



North Carolina Department Of Transportation QC/QA Program
For
Consultant Geotechnical Laboratory

Program Statement

I. General Description

The North Carolina Department Of Transportation (NCDOT) Quality Control and Quality Assurance Program for Consultant Geotechnical Laboratory is designed to give laboratories more responsibility for controlling the quality of tests that will be utilized for the purpose of design / construction of NCDOT highway projects. It requires laboratories to perform in-house quality control processes, which include personnel training, equipment verification, calibration, and maintenance and record keeping. It will provide the means for laboratories to monitor the operation and ensure the accuracy and consistency of test results. The Materials and Tests Unit of NCDOT will be responsible for quality assurance processes, which include scheduled and random on-site inspection and annual round-robin proficiency tests. It is the intent of this program that the acceptance and rejection of a laboratory or a technician be based on the total program.

The program consists of three categories. The complete list of certification tests can be requested from the Central Soils Laboratory of Materials and Tests Unit of NCDOT.

Tier 1: Tests relate to materials general properties.

Tier 2: Tests relate to pavement construction.

Tier 3: Tests relate to soil-structure design.

II. Program Requirements

There are four basic requirements for approval to participate in this program.

- The laboratory facility shall be a designated area with appropriate working space, light, and ventilation. It shall also have a sufficient safety setup.
- The laboratory must have appropriate testing equipment that meets the Standard Specifications of AASHTO, ASTM or the NCDOT Modified Methods.
- The laboratory shall have permanent personnel position(s) to perform tests.

- The laboratory shall keep required records of calibration and maintenance of test equipment.

III. The Program

After reviewing the requested application and documentation, an assessor will visit the laboratory with a prearranged schedule. The assessment will include the condition of the laboratory facility, testing equipment, and the proficiency of technicians. With appropriate corrective actions for any deficiencies observed onsite to meet the program requirements, NCDOT will issue a certificate, valid for one year, to the laboratory and a certificate, valid for three years, to the laboratory technician(s). At the end of each subsequent year, NCDOT will conduct another on-site inspection of laboratory facility and testing equipment; and if all requirements are continuing to be met, the laboratory will be recertified for participation in the program for another year. The technician(s) will be recertified every three years after the satisfactory on-site reevaluation of the competence of the technician(s). These certifications will authorize the laboratory and technician(s) to operate under the applicable tests, which are enlisted through the program.

The certification is nontransferable for neither laboratory nor technician. However, the situation is allowed for a certified technician to conduct designated tests at certified laboratories other than his/her resident laboratory. All test reports shall bear the signature or initial of the certified technicians. Both laboratories and technicians are subject to loss of certifications by revocation. The primary reason for the loss of a certification by this means would be the falsifying of test results, records, or reports. Other reasons that might lead to loss of certification include gross negligence or apparent incompetence on the part of the technician.

Random site inspections may be conducted at any time by NCDOT to verify compliance with program requirements. The round-robin samples will be sent out to all certified laboratories for designated tests annually. The data will be collected and analyzed statistically according to the known material's properties. If the laboratory produces test results beyond the acceptable tolerance, NCDOT will initiate an investigation to determine the cause of the discrepancies. The investigation is to include a review of the testing procedures of the technician and the equipment used in the tests. If the cause can be attributed to one of the above categories, the laboratory is to take corrective action to bring the procedures or equipment into compliance. The laboratory is to then record the corrective action and report to the NCDOT. A check sample will send to the laboratory for a follow-up test.