



Florida Department of Transportation

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Tallahassee, FL 32399-0450

JARED W. PERDUE, P.E.
SECRETARY

November 2, 2023

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

Re: State Specifications Office
Section: 710
Proposed Specification: **7100402 Painted Pavement Markings.**

Dear Mr. Nguyen:

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

The changes are proposed by Awilda Merced to specify minimum wet film thickness, correct unit of reflectivity, and specify project acceptance method.

Please review and transmit your comments, if any, within two weeks (10 business days). Comments should be sent via email daniel.strickland@dot.state.fl.us.

If you have any questions relating to this specification change, please call me at (850) 414-4130.

Sincerely,

Signature on File

Daniel Strickland, P.E.
State Specifications Engineer

DS/jb

Attachment

cc: Florida Transportation Builders' Assoc.
State Construction Engineer

PAINTED PAVEMENT MARKINGS.
(REV 7-10-23)

ARTICLE 710-4 is deleted and the following substituted:

710-4 Application.

710-4.1 General: Remove existing pavement markings, such that scars or traces of removed markings will not conflict with new pavement markings, by a method approved by the Engineer.

Before applying pavement markings, remove any material that would adversely affect the bond of the pavement markings by a method approved by the Engineer.

Apply standard paint to dry surfaces only, and when the ambient air and surface temperature is at least 40°F and rising.

Apply durable paint to dry surfaces only. Do not apply durable paint when the ambient air and surface temperature is below 50°F, relative humidity is above 80% or when the dew point is within 5°F of the ambient air temperature.

Do not apply painted pavement markings when winds are sufficient to cause spray dust.

Apply painted pavement markings, having well defined edges, over existing pavement markings such that not more than 2 inches on either end and not more than 1 inch on either side is visible. When stencils are used to apply symbols and messages, the areas covered by the stencil reinforcing will not be required to be painted.

Mix the paint thoroughly prior to pouring into the painting machine. Apply paint to the pavement by spray or other means approved by the Engineer.

Conduct field testing in accordance with FM 5-541 [Part A](#). Remove and replace painted pavement markings not meeting the requirements of this Section at no additional cost to the Department.

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

710-4.1.1 Painted Pavement Markings (Final Surface): On concrete surfaces or newly constructed asphalt, the painted pavement markings (final surface) will include one application of standard paint applied to the final surface.

For center line and edge line rumble strip installations where the pavement marking is placed within the grinding, apply a second application of standard paint within 24 hours of each day's grinding operation.

Do not apply final surface paint for bicycle arrows or bicycle messages, 24 inch longitudinal bars in special emphasis crosswalks, or route shields where preformed thermoplastic will be applied.

710-4.2 Thickness: Apply standard paint to attain a minimum wet film thickness of 0.015 inches or 15 mils in accordance with the manufacturer's recommendations. Apply durable paint to attain a minimum wet film thickness of 0.025 inches or 25 mils. Measure, record, and certify on a Department approved form and submit to the Engineer, the thickness of white and yellow durable paint pavement markings in accordance with FM 5-541 [Part A](#).

710-4.3 Retroreflectivity: Apply white and yellow standard paint that will attain an initial retroreflectance of not less than 300 ~~med/lx-m²~~ mcd/m²/lx and not less than 250 ~~med/lx-m²~~ mcd/m²/lx, respectively. Apply white and yellow durable paint that will attain an initial retroreflectance of not less than 450 ~~med/lx-m²~~ mcd/m²/lx and not less than

300 $\frac{\text{med}}{\text{lx}\cdot\text{m}^2} \frac{\text{mcd}}{\text{m}^2/\text{lx}}$, respectively. Black pavement markings must have a retroreflectance of less than 20 $\frac{\text{med}}{\text{lx}\cdot\text{m}^2} \frac{\text{mcd}}{\text{m}^2/\text{lx}}$.

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

The Department reserves the right to test the markings within three days of receipt of the Contractor's certification. Failure to afford the Department opportunity to test the markings will result in non-payment. The test readings should be representative of the Contractor's pavement marking performance. If the retroreflectivity values measure below values shown above, reapply the pavement marking at no additional cost to the Department.

For standard paint, ensure that the minimum retroreflectance of white and yellow pavement markings are not less than 150 $\frac{\text{med}}{\text{lx}\cdot\text{m}^2} \frac{\text{mcd}}{\text{m}^2/\text{lx}}$. If the retroreflectivity values for standard paint fall below the 150 $\frac{\text{med}}{\text{lx}\cdot\text{m}^2} \frac{\text{mcd}}{\text{m}^2/\text{lx}}$ value within 180 days of initial application, the pavement marking will be reapplied at the Contractor's expense. If the retroreflectivity values for durable paint fall below the initial values of 450 $\frac{\text{med}}{\text{lx}\cdot\text{m}^2} \frac{\text{mcd}}{\text{m}^2/\text{lx}}$ value for white and 300 $\frac{\text{med}}{\text{lx}\cdot\text{m}^2} \frac{\text{mcd}}{\text{m}^2/\text{lx}}$ for yellow within 180 days of initial application, the pavement marking will be reapplied at the Contractor's expense.

710-4.4 Color: Use paint material that meets the requirements of 971-1.

710-4.5 Glass Spheres: Apply glass spheres on all pavement markings immediately and uniformly following the paint application. The rate of application shall be based on the manufacturer's recommendation.

For longitudinal durable paint markings, apply a double drop of Type 1 and Type 3 glass spheres. For transverse durable paint markings, apply a single drop of Type 3 glass spheres.

The rate of application shall be based on the manufacturer's recommendation.

PAINTED PAVEMENT MARKINGS.
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710-4 Application.

710-4.1 General: Remove existing pavement markings, such that scars or traces of removed markings will not conflict with new pavement markings, by a method approved by the Engineer.

Before applying pavement markings, remove any material that would adversely affect the bond of the pavement markings by a method approved by the Engineer.

Apply standard paint to dry surfaces only, and when the ambient air and surface temperature is at least 40°F and rising.

Apply durable paint to dry surfaces only. Do not apply durable paint when the ambient air and surface temperature is below 50°F, relative humidity is above 80% or when the dew point is within 5°F of the ambient air temperature.

Do not apply painted pavement markings when winds are sufficient to cause spray dust.

Apply painted pavement markings, having well defined edges, over existing pavement markings such that not more than 2 inches on either end and not more than 1 inch on either side is visible. When stencils are used to apply symbols and messages, the areas covered by the stencil reinforcing will not be required to be painted.

Mix the paint thoroughly prior to pouring into the painting machine. Apply paint to the pavement by spray or other means approved by the Engineer.

Conduct field testing in accordance with FM 5-541 Part A. Remove and replace painted pavement markings not meeting the requirements of this Section at no additional cost to the Department.

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

710-4.1.1 Painted Pavement Markings (Final Surface): On concrete surfaces or newly constructed asphalt, the painted pavement markings (final surface) will include one application of standard paint applied to the final surface.

For center line and edge line rumble strip installations where the pavement marking is placed within the grinding, apply a second application of standard paint within 24 hours of each day's grinding operation.

Do not apply final surface paint for bicycle arrows or bicycle messages, 24 inch longitudinal bars in special emphasis crosswalks, or route shields where preformed thermoplastic will be applied.

710-4.2 Thickness: Apply standard paint to attain a minimum wet film thickness of 0.015 inches or 15 mils . Apply durable paint to attain a minimum wet film thickness of 0.025 inches or 25 mils. Measure, record, and certify on a Department approved form and submit to the Engineer, the thickness of white and yellow durable paint pavement markings in accordance with FM 5-541 Part A.

710-4.3 Retroreflectivity: Apply white and yellow standard paint that will attain an initial retroreflectance of not less than 300 mcd/m²/lx and not less than 250 mcd/m²/lx, respectively. Apply white and yellow durable paint that will attain an initial retroreflectance of

not less than 450 mcd/m²/lx and not less than 300 mcd/m²/lx, respectively. Black pavement markings must have a retroreflectance of less than 20 mcd/m²/lx.

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

The Department reserves the right to test the markings within three days of receipt of the Contractor's certification. Failure to afford the Department opportunity to test the markings will result in non-payment. The test readings should be representative of the Contractor's pavement marking performance. If the retroreflectivity values measure below values shown above, reapply the pavement marking at no additional cost to the Department.

For standard paint, ensure that the minimum retroreflectance of white and yellow pavement markings are not less than 150 mcd/m²/lx. If the retroreflectivity values for standard paint fall below the 150 mcd/m²/lx value within 180 days of initial application, the pavement marking will be reapplied at the Contractor's expense. If the retroreflectivity values for durable paint fall below the initial values of 450 mcd/m²/lx value for white and 300 mcd/m²/lx for yellow within 180 days of initial application, the pavement marking will be reapplied at the Contractor's expense.

710-4.4 Color: Use paint material that meets the requirements of 971-1.

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