



Florida Department of Transportation

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Tallahassee, FL 32399-0450

KEVIN J. THIBAUT, P.E.
SECRETARY

July 21, 2021

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: **9740000 SURFACE TREATMENTS.**

Dear Mr. Nguyen:

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

The changes are proposed by Karen Byram to include a new section in Division III for material requirements of surface treatments. Includes NTPEP testing for Detectable Warnings and performance lab testing to Patterned Pavement into the Standard Specifications.

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 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 TREATMENTS.**(REV 6-87-14-21)**

The following new Section is added after Section 973.

SECTION 974
SURFACE TREATMENTS

974-1 Description.

This section specifies the material requirements for detectable warnings and patterned pavement.

974-2 Detectable Warnings.

Provide detectable warnings in accordance with the Americans with Disabilities Act Standards for Transportation Facilities, Section 705. Provide detectable warnings consisting of materials intended for exterior use subject to routine pedestrian traffic and occasional vehicular traffic. Provide detectable warnings with size and pattern comprised of truncated domes aligned in parallel rows. Detectable warnings with a diagonal pattern are not permitted. Detectable warnings consisting of truncated domes fabricated in the field are not permitted.

974-2.1 Approved Product List Submittal 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 the Table 974-1. Documentation and reports must demonstrate that the product meets the requirements of this Section, Section 527, and the Standard Plans, Index 522-002.

<u>Table 974-1</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 recommended installation materials and equipment as applicable.</u>
<u>Product Label</u>	<u>For each component of the product system.</u>
<u>Safety Data Sheet (SDS)</u>	<u>SDS meeting OSHA requirements for product and manufacturer recommended installation materials as applicable.</u>
<u>National Testing Product Evaluation Program (NTPEP) Test Report</u>	<u>Testing must be conducted using the project Work Plan for NTPEP Laboratory Testing of Detectable Warning Systems, using the cold exposure category.</u>
<u>Independent Laboratory Test Report</u>	<u>Color/Contrast testing as identified in Table 974-2.</u>
<u>Installation Instructions</u>	<u>Surface preparation and installation procedures for different substrates. The minimum curing time prior to installing the product for surface-applied materials.</u>
<u>Product Sample</u>	<u>Submit upon request from the Department. If the product is a system, a sample of each component must be submitted.</u>

974-2.2 Performance Requirements: Provide detectable warnings that meet the performance requirements of Table 974-2.

<u>Table 974-2</u>			
<u>Property</u>	<u>Documentation</u>	<u>Test Value</u>	
<u>Visual and Microscopic Evaluation¹</u>	<u>Provide NTPEP Test Report</u>	<u>No lifting, debonding, cracking, flaking, and missing or partial domes.</u>	
<u>Domes and Spacing Dimensional Testing¹</u>	<u>Provide NTPEP Test Report</u>	<u>Meets the requirements with the Americans with Disabilities Act Standards for Transportation Facilities, Section 705.</u>	
<u>Slip Resistance¹</u>	<u>Provide NTPEP Test Report</u>	<u>Dry Coefficient of Friction – 0.8 min. Wet Coefficient of Friction – 0.65 min. (include recessed areas between truncated domes).</u>	
<u>Color Measurement¹</u>	<u>Provide NTPEP Test Report</u>	<u>Uniform color, for each color.</u>	
<u>Resistance to Impact from Falling Tup¹</u>	<u>Provide NTPEP Test Report</u>	<u>No cracking, flaking, missing or partial domes, 20 ft-lb energy.</u>	
<u>Adhesive, Coating, and Single Dome Bond Strength, uncured concrete panel³</u>	<u>Provide NTPEP Test Report</u>	<u>150 psi min. with an elapsed panel cure time of less than 72 hours.</u>	
<u>Color/Contrast</u>	<u>Independent Laboratory Test Report</u>	<u>Meets the requirements of this section</u>	
		<u>Color</u>	<u>CAP Y</u>
		<u>Safety Yellow</u>	<u>25 – 45</u>
		<u>Brick Red</u>	<u>5 – 15</u>
		<u>Black</u>	<u>0 – 5</u>

974-3 Patterned Pavement.

Provide patterned pavement products that produce an adherent, weather resistant, skid resistant, and wear resistant surface that meets the requirements of this Section, and Section 523.

Patterned pavement installations requiring removal of pavement are not permitted.

974-3.1 Approved Product List Submittal 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 974-43. Documentation and reports must demonstrate that the product meets the requirements of this Section and Section 523.

<u>Table 974-43</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 recommended installation materials and equipment as applicable.</u> <u>Include the following information as applicable:</u> <ol style="list-style-type: none"> <u>1. Use on concrete and/or asphalt surfaces.</u> <u>2. Use as “Vehicular” and/or “Non-vehicular.”</u> <u>3. Patterns, textures, and templates.</u> <u>4. Resin, sealers, coatings, coloring, and friction materials.</u> <u>5. Friction material source.</u>
<u>Product Label</u>	<u>For each component of the product system.</u>
<u>Safety Data Sheet (SDS)</u>	<u>SDS meeting OSHA requirements for each material used in the product system.</u>
<u>Independent Laboratory Test Report</u>	<u>Skid Test and Integral Color testing as identified in Table 974-45.</u>
<u>Installation Instructions</u>	<u>Surface preparation and installation procedures for different substrates.</u>
<u>Product Sample</u>	<u>Submit upon request from the Department. A sample of each component must be submitted.</u>

974-3.2 Performance Requirements: Provide patterned pavement products that meet the performance requirements of Table 974-4.

<u>Table 974-45</u>		
<u>Property</u>	<u>Documentation</u>	<u>Test Method and Value</u>
<u>Skid Test¹</u>	<u>Independent Laboratory Report</u>	<u>ASTM E303 using the British Pendulum Tester, British Pendulum Number (BPN) of at least 40.</u>
<u>Integral Color^{1,2}</u>	<u>Independent Laboratory Report</u>	<u>Visual inspection, Color is integral and uniform.</u>
<u>Non-Hazardous Classification^{1,2}</u>	<u>Material Safety Data Sheet (SDS)</u>	<u>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>Friction Resistance²</u>	<u>Product Sample Panel for FDOT Laboratory Test</u>	<u>FM 5-622 - Part A, Initial Dynamic Friction Test (DFT40) value of 40 or greater.</u>
¹ For Non-vehicular use.		
² For Vehicular use.		

974-3.3 Performance Requirements for Products in Vehicular Traffic Areas: Manufacturers shall install the product on a site provided by the Department and test the

installation using an independent testing facility in accordance with FM 5-592. Provide patterned pavement products that meet the performance requirements of Table 974-5.

<u>Table 974-5</u>		
<u>Property</u>	<u>Documentation</u>	<u>Test Method and Value</u>
<u>Wear</u>	<u>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>Friction</u>	<u>Independent Testing Facility</u>	<u>FM 5-592, Test using one of the following:</u> <u>a. Locked Wheel Friction Tester - minimum FN40R value of 35 or greater at all testing intervals for 3 years, or</u> <u>b. Dynamic Friction Tester - minimum DFT40 value of 40 or greater at all testing intervals for 3 years.</u>

SURFACE TREATMENTS.**(REV 7-14-21)**

The following new Section is added after Section 973.

**SECTION 974
SURFACE TREATMENTS**

974-1 Description.

This section specifies the material requirements for detectable warnings and patterned pavement.

974-2 Detectable Warnings.

Provide detectable warnings in accordance with the Americans with Disabilities Act Standards for Transportation Facilities, Section 705. Provide detectable warnings consisting of materials intended for exterior use subject to routine pedestrian traffic and occasional vehicular traffic. Provide detectable warnings with size and pattern comprised of truncated domes aligned in parallel rows. Detectable warnings with a diagonal pattern are not permitted. Detectable warnings consisting of truncated domes fabricated in the field are not permitted.

974-2.1 Approved Product List Submittal 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 the Table 974-1. Documentation and reports must demonstrate that the product meets the requirements of this Section, Section 527, and the Standard Plans, Index 522-002.

Table 974-1	
Documentation	Requirements
Product Photo	Displays the significant features of the product.
Technical Data Sheet	Uniquely identifies the product and includes product specifications, storage instructions, and recommended installation materials and equipment as applicable.
Product Label	For each component of the product system.
Safety Data Sheet (SDS)	SDS meeting OSHA requirements for product and manufacturer recommended installation materials as applicable.
National Testing Product Evaluation Program (NTPEP) Test Report	Testing must be conducted using the project Work Plan for NTPEP Laboratory Testing of Detectable Warning Systems, using the cold exposure category.
Independent Laboratory Test Report	Color/Contrast testing as identified in Table 974-2.
Installation Instructions	Surface preparation and installation procedures for different substrates. The minimum curing time prior to installing the product for surface-applied materials.
Product Sample	Submit upon request from the Department. If the product is a system, a sample of each component must be submitted.

974-2.2 Performance Requirements: Provide detectable warnings that meet the performance requirements of Table 974-2.

Table 974-2			
Property	Documentation	Test Value	
Visual and Microscopic Evaluation ¹	Provide NTPEP Test Report	No lifting, debonding, cracking, flaking, and missing or partial domes.	
Domes and Spacing Dimensional Testing ¹	Provide NTPEP Test Report	Meets the requirements with the Americans with Disabilities Act Standards for Transportation Facilities, Section 705.	
Slip Resistance ¹	Provide NTPEP Test Report	Dry Coefficient of Friction – 0.8 min. Wet Coefficient of Friction – 0.65 min. (include recessed areas between truncated domes).	
Color Measurement ¹	Provide NTPEP Test Report	Uniform color, for each color.	
Resistance to Impact from Falling Tup ¹	Provide NTPEP Test Report	No cracking, flaking, missing or partial domes, 20 ft-lb energy.	
Adhesive, Coating, and Single Dome Bond Strength, uncured concrete panel ³	Provide NTPEP Test Report	150 psi min. with an elapsed panel cure time of less than 72 hours.	
Color/Contrast	Independent Laboratory Test Report	Meets the requirements of this section	
		Color	CAP Y
		Safety Yellow	25 – 45
		Brick Red	5 – 15
		Black	0 – 5

974-3 Patterned Pavement.

Provide patterned pavement products that produce an adherent, weather resistant, skid resistant, and wear resistant surface that meets the requirements of this Section, and Section 523.

Patterned pavement installations requiring removal of pavement are not permitted.

974-3.1 Approved Product List Submittal 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 974-3. Documentation and reports must demonstrate that the product meets the requirements of this Section and Section 523.

Table 974-3	
Documentation	Requirements
Product Photo	Displays the significant features of the product.
Technical Data Sheet	Uniquely identifies the product and includes product specifications, storage instructions, and recommended installation materials and equipment as applicable. Include the following information as applicable: <ol style="list-style-type: none"> 1. Use on concrete and/or asphalt surfaces. 2. Use as “Vehicular” and/or ‘Non-vehicular.’ 3. Patterns, textures, and templates. 4. Resin, sealers, coatings, coloring, and friction materials. 5. Friction material source.
Product Label	For each component of the product system.
Safety Data Sheet (SDS)	SDS meeting OSHA requirements for each material used in the product system.
Independent Laboratory Test Report	Skid Test and Integral Color testing as identified in Table 974-4.
Installation Instructions	Surface preparation and installation procedures for different substrates.
Product Sample	Submit upon request from the Department. A sample of each component must be submitted.

974-3.2 Performance Requirements: Provide patterned pavement products that meet the performance requirements of Table 974-4.

Table 974-4		
Property	Documentation	Test Method and Value
Skid Test ¹	Independent Laboratory Report	ASTM E303 using the British Pendulum Tester, British Pendulum Number (BPN) of at least 40.
Integral Color ^{1,2}	Independent Laboratory Report	Visual inspection, Color is integral and uniform.
Non-Hazardous Classification ^{1,2}	Material Safety Data Sheet (SDS)	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.
Friction Resistance ²	Product Sample Panel for FDOT Laboratory Test	FM 5-622 - Part A, Initial Dynamic Friction Test (DFT40) value of 40 or greater.
¹ For Non-vehicular use. ² For Vehicular use.		

974-3.3 Performance Requirements for Products in Vehicular Traffic Areas: Manufacturers shall install the product on a site provided by the Department and test the

installation using an independent testing facility in accordance with FM 5-592. Provide patterned pavement products that meet the performance requirements of Table 974-5.

Table 974-5		
Property	Documentation	Test Method and Value
Wear	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.
Friction	Independent Testing Facility	FM 5-592, Test using one of the following: a. Locked Wheel Friction Tester - minimum FN40R value of 35 or greater at all testing intervals for 3 years, or b. Dynamic Friction Tester - minimum DFT40 value of 40 or greater at all testing intervals for 3 years.