

Materials Operations Section

Randy Pace – Materials Operations Engineer – 919-329-4200

The Materials Operations Section of the Materials and Tests Unit is comprised of three distinctive areas, **Field Operations**, **Research and Investigations** and **Quality Systems**.

Field Operations

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Field Operations is responsible for sampling and testing the various materials used in the construction and maintenance of our highway system and for a variety of plant inspections and related technician training and assessments. The Section is divided into four geographical areas each of which is comprised of Sections with Offices in each Division.

Each Section Materials Office has the responsibility of inspecting materials produced at all the quarries, sand pits, ready-mixed concrete plants, pipe plants (corrugated metal, corrugated plastic, and concrete), precast concrete plants, block plants, and other specialty plants and manufacturing facilities in their areas and throughout the eastern and mid-western United States. The Sections also conduct concrete technician certification courses.



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Research & Investigation

Samuel C. Lawhorn – Special Investigations Engineer – 919-329-4200

Perform data collection and analysis of specialty products and of new materials and methods proposed for use in the construction and maintenance of the State's transportation network. Perform forensic studies on materials incorporated into the state highway network to determine current conditions of materials and to assist in the development of new specifications to prevent future material failures. Assist in the evaluation of new products, materials, and methods for use in the state highway network. Review technical literature and disseminate information to other members of the Unit and the Department.

Perform special investigations and tests that verify the quality and installation of materials and methods used in the construction and maintenance of the states roadways, highways and bridges. Help other units and departments to determine problems in materials and structures by performing video pipe inspections, drilled shaft inspections, coring materials, and other necessary inspections.

Quality Systems Unit

Samuel J. Frederick – Quality Systems Engineer – 919-814-2220

The Quality Systems Unit within the Materials and Tests Unit is responsible for three main areas; development and monitoring of the Quality Control/Quality Assurance programs, providing Technical Support to NCDOT and Industry personnel, and the Project Material Certification of all FHWA and NCDOT projects.

Quality Control/Quality Assurance:

This individual is responsible for developing, implementing, and monitoring of Quality Control/Quality Assurance programs for a variety of construction materials such as Aggregates, Concrete Masonry Units, and HDPE Pipe. Participation in the development of the Liquid Asphalt QC/QA Program and the ongoing development of the Cement and Concrete QC/QA Programs. Development and ongoing monitoring and administration of the Unit's in-house Quality Management System that incorporates the four regional laboratories, satellite laboratory, and the central laboratory to ensure that all laboratories consistently meet the same standards and that the tests results are interchangeable between facilities. Performs Statistical Analysis of sample data (both in-house and Producer generated) to ensure sample validity, determine sampling frequencies, and to assist upper management in the determination of material acceptance.

Technical Support:

This group provides a variety of services including computer system administrator, managing and maintaining computer hardware, LANS, and workstations, coordination of software needs for system users and software upgrades. This group also has assigned an individual to serve as a Computer Trainer/Liaison between the HiCAMS development, Web Application and IT Development Teams. The Liaison is responsible for the interface between the client and the Systems Coordinator. Provides technical support analysis and usage within HiCAMS, Vendor, QAP, and IAA Tracker Applications. Additional services include; security administrator, conducts software and application training, designs and maintains the Material and Tests webpage and portal, develops the Units online forms, documents, and step by step manuals.

Project Material Certification:

This group is responsible for the certification of all Federal Aid and State-funded projects. This certification process will coordinate, assemble, analyze, audit, convert, summarize and research contract documents, estimates and payments to contractors, materials inspections and test reports to ensure that accurate and sufficient documentation is available to verify the acceptable testing and inspection of critical materials and products used to build the highway system. This group determines if there are shortages of acceptable test reports and, if so, contacts the appropriate Resident Engineer so that the shortage may be addressed. Reviews the pay reductions assessed against the contractor for accuracy. If unresolved discrepancies are discovered, this group determines a pay reduction based on established criteria against the contractor and determines the amount of the pay reduction.