



*Florida Department of Transportation*

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GOVERNOR

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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: 974  
Proposed Specification: **9740100 Surface Applications.**  
Associated with Proposed Specification: **7140000 (new section)**

Dear Mr. Nguyen:

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

The changes are proposed by Guangming Wang to add the (previous Developmental Specification) Green-Colored Pavement Markings to the Standard Specifications.

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](mailto: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/dh

Attachment

cc: Florida Transportation Builders' Assoc.  
State Construction Engineer

**SURFACE APPLICATIONS.**

**(REV 9-26-23)**

ARTICLE 974-1 is deleted and the following substituted:

**974-1 Description.**

This section specifies the material requirements for detectable warnings ~~and~~, patterned pavement and green-colored pavement markings.

SECTION 974 is expanded by the following new Article:

**974-4 Green-Colored Pavement Markings.**

Provide high-quality materials, producing an adherent, weather-resistant, friction-resistant, wear-resistant surface, and shall be uniformly distributed throughout the cross-sectional area. Color shall be integral and consistent throughout the installation.

**974-4.1 Approved Product List Requirements:** Manufacturers seeking evaluation of products for inclusion on the APL shall submit an application in accordance with Section 6 and include the documentation identified in Table 974-5. Documentation and reports must demonstrate that the product meets the requirements of this Section. Manufacturers must identify the materials for all components of the green-colored pavement marking materials system including friction materials.

<u>Table 974-5</u>	
<u>Documentation</u>	<u>Requirements</u>
<u>Product Photo</u>	<u>Displays the significant features of the product.</u>
<u>Technical Data Sheet</u>	<u>Uniquely identifies the product and includes product specifications, storage instructions, and shelf life.</u>
<u>Installation Instructions</u>	<u>Uniquely identifies the product and includes the following information as applicable:</u> <ol style="list-style-type: none"> <li><u>1. Surface preparation and installation procedures for different substrates such as concrete and asphalt surfaces.</u></li> <li><u>2. The minimum substrate curing time prior to installing the product.</u></li> <li><u>3. Installation materials and equipment.</u></li> <li><u>4. Resin, sealers, coatings, coloring, and friction materials.</u></li> <li><u>5. Friction material source and rate of application.</u></li> <li><u>6. Number of coats and the thickness of each coat.</u></li> </ol>
<u>Product Label</u>	<u>For each component of the product system. Labels must contain the following information as applicable:</u> <ol style="list-style-type: none"> <li><u>1. Uniquely identifies the product name.</u></li> <li><u>2. Address of the manufacturer.</u></li> <li><u>3. Show the color, date of manufacture, and lot number.</u></li> <li><u>4. Warning of any special handling or precautions of the material, as recommended by the manufacturer.</u></li> <li><u>5. The two reactive component material shall be clearly marked with the volume of materials in units of gallons and</u></li> </ol>

<u>Table 974-5</u>	
<u>Documentation</u>	<u>Requirements</u>
	<u>the product name.</u> <u>6. The thermoplastic material shall be clearly marked with the thickness of the preformed material in units of inches.</u>
<u>Product Packaging</u>	<u>The thermoplastic material shall be packaged in suitable biodegradable or thermo-degradable containers which will not adhere to the product during shipment and storage.</u>
<u>Safety Data Sheet (SDS)</u>	<u>SDS meeting OSHA requirements for each product component and manufacturer recommended installation materials as applicable. Non-Hazardous, per RCRA Subtitle C Table 1 of 40 CFR 261.24 "Toxicity Characteristic" and not exude fumes which are hazardous, toxic, or detrimental to persons or property.</u>
<u>Independent Laboratory Test Report</u>	<u>Glass elements shall contain no more than 200 ppm by weight of lead or arsenic when tested in accordance with the Environmental Protection Agency (EPA) Testing Methods 3052, 6010B, and 6010C.</u>
<u>Independent Laboratory Test Report</u>	<u>Report color and friction before polishing in accordance with FM 5-622 Part A</u>
<u>Product Sample for Department Testing</u>	<u>Submit upon request from the Department. If the product is a system, a sample of each component must be submitted.</u>
<u>Product Panels for Department Testing</u>	<u>Submit upon request from the Department. Prepare panels in accordance with FM 5-622-Part A</u>

**974-4.2 Performance Requirements:** Provide colored pavement products that meet the performance requirements of Table 974-6 and Table 974-7 this Section.

**974-4.2.1 Department Testing:** Submit product samples and panels for Department analysis upon request from the Department and in accordance with this Specification. Products are subject to verification testing in accordance with this Section and infrared identification test.

<u>Table 974-6</u>		
<u>Property</u>	<u>Documentation</u>	<u>Test Method and Value</u>
<u>Color</u>	<u>Department Testing Reports</u>	<u>The daytime chromaticity (x, y), both before and after polishing and accelerated weathering, must fall within the box in Table 974-7.</u>
<u>Daytime Luminescence Factor (Y)</u>	<u>Department Testing Reports</u>	<u>Must be greater than or equal to 15, both before and after polishing and accelerated weathering.</u> <u>[FM 5-622 Part A]</u>
<u>Wear</u>	<u>Department Field Service Test Photos</u>	<u>Visual, Wearing shall not expose more than 15% of the underlying surface area as measured within the traveled way for 3 years.</u>

<u>Table 974-6</u>		
<u>Property</u>	<u>Documentation</u>	<u>Test Method and Value</u>
<u>Initial Friction Resistance</u>	<u>Department Testing Reports</u>	<u>Dynamic Friction Tester (DFT40) <math>\geq 50</math> in accordance with [FM 5-622 Part A]</u>
<u>In-service Friction Resistance]</u>	<u>Department Testing Report</u>	<u>Dynamic Friction Test (DFT40) value of 40 or greater in accordance with [FM 5-622 Part B</u>

**974-4.2.2 Green Color Requirements:**

<u>Table 974-7<del>5</del></u>				
<u>Daytime Chromaticity Coordinates for Green-Colored Pavement Marking Materials (Corner Points)</u>				
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
<u>x</u>	<u>0.230</u>	<u>0.266</u>	<u>0.367</u>	<u>0.444</u>
<u>y</u>	<u>0.754</u>	<u>0.460</u>	<u>0.480</u>	<u>0.583</u>

**974-4.2.3 Pavement Distress:** Pavement distress occurring after installation of colored pavement marking materials may result in removal from the APL, and require the manufacturer to mill, resurface, replace, and install with a product on the APL at no additional cost to the Department.

**SURFACE APPLICATIONS.****(REV 9-26-23)**

ARTICLE 974-1 is deleted and the following substituted:

**974-1 Description.**

This section specifies the material requirements for detectable warnings, patterned pavement and green-colored pavement markings

SECTION 974 is expanded by the following new Article:

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Table 974-5	
Documentation	Requirements
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Safety Data Sheet (SDS)	SDS meeting OSHA requirements for each product component and manufacturer recommended installation materials as applicable. Non-Hazardous, per RCRA Subtitle C Table 1 of 40 CFR 261.24 "Toxicity Characteristic" and not exude fumes which are hazardous, toxic, or detrimental to persons or property.
Independent Laboratory Test Report	Glass elements shall contain no more than 200 ppm by weight of lead or arsenic when tested in accordance with the Environmental Protection Agency (EPA) Testing Methods 3052, 6010B, and 6010C.
Independent Laboratory Test Report	Report color and friction before polishing in accordance with FM 5-622 Part A
Product Sample for Department Testing	Submit upon request from the Department. If the product is a system, a sample of each component must be submitted.
Product Panels for Department Testing	Submit upon request from the Department. Prepare panels in accordance with FM 5-622-Part A

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Daytime Luminescence Factor (Y)	Department Testing Reports	Must be greater than or equal to 15, both before and after polishing and accelerated weathering. [FM 5-622 Part A]
Wear	Department Field Service Test Photos	Visual, Wearing shall not expose more than 15% of the underlying surface area as measured within the traveled way for 3 years.

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Initial Friction Resistance	Department Testing Reports	Dynamic Friction Tester (DFT40) $\geq 50$ in accordance with [FM 5-622 Part A]
In-service Friction Resistance]	Department Testing Report	Dynamic Friction Test (DFT40) value of 40 or greater in accordance with [FM 5-622 Part B

**974-4.2.2 Green Color Requirements:**

Table 974-7				
Daytime Chromaticity Coordinates for Green-Colored Pavement Marking Materials (Corner Points)				
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x	0.230	0.266	0.367	0.444
y	0.754	0.460	0.480	0.583

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