5230000 PATTERNED PAVEMENT
COMMENTS FROM INTERNAL/INDUSTRY REVIEW
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David O'Hagan
414-4283

Comments: (Internal, 4-28-11)
1. **523-1** (4th paragraph, 2nd sentence) "Joint openings shall not exceed ½ inch in width."

Why would we consider or specify any joint? If these products are only overlays, there should not be any joints.

Response: The language about the joint openings was in the existing language, presumably included to limit the size of "mortar joints" within patterns for ADA compliance. The language has been modified accordingly to reflect the ADA intent in a more generic manner as follows.

Provide the- pattern type and color as specified in the plans. ~~Joint openings shall not exceed 1/2 inch in width.~~ *Variations within a pattern shall comply with ADA requirements.*

2. **523-2.1** (1st sentence) "Meet manufacturer's specifications for all patterns, textures, templates, sealers, coatings and coloring materials."

How are we sure that this will match what is on the QPL?

Response: The details of what is proposed by the manufacturer will be part of the QPL application process. The intent of this language is to obligate the Contractor to install it as intended. No changes made.

3. **523-2.1** (2nd paragraph, 4th sentence) "However, the Department reserves the right to deny consideration of materials based on its own experience in similar service applications."

I thought QPL was meant to preclude such rights. Please explain.

Response: Agree. This sentence has been deleted, subject to the use of non-hazardous materials.

4. **523-2.3** (6th paragraph, 1st sentence) "Manufacturers must provide a field service test installation within a marked crosswalk on a roadway with <u>an ADT of 8,000 to 12,000 vehicles per day per lane</u>, on a site approved by the Department."

With the recent experience on Brickell Avenue, should we perhaps have two classes – one for average to low ADT and another for high ADT?

Response: The AADT range has been modified, and is now specified as 6,000 to 12,000 vehicles per day per lane, which is more representative of overall actual usage and beneficial in establishment of viable test deck locations. Considering the state of current technology for this group of products, we anticipate there may be difficulty getting products to last three years or more for AADT higher than 12,000 vehicles per lane per day.

5. **523-3.1** "**Product Submittals:** Well in advance of the intended beginning of construction, provide pattern and color samples for the Engineer's use for confirmation that the material being proposed for use will meet pattern and color specified in the plans."

Add "and are on the QPL."

Response: The spec addresses the requirement to use a QPL product elsewhere. The suggested language would be redundant if added here. No changes made.

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Barry Smith

Comments: (Internal, 4-29-11)

1. **523-1** (2nd paragraph) add/delete highlighted text

For the purpose of this Specification, patterned pavements are defined as visible surface markings or palpable imprinted markings applied as an overlay to the roadway surface. Vehicular traffic areas are defined as those subject to vehicles within the traveled way, shoulders and auxiliary lanes. Non-vehicular travel areas include medians, islands, curb extensions, sidewalks, borders, plazas and other areas typically subject to foot traffic *only* ~~and where vehicles do not travel~~.

Response: Agree. Changes made.

2. **523-2** (1st paragraph) add highlighted text

523-2.1 General: Meet manufacturer's specifications for all patterns, textures, templates, sealers, coatings and coloring materials. Use only material that is delivered to the job site in sealed containers bearing the manufacturer's original labels *including lot number and expiration date (if applicable)*.

Response: After further consideration of the second sentence of 523-2.1, the entire sentence has been deleted. Not all products can be packaged and shipped to the project in sealed containers; or are all products identifiable by lot and expiration date. Change made.

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3. Why do we want two types (vehicular and pedestrian)?

Response: In researching project history on where these products have been commonly used, we found that a significant amount of product was being applied to non-traffic medians and islands, curb extensions, sidewalks, borders, and other areas not subject to vehicular traffic. This usage differs significantly from what is described in current specifications, defined almost exclusively for vehicular traffic. Therefore, major reasons for establishing two types are:

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1. Friction requirements for vehicular traffic are different than friction requirements for non-vehicular, pedestrian traffic.
2. Dimensionally, we must limit the thickness of applications subject to vehicular traffic to avoid a "speed hump" phenomenon. Conversely, thickness is not a concern in non-vehicular areas such as sidewalks and plazas.

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As a result, the modified specification recognizes the difference between vehicular and non-vehicular applications, as well as applicability of various products for use over concrete and asphalt. The new specification has been opened up to allow more products to compete, at the

same time ensuring they are reviewed, approved and listed on the QPL to ensure proper usage with respect to the type of traffic and substrate. No changes made.

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Dan Hurtado
414-4155

Comment: (Internal, 4-29-11)
A couple of comments:

1. **523-1** Page 1, 2nd paragraph, 1st sentence: "…are *defined as visible surface markings or palpable imprinted markings applied as an overlay to the* ***roadway*** *surface*." The word "pavement" might be more appropriate. Not all patterned areas are within the roadway.

Response: Agree. Changes made

2. Page 4, Section **523-2.3**, 2nd paragraph, 1st sentence: "*Manufacturers must provide a* field service test installation…" Is the manufacturer a party to the contract? If not, it might be better to direct the Contractor to "Secure a field test installation from the manufacturer…".

Response: Disagree. The language currently used is related to the manufacturer's testing obligations related to the QPL approval process, and is very consistent with other QPL language used in our specifications. No changes made.

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Emmanuel Uwaibi
414-4372

Comments: (Internal, 4-29-11)

1. **523-2.1**(4th paragraph):

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

Response: We are excluding products that exude fumes, not exclude fumes.

2. **523-3.3** (2nd paragraph):

For any continuous or abutting areas, color materials must be from the same lot/batch. (What if this an issue with the manufacturer?)

Response: Agree. This requirement has been deleted as identification by lot or batch is not possible for all products.

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Allen Hughes
352-955-6651

Comments: (Internal, 5-2-11)

1. (posed by Charles Holzschuher)
The only comment I have is the evaluation of friction for non-vehicular traffic areas (number 5 under **523-2.2**, see below). The ASTM E-1911 (DFT method) could be used for the 523 application in lieu of the pendulum test device (E-303).

5. For products proposed for use in non-vehicular traffic areas, manufacturer's laboratory test data from an independent laboratory verifying the material meets the requirements of this Section, including verification that the patterned pavement 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.

Response: Agree that DFT might be able to be used for non-vehicular areas, but with a different value than the one used for vehicular areas. We will consider this comment for potential inclusion in the future, if correlation can be established. No changes made at this time.

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2. (posed by Mike Bergin)

1. **523-2.3** The phrase, "travelled way" is too subjective. Suggest that "wheel path" be used since this will indicate the most wear on the patterned surface than anyplace else in the lane. In addition the term wheel path is probably already used for other specifications that required friction values or other tests in the roadway that are used for acceptance or verification.

Response: Disagree. "Traveled way" is a term defined in Section 1 of the FDOT Specifications. The intent is to establish acceptance criteria reasonably related to the overall visual condition of a crosswalk installation that can be approximated, if necessary. While it is true that wear will occur primarily in the wheel paths, that term is not defined within the specifications, actual wheel path wear cannot be easily measured, and establishment of reasonable acceptance criteria for wheel path wear would be very difficult. No changes made.

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2. **523-3.1** "Well in advance" is again too subjective. State that we want 3 or 6 months (or whatever we want) prior to starting construction, be specific or my definition of "well in advance" may not be the same as the contractors.

Response: It would be nice to be more specific, but the amount of time will vary greatly from project to project, including some projects with very short contract time duration. "Well in advance", although not specific, was an attempt to convey the message to the Contractor that it is important to make his submittals early so as not to delay himself. The language has been changed **from** "Well in advance of the intended beginning of construction, provide…" **to** "Prior to installation, submit…."

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Ray Haverty
410-5531

Comments: (5-13-11)
I have reviewed this proposed specification change and have a concern with the term used in **523-3.1**, the term is "Well in advance of the intended beginning of construction," My concern with this is what is "well in advance". Is this defined as hours, days, weeks, etc. I don't think this term would be defendable during a protest of a sample being provided soon enough to be evaluated before the contractor's operation starts. I think this should be defined better than "well in advance"……

Response: Please see response to Allen Hughes/Mike Bergin (#2).

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Mike Bergin
352-955-6666

Comments: (5-13-11)
I had one comment in **523-2.1**, the second paragraph reads (suggested text is highlighted):

"Material coatings used to achieve the pattern and color shall produce an adherent, weather resistant, skid resistant, wear resistant surface "after placement" under service conditions."

My reasoning is that the pavement will need to be tested prior to opening to traffic which means that it will be tested prior to being "under service conditions". Please use as appropriate.

Response: The assumption that these products are tested before opening to traffic is incorrect. In most cases, highways are opened to traffic immediately after installation is completed. No changes made.

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Bob Kosoy
904-360-5222

Comments: (5-13-11)
We concur with the proposed changes, however we recommend that in **Section 523-1** the second paragraph be relocated to be the 1st paragraph. It would be our preference that the definition precedes the other details and it seems to flow better with the surrounding information.

Response: Thank you for the suggestion, but we feel the specification flows better as drafted and is more consistent with the format of other specifications.
No changes made.

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Bernie A. Masing
863-519-2543

Comments: (5-16-11)
Under **523-3.1 Product Submittals**: What is the actual time frame for the statement "Well in advance of the intended beginning of construction…."?

Response: Please see response to Allen Hughes/Mike Bergin (#2).

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Richard Hewitt
386-943-5305

Comments: (5-16-11)
I see there are friction number requirements in this Specification. The Spec has a minimum friction number of 35 under the QPL requirements section 523-2.2(4)a and also has a minimum friction number of 35 after three years or traffic (as listed in the performance criteria Section 523-2.3(3)a). Wouldn't you want to set the friction number higher than 35 initially in the QPL section to account for any reductions in friction over time and help ensure the friction number is at least 35 after 3 years of traffic?

Basically have two friction number limits, an initial limit at time of construction and then a minimum after three years of traffic.

Response: The intent is to specify a minimum level of performance during the entire three year period. Although the suggestion is logical, it would be difficult and arbitrary to specify an initial number, since the friction curves over time are very different for various products.

No changes made.

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Paul Gentry
414-4118

Comments: (5-16-11)

1. **523.2.3(2.)** "Wearing of the material coating shall not expose more than 15% of the underlying surface area *as measured within the traveled way*."
   This needs to be addressed as to how the 15% of the underlying surface is to be measured as it is geometrically impossible to measure the irregular exposed areas throughout an entire crosswalk area. The use of a template has been suggested to take a small sample size for a designated area. Preformed thermoplastic typically does not have this problem. I have generally seen it occurring with the epoxy/aggregate overlays.

Response: The intent is to establish acceptance criteria reasonably related to the overall visual condition of a crosswalk installation that can be approximated, if necessary. While it is true that a precise measurement of wear over the entire geometric area is difficult at best, the use of a template over a small area is even less appealing, given the near impossibility of placing it over a truly representative area. The use of the 15% criteria provides a visual baseline that could be supplemented by more precise measurements, if necessary to resolve a dispute on a particular installation. No changes made.

2. (5-25-11) **Section 523-2.3** states to provide a field service test installation within a marked crosswalk on a roadway with an ADT of 8,000 to 12,000 vehicles. The average AADT for the test deck installation in Gainesville ranged from 5,600 to 7,700 AADT. The installation, here in Tallahassee, ranges in AADT from 7,250 on the south end of the test deck to 11,100 just beyond the north end terminus of this test deck. I think the wording needs to be changed to "site approved by the department"

Response: Agree. ADT has been changed to "…6,000 to 12,000 vehicles per day per lane on a site approved by the Department".

2. (5-25-11) **Section 523-2.2(4)** states for products proposed for use in vehicular traffic areas to submit manufacturer's laboratory test data from an independent laboratory verifying friction numbers by either the DFT or Lock-wheel test methods. Is the intention to have an independent laboratory do these measurements? In the past, manufacturers have either installed an initial installation of their product on a localized crosswalk, some form of a parking lot, or other roadway to perform the lock wheel testing , which happens to be very specialized and expensive. With the advent of the DFT, the sample size can be a much smaller surface area to be able to test. Even with this, there are not an abundance of these 2 types of equipment available for use. I would suggest, as an option, samples to possibly be submitted to the SMO (Pavement Evaluation group) for DFT testing (if they are agreeable). I do not have that many samples for products being submitted for QPL consideration such as to overwhelm them. It would be a lot cheaper in cost for the manufacturers to have this beginning option, as they are already responsible for MOT and contractor cost on the initial test deck installation. The same could be considered for the non-vehicular areas. The use of the BPN should be scratched due to the poor performance (repeatability particularly) of this equipment on "non smooth" surface areas. Although the use of the DFT has been discussed for a measuring tool in these areas, a correlation of this equipment speed to the "walking speed of a pedestrian" has not been established in my conversations with the Pavement Evaluation group at this time. We

are in conversations concerning this at this time.

Response: Disagree. The intent is to have the manufacturer bring us a product that has already been tested, with knowledge that it will perform to our specification requirements, not to have the Department test samples for him. This suggestion would also result in two levels of testing by the Department, which is not desirable. No changes made.

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Mark Fox
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Comments: (6-1-11)

1. The name "Patterned Textured Pavement" should be kept the same. In the beginning of developing S523 friction was a major concern for the department. There were reports of motorcycles and pedestrians slipping on some Streetprint crosswalks in Gainesville and perhaps other places unknown to me. Some manufacturers tried to sway the department to the british pendulum (which suited the manufacturer better) test for friction but the department found that the ribbed wheel skid test was the most accurate and true to test for friction. Which was true and by maintaining that standard the department made every manufacturer "think twice" before agreeing to the conditions to have their product listed on the QPL conditionally. By removing the word "Textured" the department is sending the message that the issue of friction is no longer of equal importance.

Response: Friction is still of importance to the Department, with specific test methods and values specified. The word “textured” has been deleted because not all products are textured in the same manner. No changes made.

2. **523-1**: The separation of "areas subject to vehicular traffic or non-vehicular traffic" will only serve the manufacturer in getting an inferior product approved and sold to make their money. It will not serve the department or taxpayer by demanding a product meet standards that serve the public.
   Any product that cannot hold up, or last, as has been proven since the inception of the QPL around 2005 should not be accepted anywhere.
   For example, in 2004/5 the department realized the painted on coatings (ie. Streetprint and all the knock offs of it) that are roughly 4 mils per coat, with 2-4 coats, NEVER held up. That was true then and is true now. By making a separation of vehicular traffic and non- vehicular traffic you are opening the doors to already proven inferior products. The description of non-vehicular traffic is described as "medians, islands, curb extensions, sidewalks, borders and other areas typically subject to foot traffic only". However, EVERY ONE of those areas described also gets vehicular traffic! And what does "and other areas typically subject to foot traffic only" really mean. It is not definitive as the S523 has always been. It will allow for inferior products to be sold for use on FDOT road systems.
   Paveway Systems product called "Paveway STS" is the first product listed and has been on the QPL the longest. It has been proven to last based on the standards set 5 years ago and it continues to serve the department and taxpayer at every location it's been used at. When the department measured the thickness of STS in 2005 they called it 164 mils. However your new proposed thickness is "not to exceed 150 mils".
   That does not make sense to contest the BEST and ONLY product PROVEN to serve the standards required by the department for about 5 years.

Response: The Department has determined these products are used in a wide variety of project situations, subject to vehicular traffic and foot traffic, on a variety of asphalt and concrete substrates. The underlying intent of this modification is to open the specification to more products, while categorizing them according to application to ensure we can put the right product in the right application. We have more than one type of asphalt; more than one type of concrete. We need more than one type of patterned product. No changes made.

3. **523-2.1**:

"use only materials that is delivered to the job site in sealed containers bearing the manufacturer's original labels including lot number and expiration date (if applicable)."

This could work if every product was the same, but they are not. Only some products have lot numbers and expiration dates. Are you also trying to state how a product is suppose to be packaged? That should be irrelevant to the department. Is the next revision to change to what kind of truck is to deliver the product followed by what time or day of the week. The ONLY matter of importance to the department is that the product lasts a long time and cost as little as possible. The certification of the manufacturer and the conditional approval standards accomplish this goal. By making these changes the department will be favoring some manufacturing processes and products over others. Even though there is no need to re-invent the 5 year old wheel that has worked for the department.
"*Color shall be integral and consistent throughout the installation. The composition of materials is intended to be left to the discretion of the manufacturer. However, the department reserves the right to deny consideration of materials based on its own experience in similar service applications*."
Once again the department is not setting the standard clearly and IS leaving it open ended. None of the Thermoplastic products have PROVEN to be long lasting. They, and the Imprint / Brickprint products have always been sold as "the color is integral and consistent". But history proves Decomark, Decomark HD, Imprint, Brickprint, Streetprint XD have ALL been removed from the QPL even though the color has been integral and consistent. That criteria does not relate to performance which is what the department should be after. This is only a ruse to help a manufacturer gain market share. If the composition is left to the manufacturer, but the department doesn't want it, for whatever reason, then you might as well not say either because they are conflicting statements. If you want to allow the creativity of the manufacturer (and you should) then allow it by holding them to the performance standards as has been done for the last 5 years and has worked. If they want to use feathers in the roadway and are willing to accept the conditional warranty and meet or exceed the initial listing criteria then let them. Anything short of this is the department over stepping their bounds.

Response: We agree with the comment about sealed containers and labels and appropriate changes have been made. Please see response to Barry Smith (#2).
We do not agree with the comments about color. The sentence “However, the department reserves the right to deny consideration of materials based on its own experience in similar service applications” has been deleted. No other changes made.

Comments: (6-7-11)
4. **523-2.3 Performance Requirements**

There are performance requirements for "vehicular traffic areas" but no performance

requirements for "NON-vehicular traffic"? The only benefit noticeable goes to the manufacturer because they can have an inferior product and not be held responsible. However the benefit should go to, and belongs with, the department / taxpayer by having tough but meet-able performance requirements. Even if there were to be two separate sections for use, which I've already expressed there should only be one standard.

> "2. Wearing of the material coating shall not expose more than 15% of the underlying surface area *as measured within the travel way*".

This area of discussion is critical to performance. In the past 5 years or so there has been 1 product (which has never been removed from the QPL) that consistently wears off the road. Even though this happens, and is true at every location of the product that I've seen and taken pictures of, the amount of area is not quite enough to reach this ambiguous form of measurement percentage which proves there is a problem with the manufacturing and / or installation of the product.
The department should make the requirement of this area more stringent. Should not be broken up into "traveled way" or any other way but should be overall. It should also apply to vehicular and non- vehicular areas. The percentage should be 1.5 - 3% of the overall area of PTP installed, NOT 15%. By making it 15% it is giving a free pass to the manufacturers and not serving the department and taxpayer. Over the last 5 years there have been many failures by over half of the product listed on the QPL. Some have been removed some remain listed. One I know of in particular that remains listed has MANY failures of "exposed underlying surface" but according to the department not quite enough to go over the percentage. To the average / honest person it still looks terrible on the road and if asked they would agree it should be fixed. Not just a brick (or area) here and there, but should be treated similarly to a "rolling straight edge" deficiency. A repair that looks good and lasts for the public, not something quick and easy that suits the manufacturers desire.

The department has ALWAYS frowned upon open flames or infrared reheating of placed and cured asphalt. It is usually over heated (burned) which steals life from the pavement longevity. It weakens the asphalt. By making vehicular and non-vehicular areas having different performance requirements (actually, there are NO performance requirements for non-vehicular) the department IS ALLOWING products that MUST REHEAT the asphalt in order to smash a wire rope template into it. Certainly it will be heated to over 300 degrees, after all, that makes it easier for the installer. The manufacturer's spec will be written in a fashion that looks like they frown upon this also, which will / could allow them to blame the installer. By writing the S523 this way the department would be inviting sub-standard performance.

Response: We do not expect significant amounts of wear of products in non-vehicular applications. Should this become an issue, we will make modifications accordingly in the future.
No changes made.

5. **523-3.1**

What is the exact time of "well in advance"? To some it could mean 1 week and then to others it could mean 10 weeks. We've always suggested between 1-3 months because once the design, pattern and color are decided on the manufacturer should be allowed 1 month to manufacture product for the project.

Response: Please see response to Allen Hughes/Mike Bergin (#2).

6. **523-3.3**

Again the department IS encouraging "painted" on coatings that the department has knowledge and history of not lasting. The thermoplastic paint S523 products are also paint, but they are suppose to have some kind of aggregate in them to provide friction. Which used to be of MAJOR importance to S523 as well as the roadway. If I remember correctly, a big factor of the department switching to granite from lime rock, in the asphalt mix around 2003, was because lime rock was softer and it polished quicker than granite. Basically, it lost it's friction and got slippery. However the department has not defined what type of aggregate, and how it's embedded, in the thermoplastic S523 products. Considering that LARGE SHEETS of thermoplastic paint are to be placed in vehicular and pedestrian trafficked areas this should be of MAJOR importance to the department and the public. Large areas of PAINT (any kind) are slippery.

Response: Performance requirements for friction apply to all products. No changes made.

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Mark Robinson
D5 Transportation Development

Comments: (6-2-11)

1. It would appear that thermoplastic is being deleted as an option. One concern is that these changes may make it more difficult for local agencies to implement projects with patterned pavement. Will manufacturers readily be able meet these new requirements for friction? I am assuming this is going to industry for review as well?

Response: Thermoplastic products are not being eliminated as an option. We expect this specification will provide more options to local agencies, more clearly identified in terms of traffic and substrate type to allow the usage of the right kind of product in the right application. Friction requirements are no more severe for vehicular applications than existing products, and are properly specified to be less restrictive in non-vehicular applications. No changes made.

2. Why is the thickness requirement stated in mils?

Response: The thickness of pavement markings is typically expressed in mils, as in the thickness of the guide lines for the crosswalks in these applications.

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Ken Zinck for Dave Catron (DRMP,Inc.)
386-740-3471 (KZ) / 407-362-1358 (DC)

Comments: (6-2-11)

I have only recently been exposed to one particular manufactured product "Traffic Patterns-Flint Trading", so my comments are primarily based on this product.

Under Section 523-4 Method of Measurement, I see that the last sentence beginning with "Milling required.." has been lined thru for deletion.

Under Section 523-5 Basis of Payment, I would like to see the second sentence modified to read:

"Surface materials, including colors, sealers and/or resins, and surface preparation ***including removal of existing pavement markings***, shall be included for payment under this Section."

This recommendation is due to the fact that the heating of the "Traffic Patterns-Flint Trading" material can melt existing thermoplastic below the new material and discolor the surface of the new patterned pavement material. Flint Trading's printed installation instructions say that their material can be installed over existing thermoplastic, but their technical department has concerns about the discoloration of the new material.

This particular manufacturer does not use measured temperature but uses indentations in the manufactured material to provide a visual reference when the correct temperature has been attained. From my observations of this material installation, there is a point in heating where the temperature is just right to melt and adhere the product and the next moment it is hot enough to melt existing thermoplastic and draw the existing thermoplastic material up into the new material.

The finished product appears and looks to be bonded to the surface just like hot applied thermoplastic.

Additionally, where this material is placed on existing asphalt pavement that is not being milled and resurfaced as part of the work, there is no need for a separate line item for removal of existing pavement markings.

As I stated these comments are specific to one manufactured product that I have seen used.

Response: The situation described here does not appear to be a normal situation, and is considered to be outside of the scope of this proposed modification. The comment is being addressed with the author of the comment by the Product Evaluation staff, outside of this process.

No changes made.

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Gerry Oliver
PatternPpaving Products
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Comments: (6-6-11)

"For ~~applications~~*installation in areas subject to vehicular traffic, the Department will only consider products applied as an overlay to the top of pavement, with a finished thickness not to exceed 150 mils"*

The "FrictionPrint" product we manufacture typically goes down at 3/16" or about 180 mils. The white thermoplastic bar that is typically extruded next to the product goes down at about 125 mils. What is the reason for the 150 mil requirement?

Response: The 150 mil was specified to approximate the nominal thickness of the products typically used for the guide lines along the edges of the crosswalks in these applications. This was specified to avoid the “speed hump” phenomenon that has been experienced in some previous installations with greater thicknesses. The 150 mils is being increased to 180 mils to potentially accommodate additional products. New language is as follows:

For *installation of overlay products in areas subject to vehicular traffic, the finished thickness shall not exceed 180 mils…..*

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Annette K. Brennan, DDE
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Comments: (6-7-11)

1. **General**: Discussions over the past year between District Design Engineers/Central Office have lead to fewer available options for aesthetic treatments on roadways. At the District level, the need for these options has increased and unfortunately, the choices available have decreased, as depicted in this spec. We recommend specification language that will enable the Districts to have more options and promote industry use.

Response: As previously noted, we can confirm that these products are used in a wide variety of project situations, subject to vehicular traffic and foot traffic, on a variety of asphalt and concrete substrates. The underlying intent of this modification is to open the specification to more products, while categorizing them according to application to ensure we can put the right product in the right application. We believe this modification will have the opposite effect from this comment's conclusion, and will increase the available choices. No changes made.

2**. General**: Typically, specifications are written for the contractor's use, and this specification has revisions that give design guidance and attempts to establish policy. The D5 Design Office recommends the design direction be placed in appropriate documents.

Response: This modification is consistent with PPM revisions already adopted, and implemented. No changes made.

3. **523-1 Description**: Third paragraph (second sentence) states, "*Products* requiring removal of *pavement or requiring blockouts or trenches below the top of* pavement, *surface will not be considered for approval in vehicular travel areas.*"
However, it is possible for full or partial removal of pavement since during our typical resurfacing, we remove 1 to 1 ½ to 2 inches, etc of asphalt. We need a way to be able to do the same process and place the colored pavement or other aesthetic treatments.

Response: Typical milling and resurfacing removes the pavement over a large area, not just a swath within the crosswalk area. Blockouts and trenches for application in areas subject to vehicular traffic would introduce joints which would otherwise not exist and create needless risk of water infiltration and joint wear. Mill and fill products also have a relatively high installation cost in comparison to other product options. The elimination of mill and fill products will not negatively affect our ability to provide aesthetic treatments. No changes made.

4.**523-2.2 Qualified Products List (QPL)**: This text appears to take out most of the products on the current QPL. Our district partners from cities and counties have requested aesthetic treatments to enhance the livability of their communities. What is going to be left on the QPL? We need options.

Response: Of the products currently listed on the QPL, only two products would be eliminated, and only in vehicular applications. They could still be used in non-vehicular areas. No

changes made.

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Dennis Evangelista
Flint Trading, Inc.
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Comments: (6-6-11)
Thank you for this opportunity to comment on the proposed specification revision to Spec 523 Patterned Pavement. We do ask for some clarification of the language in the opening section 523-1 Description: "*For the Purpose of this Specification, patterned pavements* ***are defined as*** *…* ***applied as an overlay*** *to the pavement surface*." Further on in the description it goes on to state that"…*blockouts or trenches* ***below the top of*** **pavement** *surface will not be considered…*"

1. Does this exclude any product that includes a process whereby the asphalt is heated and then imprinted with a tool to create a pattern?

Response: No. Products of this type would still be permissible.

2. Does this exclude products that are inlaid into a "stamped asphalt" pattern that sits below the surface of the road?

Response: No. Products of this type would still be permissible.

3. Additionally, would this proposed revision to the specification exclude a product being placed atop a "stamped asphalt" surface and, when heated, both covers the surface and flows into the imprinted section (below the surface of the roadway)?

Response: No. Products of this type would still be permissible.

4. Looking at the definition as it stands now it appears that these products described above would not be considered under specification 523.

Response: Incorrect. Products of this type would still be permissible.

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Ray Cruz
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Comments: (6-9-11)
1. Under **523-1** second paragraph I think we need to be careful about the all encompassing term "*markings applied as an overlay*" for example stamped asphalt where we use wire templates to stamp a pattern into the asphalt and then apply a surface coating would not be considered a "*palpable imprinted marking applied as an overlay*". I bring this point up with full understanding that currently this type of system is not on the QPL but I hope to change that in the near future. I have said for many years that this system is bar none the most aesthetic & least problematic of all the surfacing products when applied correctly and in accordance with the requirements of each location (e.g. Traffic loading, turn lanes etc). Also it is the most cost effective in the long run.

Response: Stamped asphalt products of the type described would still be permissible.

2. **523-3.3**: 14 days curing minimum has cost us several contracts in the last year because the prime is out of time and ends up getting another installer to install a PTP surface sometimes 2-days after paving. I think it would be a good idea to have the CEI validate the date the final lift is installed in order to have some independently verified information. TRUST ME THIS IS GOING TO BE A BIG ISSUE GOING FORWARD.

Response: Curing time remains an issue for installations on newly paved asphalt roadways. The language has been modified slightly to reflect that the 14 day cure time applies only adjacent to newly paved asphalt roadways.

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Rudy Powell
414-4280

Comments: (6-9-11)

Here is a summary of the comments that we discussed previously. Please include these with the comment file. Attached is the file with these changes highlighted in yellow and a new REV date.

1. Miscellaneous language revisions for clarity.
2. In 523-2.1, delete the last sentence of the second paragraph, "However, the Department reserves the right to deny …"
3. In 523-2.2 (4) and (5), should this be lab test data or test data?
4. In 523-2.2 (5), should the Dynamic Friction Tester be used instead of the British Pendulum Tester?
5. In 523-2.3, should the minimum ADT be changed from 8,000 to 6,000 to better reflect usage? Also, who performs the testing required in the last sentence- the manufacturer or the Department?
6. In 523-3.1, suggest changing "well in advance" to "prior to installation" and add the requirement to not begin installation until acceptance by the Engineer.
7. In 523-3.3, does the entire area need correcting or the area around the deficiency?

Response:
1. ok
2. ok
3. Test data
4. BPT
5. 6,000/ the manufacturer
6. ok
7. entire area

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