

Patterned Pavement

S523

Review and Lessons Learned

Presenters:



Paul Gentry – Product Evaluation

Karen Byram – State Product
Evaluation Administrator

Objectives

- S523 Review
- Current QPL Products
- Skid Testing Overview
- The Products in Use
 - Wear and Tear
 - Failures
- MMOA Details

SECTION 523 PATTERNED PAVEMENT.

523-1 Description.

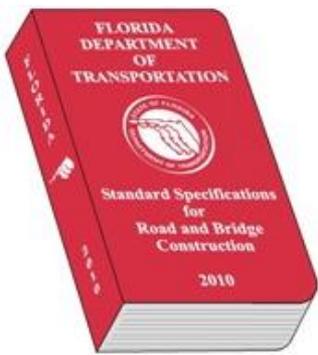
Construct patterned pavement on asphalt or concrete pavement areas at locations and with the color specified in the Standard Specifications for Road and Bridge Construction List (QPL), and the color of the pavement shall be as specified in the QPL, respectively, and the color of the pavement shall be as recommended in the QPL, respectively.

Two Categories of Use:

- Vehicular and

Non-Vehicular includes only those areas not subject to traffic:

- Median islands,
- curb extensions,
- sidewalks,
- plazas
- i.e. FOOT traffic only



523-2 Materials.

523-2.1 General: Use only patterned pavement products approved for use in vehicular and non-vehicular areas, as appropriate, and listed on the QPL. Meet manufacturer's specifications for all patterns, textures, templates, sealers, coatings and coloring materials.

Material coatings used to achieve the pattern and color shall produce an adherent, weather resistant, skid resistant, wear resistant surface under service conditions. Color shall be integral and consistent throughout the installation. The composition of materials is intended to be left to the discretion of the manufacturer.

Materials shall be characterized as non-hazardous as defined by Resource Conservation and Recovery Act (RCRA), Subpart C, Table 1 of 40 CFR 261.24 "Toxicity Characteristic". Materials shall not exude fumes which are hazardous, toxic or detrimental to persons or property.



523-2.2 Qualified Products List (QPL): Manufacturers seeking evaluation of their product shall submit an application in accordance with Section 6 along with the following documentation:

1. Manufacturer's recommendations for applicability of use on concrete or asphalt surfaces.

2. Manufacturer's recommendation for applicability of use in vehicular or non-vehicular travel areas.

3. Manufacturer's specifications and procedures for materials and installation for each use above.

4. For products proposed for use in vehicular traffic areas, test data verifying the material meets the requirements of this Section including verification that the product, installed in accordance with the manufacturer's specifications and procedures, has been tested in accordance with either:

a. ASTM E-274, Skid Resistance of Paved Surfaces using a standard ribbed full scale tire at a speed of 40 mph (FN40R), and has a minimum FN40R value of 35, or

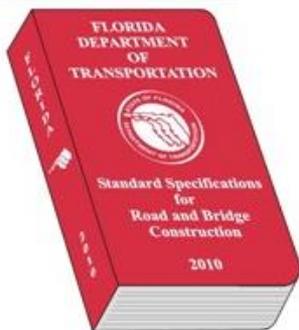
b. ASTM E-1911, Measuring Paved Surface Frictional Properties Using the Dynamic Friction Tester (DFT), at a speed of 40 mph (DFT40), and has a minimum DFT40 value of 40.

5. For products proposed for use in non-vehicular traffic areas, test data verifying the material meets the requirements of this Section including verification that the product, installed in accordance with the manufacturer's specifications and procedures, has been tested in accordance with ASTM E-303 using the British Pendulum Tester and has a British Pendulum Number (BPN) of at least 40.

523-2.3 Performance Requirements for Products in Vehicular Travel Areas: In addition to the submittal requirements of 523-2.2, QPL approval will be contingent on a field service test demonstrating that the patterned pavement product meets the following performance measures at the end of three years from opening to traffic:

1. The average thickness shall be a minimum of 50% of the original thickness.
2. Wearing of the material coating shall not expose more than 15% of the underlying surface area as measured within the Traveled Way.
3. Friction performance of patterned/textured pavement materials shall meet or exceed one of the following test method values:
 - (a) FN40R value of 35 in accordance with ASTM E-274; or,
 - (b) DFT40 value of 40 in accordance with ASTM E-1911

Manufacturers shall provide a field service test installation of each product within a marked crosswalk on a roadway with an ADT of 6,000 to 12,000 vehicles per day per lane, on a site approved by the Department. The test installation shall be a minimum six feet wide and extend from pavement edge to pavement edge across all traffic lanes and shoulder pavement at the crosswalk location. The test installation shall be tested by the manufacturer in accordance with FM 5-592.



523-3 Construction.

523-3.1 Product Submittals: Prior to installation, submit pattern and color samples to the Engineer for confirmation that the product meets the pattern and color specified in the Plans. Do not begin installation until acceptance by the Engineer.

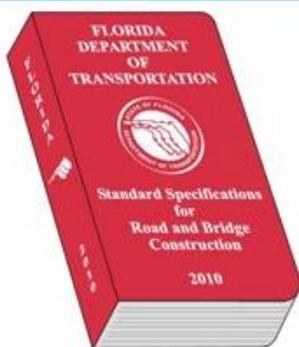
523-3.2 Pavement Cuts: Complete all utility, traffic loop detector, and other items requiring a cut and installation under the finished surface, prior to product installation.

523-3.2 Surface Protection: Protect treated surfaces from traffic and environmental effects until the product is completely installed, including drying and curing according to the manufacturer's instructions.

523-3.3 Installation Acceptance: For installation on new asphalt roadways, apply patterned pavement a minimum of 14 days after placement of the adjacent pavement.

Upon completion of the installation, the Engineer will check the area at random locations for geometric accuracy. If any of the chosen areas are found to be deficient, correct the entire patterned area at no additional cost to the Department.

Provide certification that the patterned pavement was installed in accordance with the manufacturer's requirements.



523-4 Method of Measurement.

The quantity to be paid will be the plan quantity in square yards of patterned pavement, completed and accepted. No deduction will be made for areas occupied by landscaping, manholes, inlets, drainage structures, or by any public utility appurtenances within the area.

523-5 Basis of Payment.

Price and payment will be full compensation for all work specified in this Section.

Payment will be made under:

- Item No. 523- 1- Patterned Pavement (Vehicular Areas) - per square yard.
- Item No. 523- 2- Patterned Pavement (Non-Vehicular Areas) - per square yard.





How to Contact Specifications and Estimates

[Have a Question?](#)

[Frequently Asked Questions](#)

[Staff Listing](#)

Examples of Products

Qualified Products List (QPL)

To report problems with a product listed on the QPL, please complete a [Notification of Alleged Deficiency](#).

Specification 523 Patterned Pavement

[523 Patterned Pavement](#)

Currently on the QPL

QPL Number	Other References	Product ID	Manufacturer	Approval Date
S523-0003	S523	Paveway STS	Paveway Systems Inc 2330 Success Drive Oceasa FL 33556 (727) 372-5800	1/18/2007 Last Recert 4/8/2011
Comments and Limitations	Approved for Vehicular and Non-Vehicular applications			
S523-0005	S523	FrictionPave Decorative Surfacing	Pattern Paving Products 1750 Hwy 160 West, Suite 101-222 Fort Mill SC 29708 (704) 996-7248	4/5/2007 Last Recert 3/11/2011
Comments and Limitations	Approved for Vehicular and Non-Vehicular applications			
S523-0007	S523	Duratherm	Flint Trading Inc P.O. Box 160 Thomasville NC 27361 (850) 223-2155	3/12/2008 Last Recert 10/16/2009
Comments and Limitations	Approved for Vehicular and Non-Vehicular applications			
S523-0009	S523	TrafficPatterns	Flint Trading Inc P.O. Box 160 Thomasville NC 27361 (850) 223-2155	6/1/2009 Last Recert 11/3/2010
Comments and Limitations	Approved for Vehicular and Non-Vehicular applications. Conditional approval, requires sealer			
S523-0010	S523	OmniGrip CST	Atlantic Paving Co., Inc. 6309 N.W. 70 Street Miami FL 33166 (305) 513-8632	6/15/2009 Last Recert 2/7/2011
Comments and Limitations	Approved for Vehicular and Non-Vehicular applications. Conditional approval			
S523-0012	S523	TrafficPrint F	Traffic Calming USA 110 Thompson Road, Suite 102A Hiram GA 30141 (770) 505-4044	8/2/2010 Last Recert
Comments and Limitations	Conditional approval. Non-Vehicular applications only on jobs let after January 1, 2012 Approved for applications on or before December 31, 2011			

Paveway STS



Figure 1. Paveway STS field friction test section.



FrictionPave



Figure 1. FrictionPave field friction test section.



Duratherm



Figure 1. Duratherm's photographs for SR 222 located near 39th Ave and NW 51st Street.



Traffic Patterns

Q.P.L.# S523-0009



Preformed thermoplastic product with antiskid materials imbedded into the material heated onto the roadway surface





Flint Trading Traffic Patterns
Installation



TrafficPrint EX



Cold applied epoxy based decorative surfacing system that incorporates Hard wearing granite aggregate for long term durability

Liquid Brick eco



Colored surface treatment for highways consists of a epoxy applied to a sound substrate and covered with natural colored aggregate

CityBrick *** non-vehicular applications only!



“Epoxy modified Traffic Coating” is a high quality water-borne acrylic finish incorporating an epoxy additive to increase the abrasion resistance of the film.



Traffic Calming TrafficPrint F Installation

*** product no longer on the QPL

****Note: "Mill and Fill" no longer
allowed as of 1/12 workbook





Thermal Heater used to melt Preformed Thermoplastic

Skid Resistance

- Testing Methods
 - Full-scale Tire (Truck and Trailer)
 - Dynamic Friction Tester (DFT)

ASTM E 274

- ◆ Standard test method for skid resistance of paved surfaces using a full-scale tire (ASTM)
- ◆ Represents friction force on a locked test wheel as it is dragged over a wetted pavement surface under constant load and speed



Friction Number

- ◆ $FN = (F/W) \times 100$
- ◆ F = HORIZONTAL FORCE
- ◆ W = DYNAMIC VERTICAL LOAD
- ◆ Ex. $[(500\text{lb}/1085\text{lb}) \times 100] = [46 \text{ FN}]$



TEST TRAILER OPERATION

The test trailer operations:

- ◆ 40 mph
- ◆ Wet Test
- ◆ Test designated lane
- ◆ 3 second lockup/ 180 ft

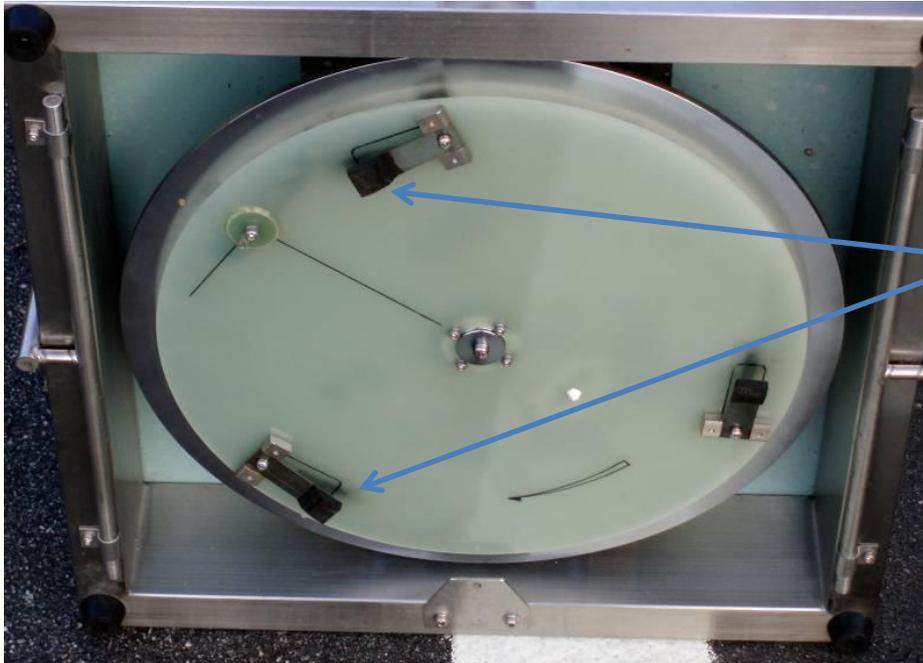


Lock Wheel Tester, in accordance with ASTM E 274, is a "Standard Test Method for Skid Resistance of Paved Surfaces Using a Full-Scale Tire (FN40R)"



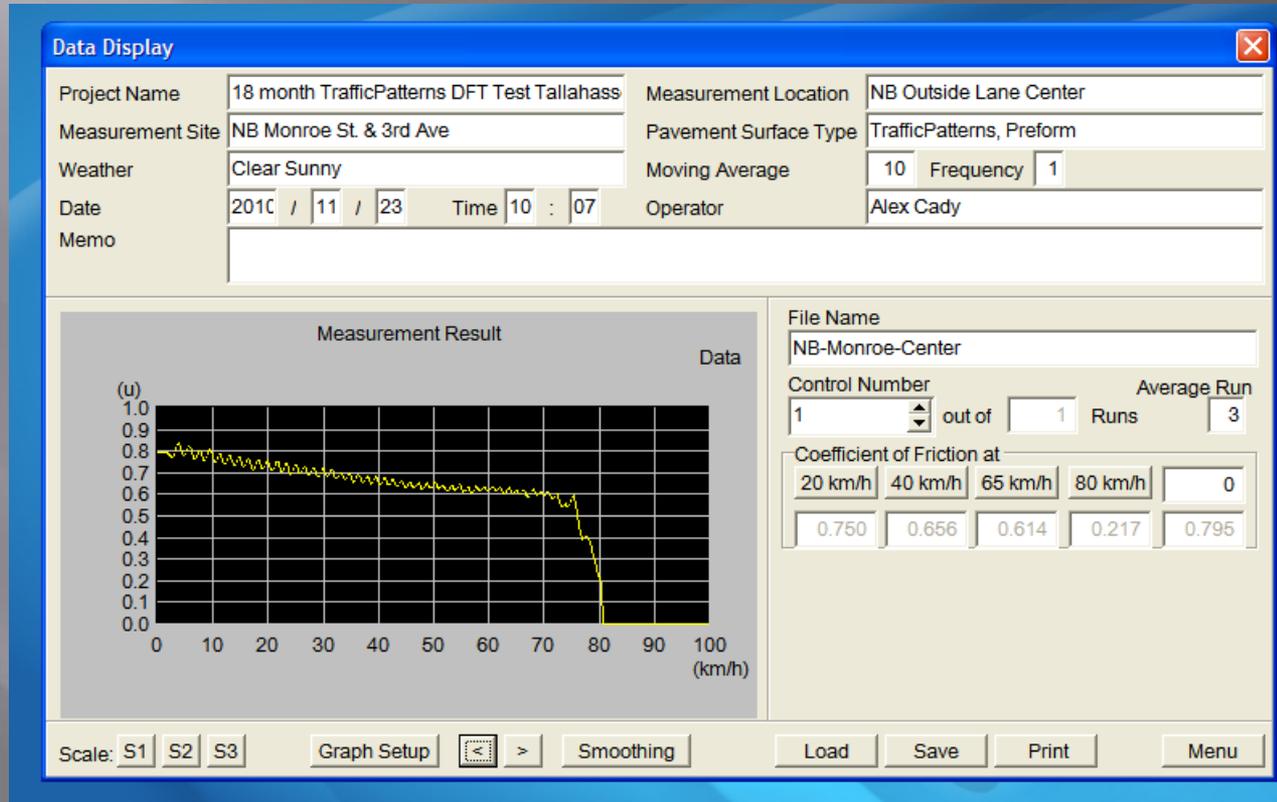
Dynamic Friction Tester (DFT)

- Portable device for obtaining friction measurements of flat surfaces as standardized
- ASTM E 1911, Standard Test Method for Measuring Paved Surface Frictional Properties using the Dynamic Friction Tester



Rubber sliders under the
Dynamic Friction Tester (DFT)

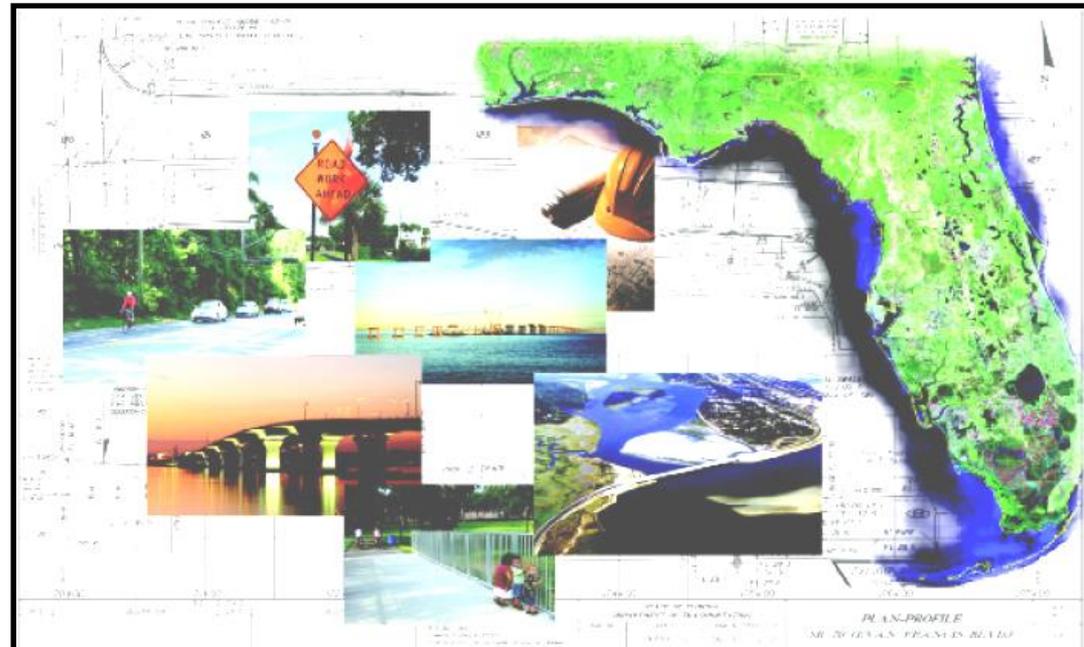
DFT (Dynamic Friction Tester) Data Display chart



Plans Preparation Manual

Provides Guidance and Requirements

- Where and when to allow
- MMOA (Maintenance Memorandum of Agreement)





Roadway Design

Roadway Design / Criteria and Standards / Plans Preparation Manual / 2013

2013



For details on file descriptions, please call (850) 414-4318 or e-mail [Benjamin Gerrell](#). These .PDF files are formatted for two-sided printing (front/back) pre-punched three-hole paper is available through office supply store. These documents can only be viewed with [Adobe Acrobat Reader](#). All files are less than 1mb in size unless noted otherwise.

Volume 1

Complete PDF Files	Title
Volume 1 Complete	Complete Volume 1 - (8mb file size)
Volume 1 Cover	Color Binder Cover and Color Spine
Cover Sheet	Inside Cover
Registration Form	Registration Form
Suggestions	Suggestions
Table of Contents	Volume 1 Table of Contents
Introduction	Introduction
Chapter 1	Design Controls
Chapter 2	Design Geometrics and Criteria - (2.2Mb file size)
Chapter 3	Earthwork
Chapter 4	Roadside Safety
Chapter 5	Utilities
Chapter 6	Railroad Crossing
Chapter 7	Traffic and ITS Design
Chapter 8	Pedestrian, Bicycle and Public Transit Facilities
Chapter 9	Landscape and Community Features

Chapter 2

Design Geometrics and Criteria

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2.1.6.1 Alternative Roadway Paving Treatments

Alternative paving treatments, such as patterned pavement and architectural pavers meeting EDOT Specifications, may be used for enhancing aesthetics and appearance

Note: These alternative pavement treatments are purely aesthetic treatments and are not considered to be traffic control devices.

impacts to the traveling public as well as potential long term maintenance problems. Architectural pavers have been found to create significant ride-ability problems even on low speed roadways. Therefore, architectural pavers are prohibited within the traveled way on the State Highway System. Properly installed patterned pavement treatments do not significantly affect ride-ability; however, their use is also restricted since they are not likely to sustain their friction and wear characteristics for the full life of typical roadway pavement.

These paving treatments involve additional construction and maintenance costs not associated with typical roadway pavement. Therefore, appropriate agreements with the local maintaining agency shall be obtained. The local maintaining agency shall provide the additional funding for construction and assume responsibility for regular inspection and maintenance of the pavement treatment. Maintenance agreements for installations within the traveled way on the State Highway System shall include the provisions outlined in *Section 2.1.6.2* for the duration of the installation.

PPM Sec
2.1.6



Patterned Pavement:

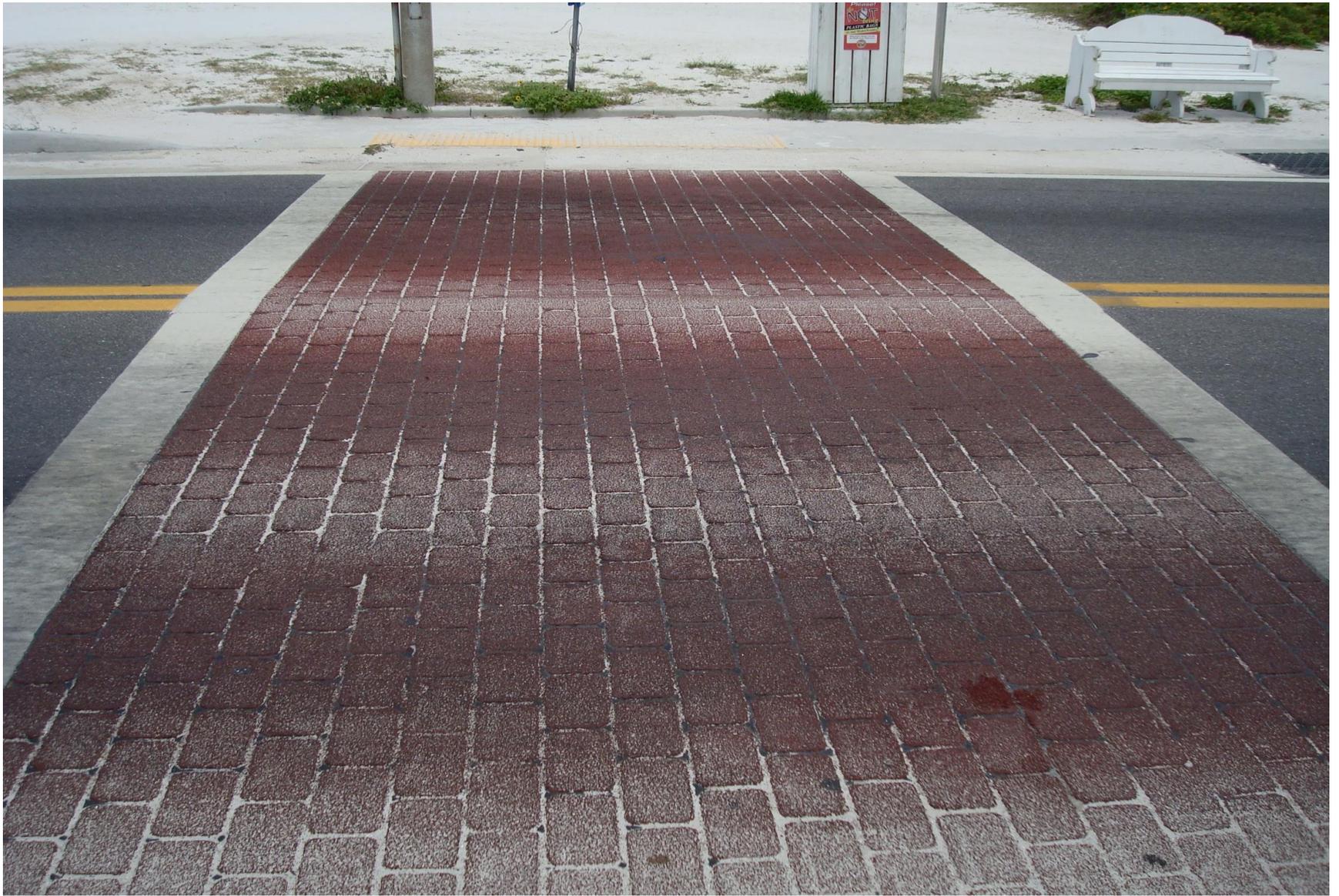
1. Use on the traveled way of the State Highway System is restricted to areas within marked pedestrian crosswalks where the design speed is 45 mph or less; however, patterned pavement may be used on crosswalks across limited access roads with heavy truck traffic turning movements.
2. The pavement treatment shall be the same pavement type as, and conform to, the pavement type. For example, replacing flexible pavement with rigid pavement at the joints of a crosswalk where the abutting pavement is rigid will likely result in pavement joint problems and adverse impacts to rideability. This type treatment is therefore not permitted. Replacing flexible pavement with rigid pavement for an entire intersection including crosswalks may be permitted with a Technical Special Provision submitted to the State Roadway Design Engineer for approval.
3. The initial treatment cannot be applied to any State Highway whose asphalt pavement surface is older than 5 years.
4. May be used in areas not subject to vehicle traffic such as median islands, curb extensions, sidewalks, and landscaping borders.
5. ADA requirements shall be met in areas subject to pedestrian traffic. See *PROWAG R301.5 and R301.7* and *ADAAG 302 and 303* for surface requirements.

Restrictions for Use

Examples of Normal Wear and Tear

(How these products will look over time with use)





Wear from traffic and sand from beach



Wear from traffic



Wear from traffic and dirt and other material deposition

“Mill and Fill: failure



“Mill and Fill” failure





Wear from traffic



Wear from traffic



FrictionPave (after repair modifications were made)



FrictionPave (after repair modifications were made)



Examples of Product Failures Due to Improper Use

Or: Location, Location, Location



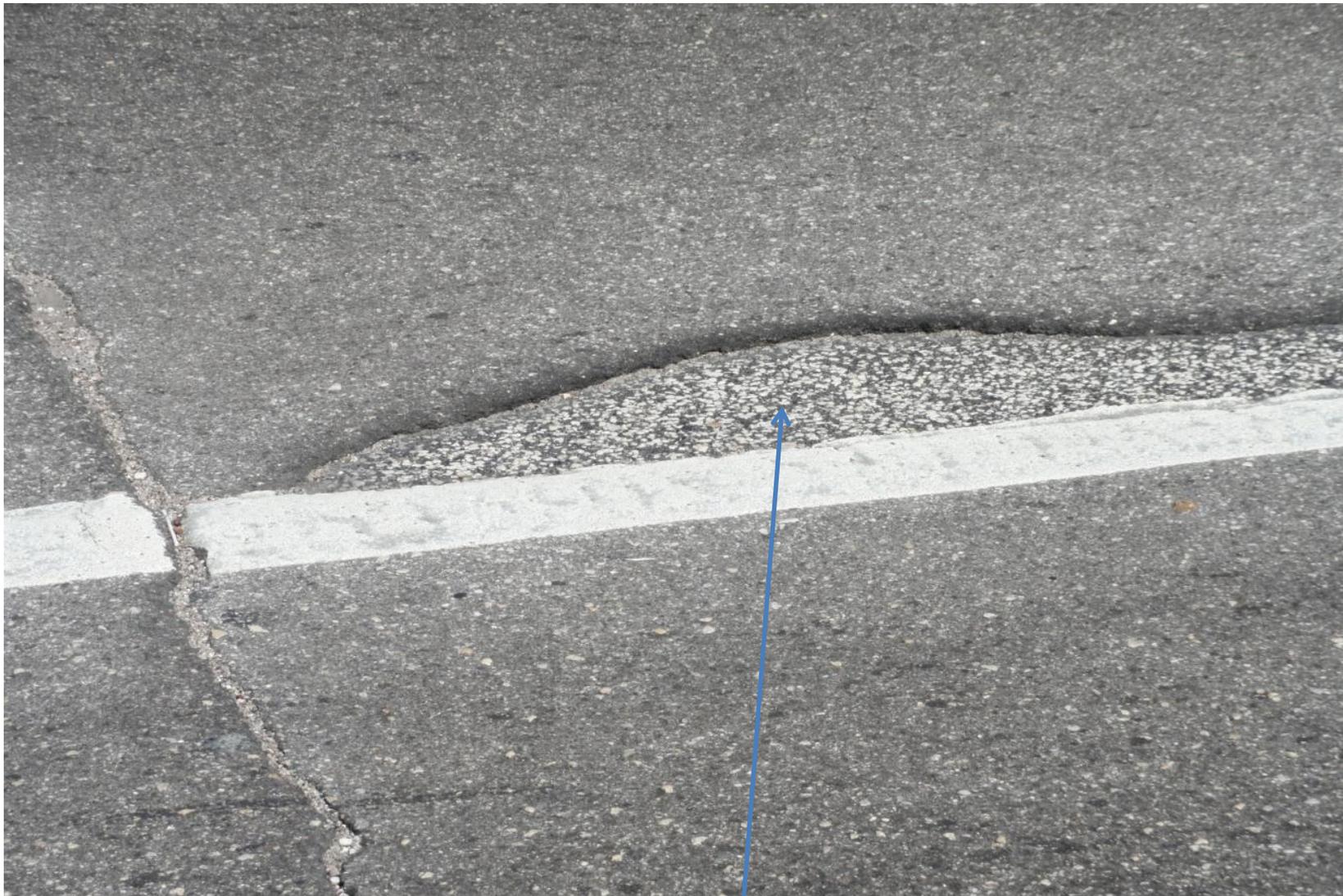
Heavy Truck Traffic Damage



Delamination of asphalt leading up to the crosswalk bar.



Damage due to poor asphalt condition



Friction surface delamination



Note the difference in depth between curb and gutter and road surface

When patterned pavement treatments are used, the plans shall identify the location, patterned type (brick, stone, etc.), and surface color. Because local agencies must fund

Because Local Agencies MUST FUND
and MAINTAIN these treatments,

product brands, colors, and patterns

Note: If a specific product is identified on the plans when Federal Funding is being used – the Proprietary Products process must be followed.

P.P.M. Section 2.1.6.1 also states:

Local Agency MUST

- Provide Funding and**
- Sign a Maintenance Agreement**

within the traveled way on the State Highway System shall include the provisions outlined in *Section 2.1.6.2* for the duration of the installation.

maintenance costs not
agreements with the
agency shall provide
regular inspection
costs for installations

FDOT Roadway Design Plans Preparation Manual (1-13)

Section 2.1.6.1 states:

2.1.6.2 Maintenance Memorandum Of Agreement Requirements For Patterned Pavement

Prior to the installation of patterned pavement crosswalks in intersections on the State Highway System, a Maintenance Memorandum of Agreement shall be entered into with the local government agency requesting this aesthetic enhancement to the project. This agreement shall be filed with the District Maintenance Office. This Agreement shall require the local government agency to acknowledge that the installation and maintenance of patterned pavement is the total responsibility of the local agency, including contracting for friction testing with a qualified firm.

“Maintenance” of all patterned pavement crosswalks in these Agreements shall be defined, as a minimum, to include its frictional characteristics and integrity as follows:

1. Within 60 days of project acceptance by the Department, all lanes of each patterned crosswalk shall be evaluated for surface friction. The friction test shall be conducted using either a locked wheel tester in accordance with *FM 5-592 (Florida Test Method for Friction Measuring Protocol for Patterned Pavements)* or a Dynamic Friction Tester in accordance with *ASTM E1911*. *FM 5-592* can be accessed at the following link:

<http://materials.dot.state.fl.us/smo/administration/resources/library/publications/fs/tm/Methods/fm5-592.pdf>

The initial friction resistance shall be at least 35 obtained at 40 mph with a ribbed tire test (FN40R) or equivalent. Failure to achieve this minimum resistance shall require all deficient crosswalk areas to be removed to their full extent (lane-by-lane) and replaced with the same product installed initially. If the Department determines that more than 50% of the lanes in the intersection require replacement, the entire intersection installation may be reconstructed with a different product on the Qualified Products List (QPL) or replaced with conventional pavement.

FM 5-592 Florida Test Method for Friction Measuring Protocol for Patterned Pavements

Note: can be found on State Materials Office website under “Documents and Publications”

March 1, 2011

Revised: December 6, 2011

Florida Test Method for Friction Measuring Protocol for Patterned Pavements

Designation: FM 5-592

1. SCOPE

This method covers the testing procedures for evaluating the friction resistance of Patterned surfaces used in crosswalks over asphalt and concrete surfaces

Note: This test method contains two parts:

Part A- Friction testing performed with the Locked Wheel Friction Tester

Part B- Friction testing performed with the Dynamic Friction Tester (DFT)

2. APPARATUS

2.1 Locked Wheel Friction Tester- This apparatus shall be standardized in

Frequency of Friction Testing for Patterned Pavement

MMOA (Maintenance Memorandum of Agreement:

- **Local Agency is responsible for the skid testing and the cost:**
 - **Within 60 days of project acceptance by the department,**
 - **Approx. 1 year after project acceptance, and**
 - **Every 2 years thereafter and for the life of the adjacent pavement.**
- **Reports are sent to the District Warranty Coordinator.**

2. Approximately one year after project acceptance and every two years thereafter and for the life of the adjacent pavement, only the outside traffic lane areas of each patterned crosswalk shall be tested for friction resistance in accordance with *ASTM E274* or *ASTM E1911*. Friction resistance shall, at a minimum, have a FN40R value of 35 (or equivalent).

3. District Warranty Coordinator is responsible for monitoring the friction testing

4. Failure to achieve the minimum resistance shall require all lanes of the crosswalk to be friction tested to determine the extent of the deficiency. All deficient areas shall be removed to their full extent (lane-by-lane) and replaced with the same product installed initially. If the Department determines that more than 50% of the lanes in the intersection require replacement, the entire intersection installation may be reconstructed with a different product on the QPL or replaced with conventional pavement.

5. The Local Agency has 90 days to repair deficiencies. Local Agency is responsible for expenses.

6. construction activities in the vicinity of the treatment.

7. Should the local agency fail to satisfactorily perform any required remedial work

7. The Department can remove all patterned pavement if the Local Agency does not maintain it per this agreement.



Florida Department of Transportation

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GOVERNOR

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Tallahassee, FL 32399-0450

ANANTH PRASAD, P.E.
SECRETARY

PROJECT MANAGEMENT MEMORANDUM 13-01

DATE: May 22, 2013

TO: District Directors of Transportation Development, District Directors of Transportation Operations, District Design Engineers, District Traffic Operations Engineers, and District Consultant Project Management Engineers

FROM: Robert W. Crim, II, P. E. *R. Crim*
Manager, Production Support Office

COPIES: Tom Byron, Duane Brautigam, Michael Shepard, Mark Wilson

SUBJECT: Pedestrian Crosswalks and Requirements when Using Patterned Pavement

This memorandum serves to advise District Production Staff and Consultant Project Managers of recent project reviews which revealed new maintenance agreements were still using outdated requirements for patterned pavements. This memorandum also serves to clarify the existing requirements for marking pedestrian crosswalks.

BACKGROUND

The use of patterned pavements and the associated requirements is covered in the *Plans Preparation Manual, Vol. 1, Chapter 2.1.6.1*. These paving treatments involve additional construction and maintenance costs not associated with typical roadway pavement. Therefore, appropriate agreements with the local maintaining agency shall be obtained.

Maintenance agreements for patterned pavement within the traveled way on the State Highway System shall include the provisions outlined in *PPM Section 2.1.6.2* for the duration of the installation. Previous maintenance agreement language outlining outdated friction resistance requirements and testing frequency shall not be used. The initial friction resistance requirements, the allowable testing methods and the testing frequency described in the *PPM* must be included in a maintenance agreement with any local agency requesting patterned pavements.

Furthermore, these alternative pavement treatments are considered as purely aesthetic treatments and not as traffic control devices. This is covered in Chapter 3G of the *2009 Manual on*

www.dot.state.fl.us

PROJECT MANAGEMENT MEMORANDUM 13-01

May 22, 2013

Uniform Traffic Control Devices. Patterned pavements within crosswalks are not considered to be a mitigation strategy to address pedestrian safety issues. Patterned pavements within crosswalks are not a substitute for special emphasis crosswalk markings.

The guidance for the location and installation, signing, and marking of midblock and heavy pedestrian concentration area crosswalks are provided in the *FDOT Traffic Engineering Manual*. For all midblock crosswalks, special emphasis crosswalk markings shall be used, as shown in the *Department's Design Standards, Index No. 17346*. Special emphasis crosswalk markings may also be used for added visibility at signalized intersection approaches where there is a documented need for this treatment. Special emphasis crosswalk markings should not be applied indiscriminately at intersection approaches without a documented need.

IMPLEMENTATION

There are no changes to the current guidance provided in the *Plans Preparation Manual*, the *Design Standards* or the *FDOT Traffic Engineering Manual*. The Districts are expected to insure the current requirements are being addressed through existing or updated Quality Assurance processes. A training webinar on pedestrian crosswalks, markings, and the use of patterned pavements will be developed and presented through the Engineering Academy, a weekly webinar hosted by the Office of Design.

Office of Design staff is available to answer questions or provide any direction on the use of patterned pavements, and clarify any requirements to be included in a maintenance agreement with the responsible local agency.

CONTACTS

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Pedestrian Crosswalks and Requirements when Using Patterned Pavement Project Management Memorandum 13-01 dated 5-22-2013

Summary

- Two Categories:
 - Vehicular and Non-vehicular
- Restrictions for Use:
 - Design speed 45 MPH or less, and
 - Pavement must be in good condition and 5 years old or less
- Specific product named in the plans is allowed when the Local Agency is paying,
 - Otherwise, Federal Funding requires compliance with the Proprietary Products process.

Summary cont.

- MMOA is Mandatory
 - Pavement Must be Skid tested regularly,
 - Local Agency responsible for all testing and all costs,
 - District Warranty Coordinator responsible for reviewing test data performance and enforcement,
 - Local Agency responsible for all maintenance and costs,
 - District may remove any and all product if Local Agency does not maintain passing skid values.





300 x 200 - ladowntownnews.com

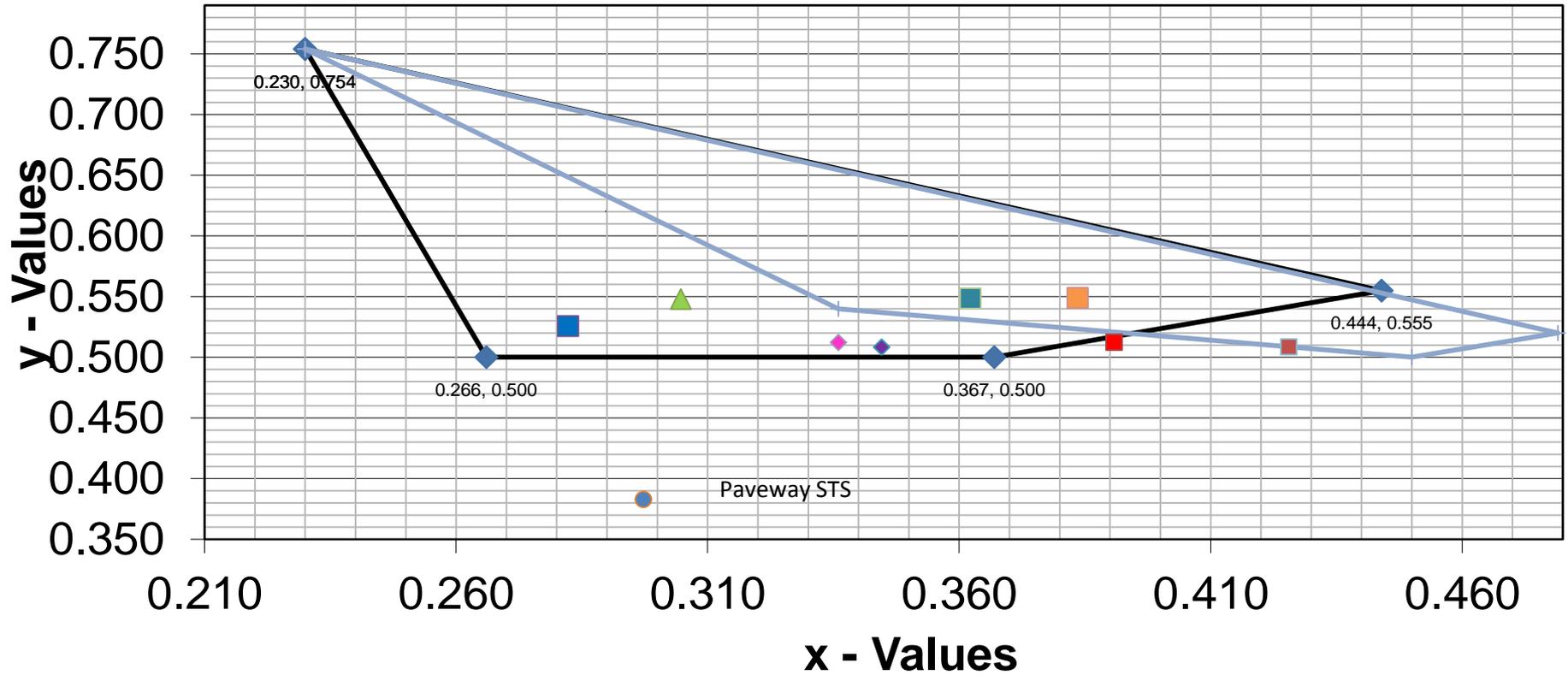
Specification 523-2.2 (7-14) , Section 6 states:

6. For products proposed for use as a bike lane application, independent testing verifying that the material can meet the color as identified in the April 15, 2011, Interim Approval for Optional use of Green Colored Pavement for Bike Lanes, Interim Approval (IA-14) Memorandum Valid Under the 2009 MUTCD

http://mutcd.fhwa.dot.gov/resources/interim_approval/ia15/ia15_m1_9.pdf

http://mutcd.fhwa.dot.gov/resources/interim_approval/ia14/ia14grnpmbiketlanes.pdf).

MUTCD Bike Lane Green Color Box Daytime Color Box



2014 Plans Preparation Manual Volume 2

Section 8.4.2.2

8.4.2.2 Green Color Bicycle Lanes

The Federal Highway Administration (FHWA) has issued an Interim Approval for the use of green colored pavement in marked bicycle lanes and in extensions of bicycle lanes through intersections and other traffic conflict areas. In accordance with the conditions of the interim approval, FDOT has requested and received permission from FHWA for locations on the State Highway System. The Interim Approval may be found at the following website:

http://mutcd.fhwa.dot.gov/res-interim_approvals.htm

The effectiveness of green colored pavement may be maximized if the treatment is used only where the path of bicyclists crosses the path of other road users and where road users should yield to bicyclists. Because colored pavements are addressed in the [2009 MUTCD](#), they are by definition a traffic control device whose need must be demonstrated before they are used. The following requirements apply to projects on the State Highway System.

Colored pavements shall not replace or be used in lieu of required markings for bike lanes as defined in this **Chapter** and the **MUTCD**, but shall only supplement such markings. When used in conjunction with white skip lines, such as when extending a bike lane across a right turn lane or access to a bus bay, the transverse colored marking shall match the 2'-4' white skip line pattern of the bike lane extension. The green colored pavement shall begin as a solid pattern 50 feet in advance of the skip striping, match the 2' 4' skip through the conflict area, and then resume the solid color for 50' after the conflict area, unless such an extent is interrupted by a stop bar, an intersection curb radius or bike lane marking. Details of each installation and associated pavement markings shall be shown in the plans. **Figures 8.4.1 – 8.4.5** illustrate how the green portion of the bike lane may be marked. See **FDOT's Design Standards, Indexes 17346** and **17347** for details on pavement markings.

Materials permitted to color the bike lane green shall be non-reflective, meet [FDOT Specification 523, Patterned Pavement](#), and fall within the color parameters defined by FHWA in their interim approval. During the first three years of the installation, the District shall review annually the crash reports in the conflict area to assess if the colored pavement is improving the safety of the bike lane. These assessments shall be reported to the State Roadway Design Engineer.

Approval for site specific installations of green colored bicycle lanes must be signed by the District Design Engineer, and a copy provided to the State Roadway Design Engineer. The addition of green colored pavement to bicycle lanes does not require a local agency maintenance agreement. FDOT may fund the assessment of need, but shall be responsible for the design, construction and maintenance of the green colored pavement if its need has been demonstrated in accordance with the requirements above.

S523-0009	S523	TrafficPatterns	Flint Trading Inc dba Ennis	6/1/2009
Comments and Limitations	Approved for Vehicular and Non-Vehicular applications, requires sealer, Approved for Bike Lane Use		-Flint 115 Todd Court Thomasville NC 27360 (336) 475-6600	Last Recert 5/10/2013

S523-0020	S523	StreetBrick XL	Atlantic Paving Co., Inc.	6/26/2013
Comments and Limitations	Approved for Vehicular and Non-Vehicular applications, Approved for Bike Lane Use Conditional Approval		8309 N.W. 70 Street Miami FL 33166 (305) 513-8632	Last Recert

Requalification and Other Product Evaluation Links



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Phone: (850) 414 - 4353

Fax (850) 414 - 4199

Requalification Schedule and Criteria	This schedule is a quick reference to identify the Requalification schedule and the criteria used to recertify existing products on the QPL. The schedule is arranged by the Specification, Structures or Design Index reference that identifies the product usage or material requirements.
Sample Packing Slip	The Sample Packing Slip document is to be used when submitting a Sample to the State Materials Office for product testing.
Category I Devices Category II Devices Other Devices	These checklists are a quick reference to identify the Requalification criteria used to recertify existing products on the QPL under Specification 102.
Transportation Product Evaluation Procedure	Transportation related manufactured products are introduced to the Department from a variety of sources. This procedure addresses the process used to evaluate those manufactured products for potential use on the State Highway System.
Alleged Deficiency Form	This form is to be used when a deficiency in the performance of an existing QPL product is suspected. This form initiates an investigation into the deficiency. Please provide as much information as possible to facilitate the investigation.
Maintenance of Traffic QPL Product Marking Requirements	These are the product marking requirements for Maintenance of Traffic (MOT) devices that are listed on the Qualified Products List (QPL) and used on FDOT projects.



STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
NOTIFICATION OF ALLEGED DEFICIENCY
TRANSPORTATION PRODUCTS QUALIFIED PRODUCTS LIST (QPL)

690-020-01
SPECIFICATIONS
0708

PRODUCT/MATERIAL

QPL No: _____ Financial Project ID No: _____ State Project No: _____

Product/Material: _____ Manufacturer's Name: _____

Manufacturer's Address: _____

Prime Contractor: _____ Contractor Applying Product/Material: _____

DESCRIPTION OF ALLEGED DEFICIENCY

Date(s) deficiency occurred: _____ Documented In Project daily reports: YES NO

Describe deficiency:

Possible reasons for deficiency:

LOCATION OF ALLEGED DEFICIENCY:

Identify locations: _____

OTHER INFORMATION

Resident Engineer/Maintenance Engineer In responsible charge: _____ Date: _____
Signature

Name of person originating this notice: _____ Name
Signature Date: _____

Phone Number: _____ Fax Number: _____

Maintain a copy and mail original to: FDOT, Specifications and Estimates Office, Product Evaluation Section, 605 Suwannee Street, MS 75, Tallahassee, FL 32399. A copy may also be emailed to: product.evaluation@fdot.state.fl.us

FOR PRODUCT EVALUATION USE ONLY

Received by Product Evaluation Office and assigned to: _____ Date: _____

This alleged deficiency is the _____ (number) within a 12 month period. Alleged deficiency has been discussed with individual originating the notice, the applicator of the product/material and the manufacturer. Attach supporting documentation/report of field verification as required. Documentation should include details regarding product/material failure or application failure.

Originator: _____ Date: _____ Phone Number: _____

Applicator: _____ Date: _____ Phone Number: _____

Manufacturer: _____ Date: _____ Phone Number: _____

Product Evaluations Administrator Concur: YES NO If yes, date sent to State Materials Office: _____

Contact Information

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THANK
YOU

Questions?