

3301200 – SURFACE REQUIREMENTS  
RESPONSE TO COMMENTS FROM INDUSTRY REVIEW

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Gale Page  
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352-955-2904

Comments:

The sentence "The Engineer may waive the corrections and penalties if the deficiencies are caused by manholes, valve boxes, intersections, etc. that are beyond control of the Contractor." has been removed from 330-12.4.6.3, 330-12.4.6.3(A), and 330-12.4.6.3(B). This sentence was discussed at the Pavement Smoothness Committee and the consensus was to leave in place, and therefore should be retained until the Pavement Smoothness Committee can review and if there is a reason to remove the sentence it can be discussed by the Committee and then if persuasive, a change to remove the sentence can be done at that time.

Response: The Department believes that this guidance to our project staff is more appropriate to be included in CPAM. This will be addressed in CPAM rather than included in the Specifications.

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Jennifer Taylor (John Burnette)  
john.burnette@dot.state.fl.us  
386-801-5356

Comments:

The 0.24 and 0.44 factors used below are fine if you do not deduct more or less than 100 feet, but we all know it can be more or less.  
Please see my email that is being sent to Don Roberts.

Response: Specification language and both equations in 330-12.5.2 have been revised accordingly.

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John M. Burnette  
District 5 Final Estimate Manager  
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Cell: 386-801-5356

Comments:

The 0.24 and 0.44 factors used below are fine if you do not deduct more or less than 100 feet, but we all know it can be more or less.

**330-12.5.2 Reduction in Pay Item Quantity:** When the Engineer elects to waive corrections, the Department will reduce the pay quantity for the pay item in question by the amount of material that the Contractor would have removed and replaced had the correction been made. When the pay quantity is in tons, the Department will base the reduction on removing a quantity of material that is 100 feet by the lane width by layer thickness as determined through the following equation:

$$\text{Quantity (tons)} = t \times G_{\text{mm}} \times W \times 0.24$$

Where t = Layer thickness (in.)

design  $G_{\text{mm}}$  = Maximum specific gravity from the verified mix

W = Lane width (ft.)

For FC-5 and other open-graded friction courses, the Department will base the reduction on the area that the Contractor would have removed (100 feet by lane width) multiplied by a spread rate of 80 lb/yd<sup>2</sup> as determined through the following equation.

$$\text{Quantity (tons)} = W \times 0.44$$

Where W = Lane width (ft.)

**Response:** Specification language and both equations in 330-12.5.2 have been revised accordingly.

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Frank M. Kreis  
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850/415-9634

Comments:

330-12.4.5.4 2nd paragraph (bicycle paths), Change 5/16" to 4/16" which is a reasonable surface tolerance and constructable.

**Response:** The 5/16 inch acceptance criteria was agreed to by the Smoothness Committee. No change. This can be taken up as an item of new business by the Smoothness Committee.

330-12.4.5.6, Quality Control for Laser Acceptance (1st paragraph): Quality control straightedging and correction of straightedge deficiencies of the Final Type SP Structural

Layer using the rolling straightedge should still be required in order to prevent a FC-5 overlay over rough pavement and subsequent poor quality ride. Can be changed in the future after Industry is accustomed to the laser profiler and new specification.

Response: It was agreed by the Smoothness Committee that QC straightedging be optional for incentive/disincentive Laser Acceptance for FC-5 on limited access roadways in keeping with the end result/performance based specification concepts of the Department. The incentive/disincentive portion of the Specification for FC-5 on limited access highways including optional QC is removed and will be used as a Developmental Specification to give Contractors and the Department additional experience with the specification. QC straightedging will continue to be required for Laser Acceptance. Specification changed to reflect this.

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Mike Horan, President  
Ajax paving Industries, Inc.  
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Comments:

Duane, please accept this e-mail as the strongest objection, and or rejection of a proposed specification the Department has ever attempted to approve. Table 330-3 is totally unacceptable. Why is the penalty so much larger than the bonus? Based on our results on pilot projects a 4.4 is almost impossible to attain on FC-5. Also 4.3 's are few and far between. We just finished several instate jobs using the shuttle buggy and our best ride number on FC5 was 4.3 in one location and a few 4.2's. Even with the shuttle buggy we had some 3.6 to 3.8. This job rides beautiful. The Table 330-3 will do nothing but raise the price for FC-5 if we need to worry about a glitch in our equipment or human error that creates a ride of 3.8 or lower. The incentive \$ in the Table are a joke. Why is there such a variance from penalty to a bonus? This makes no sense to me.

Response: With additional input and discussion between the Department and Industry, the incentive/disincentive Table for FC-5 on limited access highways was revised. The incentive/disincentive portion of the Specification for FC-5 on limited access highways is removed and will be used as a Developmental Specification to give Contractors and the Department additional experience with the specification.

The coarse texture of FC-5 I believe gives erroneous results from the laser. There is a note below Table 330-3 the states "\$0 pay adjustment will be applied to any segment that would receive appositve Pay adjustment when the total number of segments receiving a negative Pay adjustment on a project exceed 15% of the total segments on a project." We have a project we just finished on I-275 which ended up with a positive pay, but because of this language would not have resulted in a bonus. In addition you have a maximum pay for bonus of 5%. Why not a maximum penalty of 5%? This specification is defeatism, demoralizing for our crews, and punitive.

Response: Department data indicates repeatable results are obtained with the Laser Profiler on surfaces with FC-5. With additional input and discussion between the Department and Industry, the wording of this note to the incentive/disincentive Table for FC-5 on limited access highways was removed. The incentive/disincentive portion of the Specification for FC-5 on limited access highways is removed and will be used as a Developmental Specification to give Contractors and the Department additional experience with the specification.

What avenue does the contractor have to dispute the results? What if the laser equipment was not working properly? There is no language for the engineer to waive penalty's or removal if the repair will not substantially increase the ride. What about urban areas where you need to meet existing curb lines, manholes, water valves, etc. it is near impossible to meet this table.

Response: FM 5-549 and new FM on calibration of the Laser Profiler address the issues of acceptance testing operation and calibration to assure the Laser Profiler is providing accurate results. Retesting will be done where the requirements of these test methods are not met. Specification wording changed. There is language in the Specification where Engineer can allow areas to be left in place at no pay if determined not to be detrimental to ride quality for both Laser and Straightedge Acceptance. The incentive/disincentive Table for FC-5 on limited access highways is removed and will be used as a Developmental Specification to give Contractors and the Department additional experience with the specification.

I suggest this specification be scrapped. Otherwise the contractor's currently bidding this work will not continue to bid. Or the tax payer will pay the cost of the risk, which is substantial in my eyes. I am sorry to see you go with this spec.

Response: The incentive/disincentive portion of the Specification for FC-5 on limited access highways is removed and will be used as a Developmental Specification to give Contractors and the Department additional experience with the specification.

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Ignacio Halley, PE  
EXEC. VICE PRESIDENT  
COMMUNITY ASPHALT CORP  
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Comments:

Duane for the record we do not support this change. We request it remain as is. Can you advise me as to where we may obtain ride numbers for districts 4 and 6.

Response: The incentive/disincentive portion of the Specification for FC-5 on limited access highways is removed and will be used as a Developmental Specification to give Contractors and the Department additional experience with the specification. The

Department is adding Laser Acceptance results for FC-5 on limited access highways in D4, D6 to the data base.

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Ranger Construction Industries, Inc.  
Mike Slade, President Central Division  
Dan Cooney, Quality Control Manager  
mslade@rangerconstruction.com

Comments:

Ranger Construction Industries, Central, (RCI) has reviewed the referenced specifications. **In general, we find the proposed far too penal and in many case, just unfair. We are strongly against this proposed specification as presently written.** Following is our response to the change. The comments will be addressed by Article and Subarticle in blue type.

**330-12.4.5.3 Intermediate Layers - Agreeable**

**330-12.4.5.5 Friction Course Layer - No comment**

**330-12.4.5.6 Quality Control for Laser Acceptance – second paragraph –** clarification on “correct all deficiencies in excess of 3/8” within 72 hours.” In situations where the roadway will be opened after the 72 hour time frame the contactor should be able to correct all of the deficiencies in one operation whenever possible. **Change** verbiage to 72 hours before or after the paving is open to traffic.

Response: The Department believes that special cases need to be worked out with the project administrator.

**330-12.4.6.1 Straightedge Acceptance –** We strongly object to the first paragraph striking of “The Engineer may waive the corrections and penalties if the deficiencies are caused by manholes, etc, that are beyond the control of the Contractor” It is totally unreasonable and unfair to hold the Contractor responsible for something that is out of his control. RCI also contends that if material is good enough to allow the Contractor to leave material in place it has some value. An alternative of 50% is suggested.

Response: The Department believes that this guidance to our project staff is more appropriate to be included in CPAM. This will be addressed in CPAM rather than included in the Specifications.

**330-12.4.6.2 Laser Acceptance – second paragraph –** There are instances where things go wrong in any endeavor. The laser profile will be no exception. There **must** be provisions for a Contractor to appeal in certain cases and run the laser the second time.

Response: FM 5-549 and new FM on calibration of the Laser Profiler address the issues of acceptance testing operation and calibration to assure the Laser Profiler is providing accurate results. Retesting will be done where the requirements of these test methods are not met. Specification wording changed.

**330-12.4.6.2 Laser Acceptance – (A) For FC-5 friction course on limited access roadways – Table 330-3** - RCI believes the Table 330-3 to be penal and unfair. It is hard for RCI to offer an alternative as we do not possess the data base the Department has. **On** the few jobs we have had using the laser profiler for acceptance we have only been given the deficient Lots. We have asked for the whole report for one project and if the criteria for adjustment was applied would face a severe penalty, even through the average ride number for the whole project was 4.0. We have been told that the “average” ride number for all jobs is about 4.0. We found that hard to believe but, after reviewing the one project that we had all the data, we found the ride number to be right at 4.0. The issue then is one of mathematical definition. By definition “average” is an arithmetic mean. This means then for every increment above the average of 4.0 there must be an equal number of increments below the average of 4.0. Table 330-3 does not offer “bonus” adjustment until 2 increments above the average of 4.0 and deducts pay for one increment below average the average. The bonus for 4 increments above the average of 4.0 is \$1200.00 and the deduction of pay for 4 increments below the 4.0 average is -4,000.00. This means a hefty penalty for an “average job”. That is unfair. RCI does not have the knowledge to really know what an average or good ride number is and wonders if the Department really knows at this point. RCI does not want to see another “PWL” where after generating numerous EAR’s and tonnage removal at the expense of the Contractor, the Department decided that the PWL numbers were not realistic and adjusted the “Master Range” number without sacrificing quality. As previously stated, RCI does not have the data to offer alternatives to the adjustments in the table. RCI believes however that all Contractors should have the opportunity to produce and place the FC-5 trying different methods that would improve the smoothness quality. After compiling the data from one or two of these projects, the Contractor and the Department would have a more realistic idea of what the numbers mean and the added cost the Contractor would transfer to the cost of doing business to meet this specification.

Response: With additional input and discussion between the Department and Industry, the incentive/disincentive Table for FC-5 on limited access highways was revised. The incentive/disincentive portion of the Specification for FC-5 on limited access highways is removed and will be used as a Developmental Specification to give Contractors and the Department additional experience with the specification.

We strongly object to the fifth paragraph striking of “The Engineer may waive the corrections and penalties if the deficiencies are caused by manholes, etc, that are beyond the control of the Contractor” It is totally unreasonable and unfair to hold the Contractor responsible for something that is out of his control.

Response: The Department believes that this guidance to our project staff is more appropriate to be included in CPAM. This will be addressed in CPAM rather than included in the Specifications.

**330-12.4.6.2 Laser Acceptance – (B) For FC-5 friction course on limited access roadways – Table**

**330-4** We strongly object to the fifth paragraph striking of “The Engineer may waive the corrections and penalties if the deficiencies are caused by manholes, etc, that are beyond the control of the Contractor” It is totally unreasonable and unfair to hold the Contractor responsible for something that is out of his control.

Response: The Department believes that this guidance to our project staff is more appropriate to be included in CPAM. This will be addressed in CPAM rather than included in the Specifications.

**330-12.4.6.3.1 Joint Smoothness Acceptance Criteria – First paragraph under Table 334-45** Why would the Department not want to remove verbiage that translates into a better riding project? If the pavement at the beginning or end of the project is extremely irregular and uneven why not fix the problem right then and there. RCI believes it is best not to strike this paragraph.

Response: The joint smoothness incentive for FC-5 on limited access highways is removed and will be used as a Developmental Specification to give Contractors and the Department additional experience with the specification.

We reiterate, this proposed specification is, in many ways, to penal and unfair and unacceptable to our firm and we believe to the industry as well. We request that the Department reconsider this proposed specification. While we are in agreement with the goal of a smoother ride, we cannot agree with this approach.

Response: With additional input and discussion between the Department and Industry, the incentive/disincentive Table for FC-5 on limited access highways was revised. The incentive/disincentive portion of the Specification for FC-5 on limited access highways as well as the joint smoothness incentive portion of the Specification for FC-5 on limited access highways are removed and will be used as a Developmental Specifications to give Contractors and the Department additional experience with the specification.

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Larry Dale  
Dickerson Florida, Inc.  
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Comments:

My comments are as follows:

### **330-12.4.5.3 Intermediate Layers**

This change is acceptable

### **330-12.4.5.5 Friction Course Layer**

This change is acceptable

### **330-12.4.5.6 Quality Control for Laser Acceptance**

This addition is acceptable

### **330-12.4.6.1 Straightedge Acceptance**

The deleted language (*the engineer may waive the corrections and penalties if the deficiencies are caused by manholes, valve boxes, intersections, etc. that are beyond the control of the contractor*). The deletion of this language is unacceptable

Response: The Department believes that this guidance to our project staff is more appropriate to be included in CPAM. This will be addressed in CPAM rather than included in the Specifications.

### **330-12.4.6.2 Laser Acceptance**

The language (*a single pass*) and (*in no case will the pavement be retested once the smoothness is determined*) is unacceptable

Response: FM 5-549 and new FM on calibration of the Laser Profiler address the issues of acceptance testing operation and calibration to assure the Laser Profiler is providing accurate results. Retesting will be done where the requirements of these test methods are not met. Specification wording changed.

### **330-3 Acceptance Criteria and Pay Adjustments Table 330-3**

This table is unacceptable. It is unfair for the Department to offer an incentive that is less than the disincentive and furthermore there should be no disincentive. The contractor is being required to invest in additional equipment in order to achieve a superior ride. This should be what the incentive is all about. Don't penalize the contractor for constructing a pavement section which would be acceptable at full pay under the current specifications. Again, you have deleted the language of the engineer's option of waiving the corrections and penalties if the deficiencies are beyond the control of the contractor. This is unacceptable.

Response: With additional input and discussion between the Department and Industry, the incentive/disincentive Table for FC-5 on limited access highways was revised. The incentive/disincentive portion of the Specification for FC-5 on limited access highways is removed and will be used as a Developmental Specification to give Contractors and the Department additional experience with the specification. The Department believes that this guidance to our project staff is more appropriate to be included in CPAM. This will be addressed in CPAM rather than included in the Specifications.

### **Table 330-4**

This is unacceptable. Again, the Department is penalizing the contractor for the construction of a pavement section which has the potential of meeting the requirements for full pay under the current specifications.

Response: With additional input and discussion between the Department and Industry, the incentive/disincentive Table for FC-5 on limited access highways was revised. The incentive/disincentive portion of the Specification for FC-5 on limited access highways is removed and will be used as a Developmental Specification to give Contractors and the Department additional experience with the specification.

**330-12.4.6.3 Joint Smoothness Requirements**

This is acceptable with exception to the language which has been stricken. *(When the surface conditions of the existing/ old asphalt pavement at the beginning and/or end of the project are extremely irregular and uneven, the Contractor may request permission to extend the project limits. Upon approval by the Engineer, extend the project limits a maximum length of 100 feet at either or both ends of the project to construct a smooth traverse joint.)* This language should be reinstated. It is unacceptable as proposed.

Response: The joint smoothness incentive for FC-5 on limited access highways is removed and will be used as a Developmental Specification to give Contractors and the Department additional experience with the specification.

Dickerson Florida, Inc. would like to thank the Department for this opportunity to express our concerns relative to this proposed specification change.

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Duane Brautigam

Comments:

Since this is our Smoothness specification, I suggest the title for the Article include that word. Perhaps "Smoothness Requirements" or "Surface Smoothness Requirements" would be better.

Response: The title is believed to be most appropriate as the Specification includes texture and cross slope as well as smoothness.

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Howie Moseley  
District 2 Bituminous Engineer  
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Comments:

Removing the rolling straightedge requirements from friction courses and intermediate layers where the laser profiler is to be used will hurt the final ride quality of the roadway. The laser profiler is not able to detect bumps in the road that affect the ride quality. The laser profiler and the rolling straightedge are measuring two different things and both should be used to assure the best possible ride for our roadways.

Response: It was agreed by the Smoothness Committee that QC straightedging be optional for incentive/disincentive Laser Acceptance for FC-5 on limited access roadways in keeping with the end result/performance based specification concepts of the Department. The incentive/disincentive portion of the Specification for FC-5 on limited access highways including optional QC is removed and will be used as a Developmental Specification to give Contractors and the Department additional experience with the specification. QC straightedging will continue to be required for Laser Acceptance. Specification changed to reflect this.

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Comments:

I have read the revision and offer the following:

I would appreciate some clarification in regards to where the profiler is applicable. Seems like we are always running into projects that begin or end in an urban section (curb and gutter) where this type of testing is not needed. Consider that most areas with a posted speed of 45mph are designed at 50 or higher. If the department is looking at high speed or limited access roadways you should consider raising the speed where this becomes applicable.

Response: The decision of the Smoothness Committee is to differentiate smoothness acceptance between roadways that have a design speed of less than 50 mph, a design speed 50 mph or greater, and limited access FC-5 with design speed of 50 mph or greater. No change. This will continue to be discussed by the Smoothness Committee.

330-12.4.6.2 Laser acceptance: The numbers are not adding up for the incentive disincentive portion of the specification. The department should not be assessing penalties for RN <4.0 when ASTM classifies RN's 3.5 to 4.0 as good and very good. Materials placed and found to be acceptable should be (at a minimum) paid at 100%. If the department wants the contractor to achieve better than average results an incentive for RN's of 4.1 to 4.4 would be better served.

Response: ASTM standard E1479 is a consensus standard for world wide application. For Florida, if the Ride Rating for a project is 6.4 or less, (RN 3.2, considered by ASTM E1479 to be good) the project can be considered for rehabilitation. Expectations of the traveling public in FL are higher than other areas of the world. Specification wording clarified so that areas found acceptable by straightedge will be accepted at 100% pay. With additional input and discussion between the Department and Industry, the incentive/disincentive Table for FC-5 on limited access highways was revised. The incentive/disincentive portion of the Specification for FC-5 on limited access highways is removed and will be used as a Developmental Specification to give Contractors and the Department additional experience with the specification.

Table 330-4: I have spoken with several people in the industry about the profiler reports and we find the 3.9 value rather high when looking for 3/16 deficiencies. We have all been out checking lots that were flagged by the laser with the rolling SE and have not been able to locate the problem. I have had a fair share of lots less than 4.0 that straight edged within tolerances. If we can keep people out of the travel lanes when they are not needed, please lets' do so. Perhaps we can lower this value to 3.7 and see how things go.

Response: The focus of the Smoothness Committee has been on Laser Acceptance (incentive/disincentive) for FC-5 on limited access highways. Laser Acceptance for friction course on high speed roadways where the design speed is equal to or greater than 50 miles per hour (Table 330-4) is not changed from that contained in the Construction Memo 14-04. Note 1 has been reworded for clarity. No change. This can be taken up as an item of new business by the Smoothness Committee.

It appears that the department intends to penalize the contractor for manholes and other items outside of their control. The statement allowing the engineer to waive deficiencies caused by manholes has been replaced by "The engineer may allow the contractor to leave the deficient areas in place with a reduction in pay item quantity..." which is basically instructing the PA's to take money away for issues outside of anyone's control. I am certain that this is not the intent, please correct accordingly.

Response: The Department believes that this guidance to our project staff is more appropriate to be included in CPAM. This will be addressed in CPAM rather than included in the Specifications.

330-12.4.6.3.1 Joint smoothness: Beneath the table: It should be required (not optional) that the engineer waive deficiencies beyond the control of the contractor. Special consideration should be given to the beginning and end of the project. Far too often we are milling and resurfacing an old road that is rutted and the only way to create an acceptable joint would be to distort the new pavement to meet the old.

Response: The joint smoothness incentive for FC-5 on limited access highways is removed and will be used as a Developmental Specification to give Contractors and the Department additional experience with the specification.

330-12.5.1.1 Correcting structural layers (A): Allow the contractor to correct the deficiencies how he deems necessary as long as the asphalt is placed in accordance with 334. Why remove 2.5 inches of asphalt when the only issue is a 5/16" low spot? If the contractor can mill and replace 1" or level the area with new mix, it should be allowed. Considering that this is a structural course the corrective action should be limited to the area that needs correcting, there may be no need to R&R 100' to fix a small depression. Remember that the contractor is responsible for the final product and I would hope that everyone would take the time to make corrections with the less expensive mix and not the friction.

Response: This was not brought up or discussed by the Smoothness Committee. No change. This can be taken up as an item of new business by the Smoothness Committee.

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Jim Warren  
Executive Director  
Asphalt Contractors Association of Florida  
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850-222-7300

Comments:

Dear Duane, thank you for the opportunity to review this specification. The ACAF has a number of issues with this specification and offer a number of suggestions.

General Issues:

A. There are repeated concerns from contractors whether the laser is actually capable of correctly reading FC-5 surface due to the coarse texture, specifically mixes in South Florida.

Response: Department data indicates repeatable results are obtained with the Laser Profiler on surfaces with FC-5.

B. Contractors have expressed concern that ASTM E 1489 – 98 (2003) Standard Practice for Computing Ride Number of Roads from Longitudinal Profile Measurements Made by an Inertial Profile Measuring Device includes a table (reproduced below) that indicates a good ride at RN=3.5, whereas the proposed specification would call for removal and replacement for anything less than 3.6.

	Ride Number
	Rating Scale
Description	Ride Number
Perfect	5.0
Very good	4.5

	4.0
Good	3.5
	3.0
Fair	2.5
	2.0
Poor	1.5
	1.0
Very poor	0.5
Impassable	0.0

Response: ASTM standard E1479 is a consensus standard for world wide application. For Florida, if the Ride Rating for a project is 6.4 or less, (RN 3.2, considered by ASTM E1479 to be good) the project can be considered for rehabilitation. Expectations of the traveling public in FL are higher than other areas of the world.

C. Section 330-12.4.6.1 removes the language: *“The Engineer may waive corrections and penalties if the deficiencies are caused by manholes, valve boxes, intersections, etc. that are beyond the control of Contractor.”* **We strongly object this language being struck from the specification.** Removing this language could be interpreted in the field as you have to make it smooth regardless of what’s in the roadway whether you had any influence in or not. If the roadway design places any structures directly in the wheelpath, the contractor will be forced to make it as smooth as a paver laid asphalt – which is almost impossible to do.

D. This same language is also struck in Section 330-12.4.6.2 B (directly after table 330-4) so it would apply to the laser specification as well. It is unknown how the laser will react or what the laser will record on a manhole or valve and this could be detrimental to the RN for that section.

Response: The Department believes that this guidance to our project staff is more appropriate to be included in CPAM. This will be addressed in CPAM rather than included in the Specifications.

E. Also in section 330-12.4.6.2 Laser Acceptance in the second paragraph are references related to the testing itself. The first sentence refers to a *single pass* The thirds sentence states *“In no case will the pavement be retested one the smoothness is determined.”* **We strongly object to this** as it takes away any rights of challenging the test method. Any test method will have variability. A truck mounted testing device (even though it is expensive) is not immune to failure or defect that would affect the RN. Eliminating any option for retesting infers that this is perfect and it is not. This language must be removed and a procedure initiated for the retesting or verification of the test results by recalibration or retesting with another vehicle or other means. As an example, look at mix testing. We have QC testing, VT testing, IV testing, and IA testing all on the same material. There are checks and rechecks to identify possible errors due to machine calibration, operation, or technicians. In the Laser spec there is no verification or recourse.

Response: FM 5-549 and new FM on calibration of the Laser Profiler address the issues of acceptance testing operation and calibration to assure the Laser Profiler is providing accurate results. Retesting will be done where the requirements of these test methods are not met. Specification wording changed.

F. Table 330-3

<i>RN for each 0.1 mile segment</i>	<i>Pay Adjustment \$/ 0.1 mile segment</i>
$\geq 4.5$	+\$2,400.00
4.4	+\$1,200.00
4.3	+\$600.00
4.2	+\$300.00
4.1	\$0.00
4.0	\$0.00
3.9	-\$500.00
3.8	-\$1,000.00
3.7	-\$2,000.00
3.6	-\$4,000.00
3.5	<i>Remove and Replace</i>
$<3.5$	<i>Remove and Replace</i>

Observations relative to this proposed acceptance table:

Reference: a data set supplied by SMO entitled “*Interstate and Turnpike Projects 4\_04 to 7\_06 Schedule G1(3)*”. There were 19 interstate and turnpike projects totaling 7019 Lots or 701.9 lane miles of roadway.

<b>Total # lots</b>	<b>7019</b>	<b>% of total</b>
<b>0 - 3.5</b>	<b>30</b>	<b>0.4</b>
<b>3.6</b>	<b>25</b>	<b>0.4</b>
<b>3.7</b>	<b>62</b>	<b>0.9</b>
<b>3.8</b>	<b>164</b>	<b>2.3</b>
<b>3.9</b>	<b>467</b>	<b>6.7</b>
<b>4.0</b>	<b>1147</b>	<b>16.3</b>
<b>4.1</b>	<b>1882</b>	<b>26.8</b>
<b>4.2</b>	<b>2049</b>	<b>29.2</b>
<b>4.3</b>	<b>1128</b>	<b>16.1</b>
<b>4.4</b>	<b>65</b>	<b>0.9</b>
<b>4.5 - 5.0</b>	<b>0</b>	<b>0.0</b>
		<b>100.0</b>

- a. Based on all ride data available, Florida’s average ride is already between a 4.0 and 4.1 depending on the data set used which considered a good ride. I had made the point on more than one occasion at the committee meetings

that based on the data we have: we really are doing fine – producing smooth roads and probably don't need a new specification to try and fix 11% of the work but could through education and training.

Response: Working together to develop incentive/disincentive laser acceptance specifications is in keeping with partnering and the end result/performance based specification concepts of the Department. With additional input and discussion between the Department and Industry, the incentive/disincentive Table for FC-5 on limited access highways was revised. The incentive/disincentive portion of the Specification for FC-5 on limited access highways is removed and will be used as a Developmental Specification to give Contractors and the Department additional experience with the specification.

- b. Only approximately 11 % of the total data would fall into the penalty, 43% of the lots would be paid 100%, and 45.3% would achieve an incentive. However, looking at all the data combined does not reflect in individual projects. Based on the committee's recommendations, approximately two thirds of the 19 projects would receive a ride incentive (average of \$80,000) and 1/3 would receive a penalty (average of \$56,000) *if* the spec was in place on these projects. This analysis indicates that either the project requirements or the contractor will have a significant affect on the ride – neither of which is known. If the project type/phasing or construction sequence have a significant effect on the final ride, the contractor will need to bid these types of projects accordingly knowing they will be penalized.
  - c. Also note that none of the lots on any of the projects achieved a 4.5 or better, indicating to me that for all practical purposes, this 4.5 is not achievable under the best of the circumstances with FC-5 and therefore putting a large bonus on it is misleading at best.
2. Industry would like to see a larger middle ground (or 100% pay range) and more balanced values in Table 330-2. In addition, it might be more palatable to use smaller values to get started with.

Response: With additional input and discussion between the Department and Industry, the incentive/disincentive Table for FC-5 on limited access highways was revised. The incentive/disincentive portion of the Specification for FC-5 on limited access highways is removed and will be used as a Developmental Specification to give Contractors and the Department additional experience with the specification.

3. Attached to this table in the next sentence requires that bonus will not apply if more than 15% of the lots on the project fall into the penalty (3.9 or less). We believe this should be deleted.

Response: With additional input and discussion between the Department and Industry, the wording of this note to the incentive/disincentive Table for FC-5 on limited access highways was deleted. The incentive/disincentive portion of the Specification for FC-5 on limited access highways is removed and will be used as a Developmental Specification to give Contractors and the Department additional experience with the specification.

#### G. 330-12.4.6.3 Joint Smoothness Requirements

This is a new specification that is designed to try to reward smoothness at project limits and bridge joints. This specification will place a significant amount of inspection on areas of paving that have historically been minimized. The data that was used to develop this specification is based on only couple pilot projects in one District. Is one or two jobs representative of the whole industry?

Response: The joint smoothness incentive for FC-5 on limited access highways is removed and will be used as a Developmental Specification to give Contractors and the Department additional experience with the specification.

My concern is that this spec is now being rushed into place without an adequate education period or piloting period. Since we already have a good ride on the pavements in FL, the last thing we need now is to alienate the industry with a new specification, creating conflict where it doesn't exist.

Just this past week I have been made aware a project in south Florida/Miami area that received very low RN from a contractor known to produce exceptional work. I am investigating this and will personally look at the project next week. Applying the proposed specification would be financially devastating to the company and based on how the spec is written there is no basis for dispute or escalation.

There are enough issues surrounding this specification to recommend postponing its inclusion in the July 2007 Workbook. There is no need to rush something into print that needs work to clarify the intent and make it reasonable and achievable. I'd recommend getting a group together to talk this through.

I would propose using 2007 to shadow this specification on existing projects and help educate the Industry and Department on what these numbers mean and how best to achieve them. Again, this is a new specification and what looks good to some on paper may not translate exactly to the field. There will be a learning curve as with any new specification, as we saw with the PWL specification – and adjusts will need to be made.

There is always room for improvement in any process and any product, but we need to evaluate the cost of the improvement. There will be a cost to the Department for this specification; will the Department gain anything as a result?

Response: The incentive/disincentive portion of the Specification for FC-5 on limited access highways is removed and will be used as a Developmental Specification to give Contractors and the Department additional experience with the specification.

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Comments:

We have reviewed the proposed changes to the 330-12 (Surface Requirements) and request they be put back to committee, with further input from industry, before such revision is implemented.

Response: With additional input and discussion between the Department and Industry, a number of changes have been made to the Specification. The incentive/disincentive portion of the Specification for FC-5 on limited access highways as well as the joint smoothness incentive portion of the Specification for FC-5 on limited access highways are removed and will be used as a Developmental Specification to give Contractors and the Department additional experience with the specification.

The Middlesex Corporation has not had extensive experience on projects using the laser profile, but what experience we have had has not been good. We have had several projects with FC-5 (non-polymer) that had a laser profile result showing a significant number of LOTs with low ride numbers. However, these projects were verified with the rolling straight-edge and the actual “deficiencies” were reduced to just one or two. These projects had the blessing of the CEI/FDOT which thought they rode good, but this was not reflected in the ride numbers. There appears to be an inconsistency with the smoothness data collected on projects with FC-5. I have heard the same concern voiced by other asphalt contractors.

Response: The Specification as written requires that only low RN are tested with the rolling straightedge to minimize this operation. Department data indicates repeatable results are obtained with the Laser Profiler on surfaces with FC-5.

When surface smoothness was discussed at the FDOT/ACA conference in Tampa last year the presentation included data collected on the SR 417 project (Turnpike) in Seminole County. On that project the FDOT ran the laser profile on the structural, and on the friction course. This allowed the Contractor opportunity to address any specific locations of concern as revealed by the laser profile prior to placement of the friction. However, the FDOT has stated several times, as re-iterated in these proposed specifications, that the laser profile will only be run on the final friction; the structural course will still be evaluated with the rolling straight-edge. If the FDOT ran the laser

profile on the structural asphalt on the “test” projects, and allowed the contractor opportunity to make corrections based on that data, then the data from the friction course is not truly representative of the proposed contract conditions. In several discussions about this at various FDOT/ACA meetings, the FDOT has noted that there is no direct correlation between the rolling straight-edge and the laser profile, so drawing a conclusion from data that allowed for the laser profile to be used on the structural pavement prior to friction is not representative of what to expect using the current specification using the rolling straight-edge to evaluate the structural pavement and the laser profile for the friction.

**Response: Specification is consistent in that it requires that areas with low RN ( $\leq 3.5$ ) be tested and corrected with the rolling straightedge in accordance with 330-12.4.5.5.**

Section 330-12.4.6.1 and 330-12.4.6.2 (A & B)

The FDOT has removed the language allowing the Engineer to waive corrections and penalties in locations “caused by manholes, valve boxes, intersections, etc. that are beyond the control of the Contractor.” We object to this not being included in this revised specification. As noted in this clause, there are often conditions that are beyond the control of the contractor and the Engineer should have the authority to waive such correction/penalty. On mill and resurface projects, many existing manhole tops are not at slope to match the pavement, so there will be surface deficiencies at these locations, either by design or due to existing conditions.

**Response: The Department believes that this guidance to our project staff is more appropriate to be included in CPAM. This will be addressed in CPAM rather than included in the Specifications.**

Section 330-12.4.6.3.1

It is noted that “The incentive payment will be based only on the initial measured smoothness value, after placement of the friction course but prior to any corrective work.” Why??? If the goal is smoothness, then why not reward the contractor for a smooth joint, even if it takes multiple attempts. The incentive payment should apply to the final surface, regardless of whether that surface is the originally placed friction or is the result of corrective action.

**Response: The contractor has the option to remove and replace at any time. The joint smoothness incentive for FC-5 on limited access highways is removed and will be used as a Developmental Specification to give Contractors and the Department additional experience with the specification.**

Section 330-12.4.6.2

Here it states that “In no case will the pavement be retested once the smoothness is determined”. We strongly object to this once, and once only, testing criteria. All testing and data collection is subject to variability and error, inherent in mechanical systems and in human operation. There needs to be an allowance for appeal and for re-testing. Does the FDOT own more than one truck, and/or are there multiple operators

trained to operate? If so, has the FDOT run multiple trucks, with different operators, on the exact same projects to check consistency in the data collection?

Response: FM 5-549 and new FM on calibration of the Laser Profiler address the issues of acceptance testing operation and calibration to assure the Laser Profiler is providing accurate results. Retesting will be done where the requirements of these test methods are not met. Specification wording changed.

The current specification for Acceptance Testing by Laser Profiler allows for full pay with an RN of 3.6 and above...this same 3.6 will now result in a penalty of -\$4,000. This is a significant change and the penalty amounts versus the incentive amounts are certainly not equitable.

Response: With additional input and discussion between the Department and Industry, the incentive/disincentive Table for FC-5 on limited access highways was revised. The incentive/disincentive portion of the Specification for FC-5 on limited access highways is removed and will be used as a Developmental Specification to give Contractors and the Department additional experience with the specification.

The specification notes that a “\$0.00 Pay Adjustment will be applied to any segment that would receive a positive Pay Adjustment when the total number of segments receiving a negative Pay Adjustment on a project exceed 15% of the total segments on a project.” This certainly makes no sense whatsoever. Let’s assume an extreme example project has 100 LOTs, and 16 of those LOTs receive a 3.9 RN, and 84 of those LOT’s are greater than 4.5. According to the numbers, that would be an extremely smooth surface, but the \$201,600 of incentive for the 4.5 RN’s will be zeroed out by 16 LOT’s (16%) in penalty...and the contractor is still stuck with the negative penalty of \$8,000, and zero positive adjustment. This clause should be removed and the positive incentive and the negative penalties should stand independent of each other.

Response: With additional input and discussion between the Department and Industry, the wording of this note to the incentive/disincentive Table for FC-5 on limited access highways was deleted. The incentive/disincentive portion of the Specification for FC-5 on limited access highways is removed and will be used as a Developmental Specification to give Contractors and the Department additional experience with the specification.

#### Section 330-12.5.1.1

There should be an additional item (c) allowing the Engineer the option to approve correction by methods other than specified above. There are too many variables on differing projects and not all conditions can be anticipated in the specifications and the Engineer should have the authority to approve alternate corrections as appropriate for a specific project situation.

Response: This option was once allowed and was deleted some time ago from the Specifications since the Department found that the alternate corrections did not perform. No change.

330-12.5.2

Here it notes that the pay adjustment will be based on the area that would have been removed (100 feet by lane width). This 100' clarification should be removed. When the "deficiency" is near an end joint, or bridge joint, or other condition, the payment reduction should be equivalent to the area that would have to be removed for correction, which may be less than 100 feet.

Response: Specification language and both equations in 330-12.5.2 have been revised accordingly.

This proposed specification is a significant leap from that which is currently in use and we have a number of concerns as noted above. We recommend this specification be tabled for further review between FDOT and industry.

Response: The incentive/disincentive portion of the Specification for FC-5 on limited access highways as well as the joint smoothness incentive portion of the Specification for FC-5 on limited access highways are removed and will be used as a Developmental Specifications to give Contractors and the Department additional experience with the specification.

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Comments:

I didn't realize until this morning that comments were due on this proposal by January 18, 2007. However, I still wanted to make some comments which I hope will be helpful prior to the implementation of this change as outlined.

Our office just completed a final straightedge operation on a project that had been paved in the "piece mill" fashion by the Contractor. The project was approximately 2.4 miles long and within the limits of the paving, upon completion of the straightedge, there were over 300 noted deficiencies on the report. After review by the Project Administrator, RAS's from two offices and District Personnel, there remained 111 deficiencies that are to be corrected and/or assessed for penalties. Eighteen of the remaining deficiencies were

greater than 3/8" in deviation. The other areas were waived due to obstructions and/or exemptions as outlined in the specifications.

The Contractor had straightedged the friction placement behind the paving operation but no report or deficiencies were noted or submitted to the Department. The Department then required the Contractor to perform the final straightedge as outlined in the specifications after the completion of all the friction placement. That was when all the above deficiencies were noted and are now presently being addressed.

District Two is being very proactive with the training of the correct method for straightedging and has had the District IA Team and RAS's active with the process. This is why I feel that changing the specification to allow the "piece mill" straightedging behind the paver would not be beneficial to the Department or the public in acquiring the quality of ride that is expected. It appears to be too difficult to match all the pieced areas together to form a smooth acceptable ride surface.

Thank you for your time and consideration to my concerns.

Response: This appears to be an issue of project administration/inspection since it is clear in Specifications that "the Engineer will verify the straightedge testing by observing the Quality Control straightedging operations".

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Comments:

Thank you for the opportunity to comment on the above referenced proposed specification change. I would appreciate your consideration of the following comments during your review:

1. APAC-Southeast, Inc., Southern Florida Division, is strongly concerned that problems exist using the laser profiler to measure FC-5. We base this comment on our personal experience constructing several projects with use of the laser. Has adequate consideration or study been given regarding the source of the aggregates used in the FC-5 and the resulting texture? The laser indicated over one hundred deficiencies on a project which tested zero with the rolling straightedge. Further study is needed regarding the laser's measurement of FC-5.

Response: Department data indicates repeatable results are obtained with the Laser Profiler on surfaces with FC-5.

2. We strongly object to removal of language waiving corrections and penalties if deficiencies are caused by manholes, valve boxes, and intersections, etc.. These are all areas beyond our control (so the specs said), so why would we accept penalty for an area we have no control over? Someone will pay for it, I think it won't be the contractor, so where is the gain for those dollars?

Response: The Department believes that this guidance to our project staff is more appropriate to be included in CPAM. This will be addressed in CPAM rather than included in the Specifications.

3. Inferring that the laser is a perfect instrument, never out of calibration, never to malfunction, never perhaps jostled, bumped or otherwise affected by age, weather, or any other possible factor – just always perfect and unquestionable – is not a position that we can agree with. We strongly object to treatment of the laser reading as an absolute – with no procedure allowed for retesting, challenge or dispute resolution. No instrument can be so flawless, and removal of language to investigate the actual conditions in the event of possible problems would seem quite unfair.

Response: FM 5-549 and new FM on calibration of the Laser Profiler address the issues of acceptance testing operation and calibration to assure the Laser Profiler is providing accurate results. Retesting will be done where the requirements of these test methods are not met. Specification wording changed.

4. Much conversation has been voiced regarding the ride numbers and tables used to compute incentive/disincentive. If a “good” ride is indicated at RN=3.5, why remove it? The pay table will accomplish more if focus is on the reward, but the focus seems to be inverted. Provide more “middle ground” and a better balance of the reward and penalty values. We encourage deletion of the language which would remove bonus pay if an arbitrary percentage of lots fall into penalty. What good does this achieve?

Response: With additional input and discussion between the Department and Industry, the incentive/disincentive Table for FC-5 on limited access highways was revised, and the wording of this note to the incentive/disincentive Table for FC-5 on limited access highways was deleted. The incentive/disincentive portion of the Specification for FC-5 on limited access highways is removed and will be used as a Developmental Specification to give Contractors and the Department additional experience with the specification.

In summary, we all have the same goal of wanting a smooth riding pavement, no one more so than the contractor who built the job. Situations and factors exist and must be addressed which negatively influence smoothness of the ride. Factors such as jobsite constraints, limitation of equipment technology, project design, night work, etc., are areas outside our control. If we are placed in a position where penalty to our pay results from factors like these, and these are just a few of the many examples, we will be forced to include the expense in our bids. Raising prices and delivering the same ride will not help to achieve the common goal. We are also convinced by our experiences that use of the

laser profiler on Oolitic FC-5 is not providing an accurate measurement of the ride number. Further research / study is needed on aggregate types and surface textures. Again, thank you for consideration of these comments.

**Response:** The incentive/disincentive portion of the Specification for FC-5 on limited access highways is removed and will be used as a Developmental Specification to give Contractors and the Department additional experience with the specification.

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Larry F. Kelley, Interim District Secretary

Handled by:

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## Comments

We have retrieved the referenced document from the [State Specifications Office's Industry Review intranet website](#). Pursuant to request, we have reviewed the document, entitled "Surface Materials," and offer the following comments for your consideration.

[330-12.4.5.4 Final Type SP Structural Layer, 2nd paragraph]

We recommend changing 5/16 inch to 4/16 inch as the surface tolerance for bicycle paths.

**Response:** The 5/16 inch acceptance criteria was agreed to by the Smoothness Committee. No change. This can be taken up as an item of new business by the Smoothness Committee.

[330-12.4.5.6 Quality Control for Laser Acceptance]

We recommend that quality control straightedging and corrections for the Type SP Structural Layer be required as currently specified. The proposed specification allows the contractor to leave in areas of pavement with 4/16-inch to 5/16-inch straightedge deficiency with no correction required. As the laser incentive/disincentive is implemented, this requirement could later be removed.

**Response:** It was agreed by the Smoothness Committee that QC straightedging be optional for incentive/disincentive Laser Acceptance for FC-5 on limited access roadways in keeping with the end result/performance based specification concepts of the Department. The incentive/disincentive portion of the Specification for FC-5 on limited access highways including optional QC is removed and will be used as a Developmental Specification to give Contractors and the Department additional experience with the specification. QC straightedging will continue to be required for Laser Acceptance. Specification changed to reflect this.

Thank you for the opportunity to provide input. If you have any questions or need additional information, please do not hesitate to contact me, at (850) 415-9200.

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