

## Who we are:

Transportation is so basic that many of us overlook its overwhelming importance in our daily lives. Practically everything used in our homes, offices, or schools across Tennessee – from furniture to food items to clothing – requires a large and complex transportation network. The Tennessee Department of Transportation provides citizens of Tennessee and travelers with one of the best transportation systems in the country. TDOT is a multimodal agency with responsibilities in building and maintaining roads, aviation, public transit, waterways, railroads, cycling and walking. Our involvement ranges from airport improvements to funding transit buses to planning for river ports. The Department of Transportation has approximately 3,500 employees with four statewide region facilities in Knoxville, Chattanooga, Nashville, and Jackson. TDOT Aeronautics is located near the John C. Tune Airport in Nashville, TN.



### **Materials Control Engineering Specialist 3 & 4**

Materials and Tests Division – Materials and Pavements Section

\$80,784 - \$88,860 annually

#### **Job Overview**

The Materials Control Engineering Specialist 3 & 4 supports Project Teams, Materials and Tests Field Services Teams and Regional Operations by providing expert guidance and recommendations on the manufacturing, construction, design, testing and acceptance of bituminous, aggregate, and concrete materials. This position serves as the liaison between the Project Teams and external producers and suppliers. This position employs Department specifications, policies, technical guidance, and procedures related to construction materials to support the project delivery process.

The Materials Control Engineering Specialist 3 & 4 are responsible for collaborating with both internal and external stakeholders, including Project Teams, TDOT Divisions, Regions, and suppliers/producers to ensure contractual requirements are met.

The Materials Control Engineering Specialist 3 & 4 will apply acquired knowledge to improve TDOT specifications, policies, and procedures that mitigate the Department's risk and increase performance as part of fulfilling TDOT's strategic vision. This position must effectively articulate materials control related concepts through training, mentoring, and collaborating as part of a matrix organization.

#### **Essential Job Responsibilities for the Materials Control Transportation Engineering Specialist 3 and 4 include:**

Serve as a resource for TDOT Operations and Project Teams as part of a matrix organization by applying the Project Delivery Network (PDN) to ensure the manufacturing, construction, design, testing, and acceptance of precast/prestress members, bituminous, aggregate, and concrete materials meet all appropriate specifications and contract requirements; minimize risk by identifying and mitigating potential conflicts during planning, design, and construction phases; meet the timelines established by the project schedule; provide guidance and recommendations for material-related concerns.

Integrate Quality Management into all deliverables, including the review and evaluations of materials incorporated into the Department's transportation infrastructure projects, the development and maintenance of technical documents, policies, procedures, and manuals for the purpose of reducing errors and extending the life of the Department's transportation infrastructure.

Address potential areas of risk with Project Teams by determining materials control strategies that are tailored to the complexity of the project.

Assist in establishing minimum requirements for hot mix asphalt and concrete mix designs, precast and prestressed products, and all component materials.

Assist in managing the approval of producers' Quality Control Plans for precast and prestress concrete products and structural materials, including assisting in establishing the minimum qualifications; assist in maintaining guidelines and procedures for precast product verification.

Assist in the creation, implementation and management of a quality assurance policy for the purpose of ensuring all material suppliers are meeting quality control standards. Administer the Independent Assurance Program.

Assist Project Teams and the Materials & Pavements Section with materials control related construction contract and dispute resolution issues with contractors, producers, and/or suppliers.

Remain current and engaged on material control specifications, designs, manufacturing methods, testing and acceptance methods, and construction trends. Participate in peer exchanges. Conduct materials control research to optimize designs, methodologies, and techniques. Adapt new technologies and best practices that drive TDOT's projects forward.

Provide exceptional customer service to project stakeholders by facilitating the sharing of acquired knowledge with Project Teams, project inspection staff and other project stakeholders providing prompt assistance for materials control concerns, exercising effective listening skills, and communicating effectively. Serve as TDOT's liaison in teaming with industry for pavements.

**Additional Job Responsibilities for the Materials Control Transportation Engineering Specialist 4 include:**

Serve as a mentor and resource to less experienced staff by assisting in the development and presentation of training that addresses material control elements, including governing rules and processes, lessons learned, and emerging technologies. Provide technical expertise and support in matters related to TDOT Guidance, industry standards, state codes, and federal code requirements within the Division and Regions in coordination with the Technical Training Director.

Assist Project Teams by providing data-driven, engineering judgment for complex issues, anticipating and acting on potential issues, meeting associated deadlines and timelines, and providing innovative recommendations for material control issues.

Perform quality assurance reviews of material control related designs and recommendations.

Assist in the development, implementation, and maintenance of applicable materials control related State Specifications, Special Provisions, Circular Letters, and applicable standard guidance.

Participate in constructability reviews.

**Qualifications**

*The Transportation Engineering Specialist 1 and 2 are part of the Graduate Transportation Engineer (GTE) Program.*

**Transportation Engineering Specialist 3:**

- Bachelor's Degree in Engineering, Concrete Industry Management, or Construction Management
- 2 years of demonstrated competency in Materials Engineering/Testing or a Highway Construction related field

**OR**

- Master's Degree in Engineering, Concrete Industry Management, or Construction Management
- 1 year of demonstrated competency in Materials Engineering/Testing or a Highway Construction related field

**Transportation Engineering Specialist 4:**

- Bachelor's Degree in Engineering, Concrete Industry Management, or Construction Management
- 3 years of demonstrated competency in Materials Engineering/Testing or a Highway Construction related field

**OR**

- Master's Degree in Engineering, Concrete Industry Management, or Construction Management
- 2 years of demonstrated competency in Materials Engineering/Testing or a Highway Construction related field

**Ideal Candidate**

This position is a part of the career path series at TDOT. The Materials Control Engineering Specialist 3 & 4 possess exceptional problem-solving and communication skills, which enable them to effectively articulate materials technical concepts to stakeholders. They have an analytical mindset and great attention to detail, which helps them identify inefficiencies and opportunities for improvement that contribute to the success of project delivery strategies. The Materials Control Engineering Specialist 3 & 4 understands that the best results are achieved through collective effort and effective communication.