

3270300 MILLING OF EXISTING ASPHALT PAVEMENT – CONSTRUCTION  
COMMENTS FROM INDUSTRY REVIEW

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Jim Warren  
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Comment: (Internal Review 11-25-09)

1: Same comment as for 330 spec regarding cross slope. We need to (?) all (QC/VT) measuring at the same location on the roadway.

The following language is in the QC section 327-3.2 but should also be in the VT sections 327-13.2 "Measure the cross slope of the completed pavement surface by placing the measuring device level at the center location of a lane and perpendicular to the roadway centerline" We discussed this in detail at the task team meeting. We all discussed wanting everyone to use the same length level and test in the same location on the roadway to ensure we would have a good chance of comparing QC to VT.

2. The language in 327-3.2 now states: The Engineer reserves the right to verify the pavement cross slope at any time by taking cross slope measurements at any locations. I don't recall having this conversation. We need to stay consistent and this last sentence should be replaced with the one in 13.2 above.

3: how many more specs are they going to try and get out before they leave for Thanksgiving?

Response:

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Jim Mills / David O'Hagan  
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Comments: (Internal Review 12-8-09) (David O'Hagan 12-11-09)

1. Table 327-1: Under "Superelevated curve", please delete the phrase "(unless the design tolerance is shown in the plans)". This phrase is not necessary since, even without this phrase, a different tolerance could be included in the plans that would override the spec. Furthermore, this specification should address "construction" tolerances only without mention of "design" tolerances, which will only lead to questions of interpretation and confusion. It will be very unusual for a designer to include a construction or design tolerance for superelevation in the plans. (David O'Hagan – I hope this revision will be made.)

2.

3. Except for the above comment, the proposed changes will be a significant improvement.

Response:

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Donnie Autry  
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Comments: (12-11-09)

Both (3270300 and 3301203) of these proposed specification changes are difficult to understand. How may roadway technicians know the meaning of *average absolute deviation* much less how to calculate it? This makes a difficult task more difficult.

Response:

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Christopher NeSmith  
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Comments: (12-14-09)

1. In the Verification section, I think if an individual verification cross slope measurement falls outside the acceptance tolerances as shown in Table 327-1, the QC and VT should perform a comparison at that location. If the average absolute deviation of the verification measurements falls outside the acceptance tolerances as shown in Table 327-1 then the QC and VT should perform a comparison in that section (in this case do you select on location or test ten locations?).
2. Also, the comparison could be clarified. The wording says "If the comparison is outside the acceptance tolerance..." I think this comparison is referring to the difference between the QC reading and the Verification reading. But there is no criteria for comparing two devices in the acceptance tolerance table. There needs to be a comparison criteria or clarification on how to determine if the comparison is outside the acceptance criteria.
3. Also, if the intent is to have the Verification and QC measure a location and determine the difference between the two devices, then the word "comparison" should be replaced by the words "difference between the two devices."

Response:

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Christopher NeSmith  
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Comments: (12-14-09)

1. This is my second comment on section 327. Now that I read the changes to 330, I see a difference between the Verification and Comparison between the Verification and QC devices. The verification section in 327 needs read more like the new Verification section in 330-12.3.2.
2. Also, in 330-12.3.2, the comparison really needs to say: "If the comparisons are beyond the acceptable comparison tolerance according to 330-12.3.1..." This will help 327 because when

you read 327 there is no reference to the definition of acceptable criteria and it almost looks as though you need to look at the acceptable criteria table.

Response:

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Bob Dion  
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Comments: (12-14-09)  
Suggest you move the last 7 paragraphs of 327-3.3 Verification (beginning with "Operate the milling machine to minimize the amount of dust...") to 327-3.1 General.

Response:  
(Rudy, I think this is a good idea.)

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Howie Moseley  
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Comments: (12-18-09)  
Table 327-1: Can the average absolute deviation in Table 327-1 be a negative number since it is an absolute number (Aren't absolute numbers always positive)? You may want to look into this and possibly provide guidance on how to calculate this value.

Response:

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Christopher Wood  
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Comments: (12-30-09)  
1) The new specification indicates the use of the "average absolute deviation" numerous times. The absolute average deviation needs to be clarified. Maybe in the table show how the absolute average deviation is calculated with an example.  
2) Include a requirement that QC provide an electronic level capable of measurements to the nearest 0.1%.

Response:

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Stefanie Maxwell

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Comment:

327-3.2 Quality Control Requirements: It appears that the font is smaller in the last two paragraphs, just above the table. Also, there are two subarticles numbered 327-3.2. It appears that 327-3.2 Verification should be renumbered to 327-3.3 Verification.

Response: (1-5-10)

From the Specifications Office: These changes have been made.

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Rudy Powell  
414-4280

Comment: (1-5-10)

1. 327-3.2 It is not clear if the contractor provides and calibrates the QC level only or both the QC and verification levels.
2. 327-3.2 Is the number of measurements per lane?
3. 327-3.2 If the verification measurements don't meet the acceptance tolerances then a comparison check is made at the QC check locations. What is being compared? Also, if the comparison at the QC locations is ok then what happens at the verifications locations that were not ok?
4. Table 327-1 The note needs to be moved into the text.

Response:

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John Danello, Jr.  
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Comment: (1-5-10)

We have reviewed the proposed specification change and feel that there should be some additional factors taken into consideration. The fourth paragraph of the proposed change, states that "If an individual cross slope deviation falls outside the acceptance tolerance as shown in Table 327-1, make corrections only in the deficient area to the satisfaction of the Engineer at no cost to the Department". After review we determined that the length of the deficient area and existing conditions should be taken into consideration. Preexisting conditions may have been the main factor in the deficiency. We feel that any individual deficiency should require additional measurements to establish the true nature of the deficiency.

A possible solution to this may be to take two additional measurements within 25' either side of the deficient area and then take an absolute average of the three measurements to see if they meet

the specified requirements of table 327-1. This will help to better define the area that is out of individual tolerance and allow a proper correction if necessary. As you are aware paver and mills are required to utilize an automatic grade control system, these systems are designed to average out grade and slope deviations over a specified length. It has been our experience that averaging these areas out and allowing the grade control systems to function to the capacity that they were designed, this will not only provide a better riding surface but a more consistent milling and paving yield.

We also believe there should be some kind of provision in the specification that allows for leaving areas that are too low in place. For instance if there is a area that has settled and a cross slope check is performed in this area, it would more than likely show the cross slope as steep or out of the specified tolerance. Re-milling a low area will only compound the issue and more than likely extend the limits of the deficient area.

Turtle Southeast, Inc and East Coast Milling Turtle, LLC have reviewed the specifications in section 327 in its entirety and feel that we have some valuable input that could help the Department achieve their Quality Control Goals. We would appreciate the opportunity to discuss the specifications at your convenience. Please feel free to contact me directly at 727-638-1801 or via Email @ [j.danello@turtlese.com](mailto:j.danello@turtlese.com) to schedule a meeting.

**Response:**

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