

THIS MEMO IS EXPIRED

September 22, 2000

MEMORANDUM NO. 27-00

TO: DISTRICT CONSTRUCTION ENGINEERS

FROM: Greg Xanders, State Construction Engineer

COPIES: Jim Warren (ACA), Greg Schiess (FHWA), Bill Albaugh, Tom Malerk, Charles Goodman, Archie Montgomery, District Bituminous Engineers, Area Construction Engineers

SUBJECT: TEST PROJECT FOR SMOOTHNESS SPECIFICATION

A copy of the Smoothness Specification that was recently developed by the Pavement Smoothness Committee, is attached for your review.

Prior to statewide implementation, I would like to try this specification on one or two test projects in each District to evaluate the performance. You may try this specification on an ongoing project by Supplemental Agreement (SA). The selected project shall be located in the rural area without intersection profiles from side streets of traffic lights, toll booths, etc. so that a fairly constant speed can be maintained to minimize the effect of braking and acceleration of the test vehicle.

In order to evaluate the effectiveness of this smoothness specification, please provide a copy of your S.A. to David Wang in my office for our reference. If you have any questions, please contact David at (850) 414-4152.

GX/wc
Attachment

HOT BITUMINOUS MIXTURES - PAVEMENT SMOOTHNESS. (REV 8-7-00)

Article 330-13 (of the Supplemental Specifications) is expanded by the following:

330-13.5 Pavement Smoothness:

330-13.5.1 General: For this Contract bid price adjustment for FC-5 friction course smoothness with Superpave Traffic Level 5, 6, 7, or D, E will be applicable. Bid price adjustment will be based on the Ride Number (RN) as established by a laser profiler. The RN will be derived from a mathematical processing of the longitudinal profile measurements to produce a ride quality or smoothness on a scale from 0 to 5. The RN will be determined in accordance with ASTM E 1489.

Only those Lots actually tested in accordance with this subarticle will be eligible for bid price adjustments. Excluded from testing are acceleration and deceleration lanes, storage lanes for turns, crossovers, shoulders, signalized intersections and ramps. Additionally, a small distance of roadway decided by the Engineer before and after the sections to be tested are excluded from bid price adjustment under this subarticle. These excluded small distances are to provide sufficient acceleration and deceleration length for the test equipment. Excluded will be accepted in accordance with 330-13.3.4.

330-13.5.2 Testing Requirements: Upon completion of the friction course, the pavement smoothness of each lane will be tested by a single pass of the laser profiler furnished and operated by the Department in accordance with the FM 5-549. The smoothness of the pavement will be determined following the straightedge for surface tolerance and the correction of any deficiencies as specified in 330-13.3.4.

Profiling will begin and end within 100 feet [30 m] from each bridge approach pavement or existing pavement that is joined by the new pavement. The Department will perform smoothness testing after the FC-5 has been opened to traffic. In no case will the pavement be re-tested once the smoothness is determined.

330-13.5.3 Bid Price Adjustment for Smoothness: For the purpose of evaluation each lane will be divided into 0.1 mile [0.1 km] LOTs. Total payment for smoothness will be determined in accordance with the following:

$$\text{Total smoothness payment} = A \times B \times C$$

Where:

A = Maximum smoothness payment \$225.00/0.1 mile LOT [\$140.00/0.1 km LOT],

B = Smoothness Factor = $(P - 70.0) / 25.0$,

P = the percent of the total number of LOTs with a RN ≥ 4.21 (obtained from the computer printout summary of the RN data),

C = Total number of LOTs (obtained from the computer printout summary of the RN data).

The Smoothness Factor shall be rounded to two decimal places and shall have a maximum value of 1.00. Any negative resulting value shall be considered as 0.00.

The bid price for the friction course will be adjusted by dividing the total smoothness payment by the total quantity of friction course being accepted. The maximum payment for smoothness will be limited to 2 percent of the original Contract amount. Adjustment of bid unit price for bituminous material shall not apply to the smoothness payment.