NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS UNIT - SOILS LABORATORY

Certification Policies - Materials Technician Density Gauge Assessment Certification Program
Program Description: This Program will instruct and certify Materials Technicians in the proper procedures for performing density acceptance tests on hot and warm mix asphalt using density gauges. This Program will also instruct and certify Materials Technicians for performing assessments of certified QMS Density Gauge technicians. Materials Technicians must be certified to perform assessments of QMS Density Gauge certified technicians.
Prerequisites: Successfully complete the Nuclear Safety and Hazardous Material Class and the QMS Density Gauge Operators Class.
Duration of Certification: 5 years
Registration: Complete and submit (electronically) registration form from the M&T website.
Jim Sawyer will contact to provide Technical Trainer contact information.

Certification Process: The certification process will involve four steps and each step must be successfully completed prior to moving to the next step. If requested prior to beginning the certification process, a Technical Trainer will provide any training that may be needed. The Materials Technician must have a film badge to complete this process.
Step 1 – The Materials Technician must demonstrate proficiency with nuclear and non-nuclear gauges to a Technical Trainer. This will include performance of the following: setting proper test parameters, control strip procedures, calculation of target density, and test section procedures. The Technical Trainer will provide the non-nuclear gauge while the Materials Technician must bring the nuclear gauge that has been assigned (must be 3450 or 4640B). If the Materials Technician does not demonstrate proficiency with either nuclear or non-nuclear gauges, the process will stop and he/she will be required to obtain additional training from a Technical Trainer. Once training has been completed a second attempt to demonstrate proficiency can be attempted. If the Materials Technician fails the second attempt, the process will stop and the Field Operations Engineer will be notified. If requested by the Field Operations Engineer additional training will be provided. Once the training is completed the certification process will begin.
Step 2 - The Materials Technician must take a **closed-book** written examination. The minimum passing grade is 80. If the Materials Technician fails the written examination he/she will be allowed one re-take of exam. If the Materials Technician fails the exam on the second attempt, the Field Operations Engineer will be notified. If requested by the Field Operations Engineer the certification process will start over with Step 1.
Step 3 – The Technical Trainer will provide training regarding procedures for performing an assessment. This will include a thorough review of the checklist and methods for verifying each item listed.
Step 4 – The Materials Technician will contact C.K. Su to schedule density gauge assessments. For this step the Materials Technician will perform two assessments on a technician from the Soils Laboratory. One assessment will be performed while the technician is operating a nuclear gauge and the other will be performed while operating a non-nuclear gauge. This step will be completed at the M&T Central Laboratory and the Soils Laboratory technician will provide the non-nuclear and nuclear gauges. The technician may or may not have programmed errors and the Materials Technician must accurately document the discrepancies. Once the Materials Technician successfully completes all four steps, he/she will be entered into HiCAMS and a certification will be granted. If the Materials Technician fails Step 4, the Materials Technician must repeat Steps 3 and 4. If the Materials Technician fails Step 4 on the second attempt the Field Operations Engineer will be notified.

Frequency of Assessment: The Materials Technicians will be assessed annually.

Annual Assessment: If desired, the Materials Technician may request and receive training from a Technical Trainer. The Materials Technician will contact Jim Sawyer at the Central Laboratory to schedule an appointment with a Technical Trainer. Two separate assessments will be conducted of the Materials Technician by a Technical Trainer. One assessment will be performed while operating a nuclear gauge and one assessment will be performed while operating a non-nuclear gauge. The Technical Trainer will provide the non-nuclear gauge and the Materials Technician must bring their assigned nuclear gauge. Upon successful completion of the assessments, the Materials Technician will be required to take a closed-book written examination. The minimum passing grade for the written exam is 80. If the Materials Technician fails the written exam or the assessment is “Unsatisfactory”, the Field Operations Engineer will be notified and the Materials Technician’s Density Gauge Assessment Certification will be suspended. In order to regain their certification, the Materials Technician must complete the certification process beginning with Step 1. A copy of the assessment checklist and exam will be retained in a database at the Central Soils Laboratory.