Supplemental Technical Specification for **April 8, 2008**

Surface Smoothness of Bridge Decks and Approach Slabs

SCDOT Designation: SC-M-701 (04/08)

1. SCOPE

1.1. This standard describes the smoothness requirements for bridge decks. The riding surfaces subject to this standard include all traffic lanes, all full-width acceleration and deceleration lanes, and lanes planned for future use on both bridge decks and approach slabs.

2. REFERENCED DOCUMENTS

2.1. **SC-T-124,** Operation of the Cox Model C8200 Electronic Profilograph for Surface Measurement

3. DEFINITIONS

3.1. *Profile Index* – Inches per Mile of total roughness in excess of the blanking band.

3.2. *Blanking Band* – A band of uniform height with its longitudinal center positioned optimally between the highs and lows of the surface record depicting at least 100 feet of pavement.

4. PREPARATION OF THE TESTING SURFACE

4.1. Provide a surface clean of all debris such as sand and aggregate and make the site accessible to SCDOT's Office of Materials and Research (OMR) personnel performing the test prior to their arrival. Remove any materials stored or blocking the areas to be tested.

5. REQUEST FOR TESTING

5.1. When needed, schedule smoothness testing through the Resident Construction Engineer (RCE), who will then make arrangements with the Pavement Evaluation Unit within OMR. If OMR personnel arrive at the scheduled testing time and find the site is not suitably prepared for testing as given in Subsection 4, above, correct the deficiency within 60 minutes. After 60 minutes, the testing must be rescheduled and the Contractor will reimburse the Department in the amount of $500 for the additional site visit.

6. TESTING

6.1. The Pavement Evaluation Unit of OMR will determine a Profile Index for each wheelpath for nominal 300-foot test sections. Partial sections will be analyzed and reported as given in **SC-T-124**. Sections that contain individual bumps in excess of the maximum values given herein will also be noted. The RCE and the Contractor will receive copies of the profile chart and test results.

7. REQUIREMENTS FOR SMOOTHNESS

7.1. The maximum allowable Profile Index value for acceptable smoothness for any individual wheelpath is 10 inches per mile utilizing the 0.2-inch blanking band for each 300-foot nominal test section. All individual bumps and depressions exceeding a cutoff height of 0.3 inches from a chord of 25 feet must be corrected regardless of Profile Index. In addition to these requirements for longitudinal smoothness, the surface will have deviations no greater than 0.25 inches in 10 feet when measured using a 10-foot straightedge placed transversely across any lane.

8. CORRECTIVE ACTION

8.1. When any measured surfaces fail to meet the criteria given in Subsection 7, above, take corrective action at no expense to the Department. Submit a written plan of corrective action to the RCE and receive approval from the RCE prior to taking any corrective action. However, approval of any corrective plan in no way relieves any responsibility for meeting these smoothness requirements. Any corrective plan that reduces the concrete cover by more than 0.50 inches from that shown in the Plans is not acceptable.

8.2. After corrective action, the surface will be retested by the Department to determine if the rideability requirements have been met. If the surface is tested and reported more than three times, including the initial rideability test, the Contractor shall reimburse the Department for each additional test in the amount of $500.

9. GROOVED SURFACE FINISH

9.1. When a grooved surface finish is required, do not apply it until all requirements for rideability have been met.