

Georgia Department of Transportation
Office of Materials and Research

Standard Operating Procedure (SOP) 34

**Certification of Contractor Personnel and Equipment for Smoothness Testing of
Portland Cement Concrete Pavement With The Rainhart Profilograph**

I. General

The Concrete Technical Services Unit of the [Office of Materials and Research](#) at Forest Park, Georgia will be responsible for the certification of personnel and equipment used for the smoothness testing on Portland cement concrete pavement. A list of certified personnel will be maintained by the Concrete Branch. Certification will remain in force for one year unless revoked for performance deficiencies of either equipment or operator.

Certification evaluation will be based on the following:

A. Profilograph: (Rainhart Model 860)

1. Calibration (static)
2. Successful operation through test pattern

B. Operator:

1. Written Examination
2. Proficiency of operation through test pattern

II. Request for Certification

Contractors desiring certification of their equipment and operator may direct their request to:

State Materials and Research Engineer
Office of Materials and Research
15 Kennedy Drive, Forest Park, Georgia 30297

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Upon notification of personnel and equipment to be considered for certification, an equipment operation and examination session will be scheduled.

III. Calibration and Certification

A. Calibration of Equipment (Profilograph) will involve the following:

1. A static calibration of the profilograph utilizing 0.5 in (12.7 mm) and 1.0 in (25.4 mm) spacer blocks for calibration of vertical displacement of the recording wheel as recorded on the recording chart. Vertical displacement will be within $\pm .03$ in (0.762 mm) of the test blocks.
2. A static check of the eccentricity of the recording wheel made through one revolution of the wheel on a stationary roller assembly. The tracing from this test shall have no areas that exceed 0.03 in (0.762 mm) from the zero baseline.
3. A check of the horizontal distance counter will be made on a 500 ft (150 m) test pattern. The distance recorded shall be within $\pm 0.2\%$ of the predetermined length.
4. A static check of the truss system will be made while equipment is lowered to the test configuration. This will be accomplished by inserting the 0.1 in (2.54 mm) test block under each of the twelve averaging wheels. No individual wheel shall show more than 0.1 in (2.54 mm) of vertical movement on the recording chart.

B. Certification of operator will involve the following:

1. An operator proficiency test will be conducted on the pre-selected test pattern. The operator must demonstrate his ability to set up the equipment in the proper test configuration mode and to maintain proper steering control through the test pattern.
2. A written examination covering all of the following procedures:
 - a. Equipment Setup
 - b. Equipment Operation
 - c. Trace Reduction and Calculations
 - d. Reporting of Results

Satisfactory completion of both equipment calibration and the operator's written examination and proficiency demonstration is required. Equipment and operators that satisfactorily meet these requirements will be added to the list of certified equipment and operators list.

Upon expiration of certification, re-examination is required. Re-certification will normally be limited to equipment calibration and operator proficiency test, but may include all activities listed above. Equipment must be checked for calibration prior to startup of each project and at other times if a problem is suspected. Equipment may be certified for several projects if paving is taking place concurrently.

IV. Revocation of Certification

When incidents occur which may cast doubt on the accuracy or capability of the certified equipment or operator to perform, evaluate and report results of profile test to the Department, comparison tests performed by and with Department equipment will be obtained. If comparison tests indicate just cause, equipment and/or

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operator certifications may be revoked, with remaining tests obtained by the Department and charged to the contractor at the rate specified in the Specifications.

Reinstatement may be considered only after all discrepancies have been corrected to the satisfaction of the Department and all requirements of [Section III](#) are met.

V. Records

The Concrete Branch of the [Office of Materials and Research](#) will maintain records of certified equipment and operators. Records will include all information shown in [Section III](#). A letter of certification for equipment and operator will be transmitted to the contractor upon satisfactory performance of all procedures. Operator certifications will remain in effect until expiration of the one-year period or removal for cause.

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