



Florida Department of Transportation

RON DESANTIS
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

KEVIN J. THIBAUT, P.E.
SECRETARY

February 4, 2020

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

Re: State Specifications Office
Section: **711**
Proposed Specification: **7110402 Thermoplastic Pavement Markings.**

Dear Mr. Nguyen:

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

The changes are proposed by Alan El-Urfali from the Traffic Engineering and Operations Office to implement railroad dynamic envelopes on state roads.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via email to daniel.strickland@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 Strickland, P.E.
State Specifications Engineer

DS/rf

Attachment

cc: Florida Transportation Builders' Assoc.
State Construction Engineer

THERMOPLASTIC PAVEMENT MARKINGS**(REV ~~12-3119-2019~~)**

SUBARTICLE 711-4.2.1 is deleted and the following substituted:

711-4.2 Thickness:

711-4.2.1 Standard Thermoplastic Markings: Apply or recap standard thermoplastic pavement markings for longitudinal lines to attain a minimum thickness of 0.10 inch or 100 mils and a maximum thickness 0.15 inch or 150 mils when measured above the pavement surface.

All chevrons, diagonal and transverse lines, messages, symbols, railroad dynamic envelopes and arrows, wherever located, will have a thickness of 0.09 inch or 90 mils to 0.12 inch or 120 mils 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 FM 5-541.

The Engineer will verify the thickness of the pavement markings in accordance with FM 5-541 within 30 days of receipt of the Contractor's certification.

SUBARTICLE 711-4.2.3 is deleted and the following substituted:

711-4.2.3 Preformed Thermoplastic: Apply 0.125 inch or 125 mils of preformed thermoplastic material. Use preformed thermoplastic for bicycle markings, shared use path markings, 24 inch markings ~~of the for~~ special emphasis crosswalks, route shields, ramp exit numbers, roundabout informational markings, white dotted lines (2'-4') with trailing black contrast, and black contrast arrows, messages, and symbols. On concrete surfaces, use preformed thermoplastic for railroad dynamic envelope markings.

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

SUBARTICLE 711-4.3 is deleted and the following substituted:

711-4.3 Retroreflectivity: Apply white and yellow pavement 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 chevrons, diagonal lines, stop lines, messages, symbols, railroad dynamic envelopes on asphalt 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 crosswalks, railroad dynamic envelopes on concrete, and bicycle markings shall attain an initial retroreflectivity of not less than 275 mcd/lx·m². Black pavement markings must have a retroreflectance of less than 5 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 FM 5-541.

SUBARTICLE 711-4.4.2 is deleted and the following substituted:

711-4.4.2 Chevrons, Diagonal and Transverse Lines, Messages, Symbols, Railroad Dynamic Envelopes, and Arrows: For standard or refurbishment thermoplastic markings, apply a single drop of Type 1 glass spheres. Apply retroreflective 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 standard thermoplastic crosswalk lines at the rates determined by the manufacturer's recommendations.

SUBARTICLE 711-9.2 is deleted and the following substituted:

711-9.2 Contractor's Certification of Quantities: For all items except Railroad Dynamic Envelope, 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:

1. Contract Number, FPID Number, Certification Number, Certification Date and the period that the certification represents.
2. 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.

ARTICLE 711-10 is deleted and the following substituted:

711-10 Method of Measurement.

711-10.1 Certified Quantities: The certified quantities, authorized and acceptably applied, under this Section will be paid as follows:

1. The length, in gross miles, of solid, 10'-30' skip, 3'-9' dotted, 6'-10' dotted, 2'-2' dotted, and 2'-4' dotted lines.
2. The length, in linear feet, of transverse lines, diagonal lines, chevrons, and parking spaces.
3. The number of pavement messages, symbols, and arrows. Each arrow is paid as a complete marking, regardless of the number of "points" or directions.
4. The area, in square feet, for removal of existing thermoplastic pavement markings acceptably removed. Payment for removal of thermoplastic pavement markings will only be made for locations where the existing pavement surface is to remain.

The gross mile measurement will be taken as the distance from the beginning of the thermoplastic line to the end of the thermoplastic line and will include the unmarked gaps for skip and dotted lines. The gross mile measurement will not include designated unmarked lengths at intersections, turn lanes, etc. Final measurement will be determined by plan dimensions or stations, subject to 9-1.3.1.

711-10.2 Plan Quantities: The plan quantity length, in linear feet of railroad dynamic envelope markings.

ARTICLE 711-11 is deleted and the following substituted:

711-11 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 Pavement Markings
	Solid - per gross mile.
	Solid - per linear foot.
	Skip - per gross mile.
	Dotted - per gross mile.
	Message or Symbol - each.
	Arrows - each.
	Yield Line - per linear foot.
	<u>Railroad Dynamic Envelope - per linear foot.</u>
	Remove - per square foot.

THERMOPLASTIC PAVEMENT MARKINGS**(REV 1-31-20)**

SUBARTICLE 711-4.2.1 is deleted and the following substituted:

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All chevrons, diagonal and transverse lines, messages, symbols, railroad dynamic envelopes and arrows, wherever located, will have a thickness of 0.09 inch or 90 mils to 0.12 inch or 120 mils 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 FM 5-541.

The Engineer will verify the thickness of the pavement markings in accordance with FM 5-541 within 30 days of receipt of the Contractor's certification.

SUBARTICLE 711-4.2.3 is deleted and the following substituted:

711-4.2.3 Preformed Thermoplastic: Apply 0.125 inch or 125 mils of preformed thermoplastic material. Use preformed thermoplastic for bicycle markings, shared use path markings, 24 inch markings for special emphasis crosswalks, route shields, ramp exit numbers, roundabout informational markings, white dotted lines (2'-4') with trailing black contrast, and black contrast arrows, messages, and symbols. On concrete surfaces, use preformed thermoplastic for railroad dynamic envelope markings.

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	Remove - per square foot.