work done or completed. Ensure the certification of quantities consists of the following:~~

~~(a) Contract Number, FPID Number, Certification Number, Certification Date and the period that the certification represents.~~

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711-10.1 Basis of Payment.

Prices and payments will be full compensation for all work specified in this Section, including, all cleaning and preparing of surfaces, furnishing of all materials, application, curing and protection of all items, protection of traffic, furnishing of all tools, machines and equipment, and all incidentals necessary to complete the work. Final payment will be withheld until all deficiencies are corrected.

Payment will be made under:

Item No. 711

Thermoplastic

Traffic Stripes, Solid - per net mile.

Traffic Stripes, Solid - per foot.

Traffic Stripes, Skip - per gross mile.

Dotted/Guideline - per foot.

Messages - each.

Arrows - each.

Yield Markings - per foot.

Thermoplastic, Remove – per square foot.

THERMOPLASTIC TRAFFIC STRIPES AND MARKINGS (REV11-4-10)

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Apply traffic stripes or markings only to dry surfaces, and when the ambient air and surface temperature is at least 50°F and rising for asphalt surfaces and 60°F and rising for concrete surfaces.

Apply striping to the same tolerances in dimensions and in alignment specified in 710-5. When applying traffic stripes and markings over existing markings, ensure that not more than 2 inches on either end and not more than 1 inch on either side of the existing line is visible.

Apply thermoplastic material to the pavement either by spray, extrusion or other means approved by the Engineer.

Conduct field tests in accordance with FM 5-541. Take test readings representative of the striping performance. Remove and replace traffic stripes and markings not meeting the requirements of this Section at no additional cost to the Department.

Apply all final pavement markings prior to opening the road to traffic.

711-4.1.1 Preformed Thermoplastic: Apply markings only to dry surfaces and when ambient air temperature is at least 32°F. Prior to installation, follow the manufacturer's recommendations for pre-heating.

711-4.2 Thickness:

711-4.2.1 Initial or Recapped Stripes and Markings: Apply or recap traffic stripes or markings such that all lane lines, center lines, transverse markings and traffic stripes and markings within traffic wearing areas, will have a thickness of 0.10 to 0.15 inch when measured above the pavement surface.

Also, all gore, island, and diagonal stripe markings, bike lane symbols and messages, wherever located, will have a thickness of 0.09 to 0.12 inch when measured above the pavement surface.

Measure, record and certify on Department approved form and submit to the Engineer, the thickness of white and yellow pavement markings in accordance with Florida Method FM 5-541.

711-4.2.2 Refurbishing Existing Traffic Stripes and Markings: Apply a minimum of 0.06 inch of thermoplastic material. Ensure that the combination of the existing stripe and the overlay after application of glass spheres does not exceed the maximum thickness of 0.150 inch for all lines.

711-4.3 Retroreflectivity: Apply white and yellow traffic stripes and markings that will attain an initial retroreflectivity of not less than $450 \text{ mcd/lx}\cdot\text{m}^2$ and not less than $350 \text{ mcd/lx}\cdot\text{m}^2$, respectively for all longitudinal lines. All transverse lines, messages and arrows will attain an initial retroreflectivity of not less than $300 \text{ mcd/lx}\cdot\text{m}^2$ and $250 \text{ mcd/lx}\cdot\text{m}^2$ for white and yellow respectively. All pedestrian crosswalks, bike lane symbols or messages in a proposed bike lane shall attain an initial retroreflectivity of not less than $275 \text{ mcd/lx}\cdot\text{m}^2$.

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711-11 Basis of Payment.

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	Yield Markings - per foot.
	Thermoplastic, Remove – per square foot.