

## CHIEF MATERIALS TECHNICIAN

### JOB DESCRIPTION

**Classification Responsibilities:** The Chief Materials Technician supervises, plans, and coordinates the activities of the Engineering Division's materials testing laboratory. This class is also responsible for acting as liaison and advisor to Construction Inspectors and other City departments and divisions. This class is also responsible for performing related duties as required.

**Distinguishing Features:** This class is distinguished from the class Senior Materials Technician by having full-supervisory responsibility of the materials testing lab. The incumbent is required to use appropriate safety equipment and to follow safety procedures in performing assignments. This class receives general supervision from the Field Supervising Engineer or the Deputy Engineer over Construction who reviews work through conferences and overall results achieved. This class is FLSA exempt-administrative.

### QUALIFICATIONS

**Employee Values:** All employees of the City of Mesa are expected to uphold and exhibit the City's shared employee values of Knowledge, Respect, and Integrity.

**Minimum Qualifications Required.** Requires graduation from high school or GED and any combination of training, education, and experience equivalent to extensive (5+ years) materials testing experience, including one year of supervisory experience.

**Special Requirements:** Must possess a valid Arizona Driver's License by hire date. Must be National Institute for the Certification of Engineering Technologies (NICET) certified at Level II or equivalent in soils, concrete, asphalt, geotechnical, or highway materials.

**Substance Abuse Testing.** Due to the safety and/or security sensitive nature of this classification, individuals shall be subject to pre-employment or pre-placement alcohol, drug and/or controlled substance testing as outlined in City policy and procedures.

**Preferred/Desirable Qualifications.** Graduation from an accredited college or university with a Bachelor's Degree in Civil Engineering, Construction Management, or related field, and/or registration as a Professional Engineer or Engineer in Training is preferred. NICET certification at Level III or equivalent is highly desirable.

### ESSENTIAL FUNCTIONS

**Communication:** Communicates effectively with inspectors, management, engineers, vendors, public officials, contractors, construction personnel, and subordinate technicians to relay technical data, recommend courses of action, etc. Advises contractors of requirements and suggests corrective actions necessary if results are unsatisfactory. Instructs subordinate personnel on safety, sampling, and testing procedures, and daily assignments. Prepares written analytical reports, test recording forms, memos, letters, etc.

Records test results and prepares necessary paperwork for purchasing laboratory supplies. Completes formal written employee performance appraisals.

**Manual/Physical:** Operates all types of laboratory equipment to test materials for conformance with the American Society of Testing Material (ASTM), state, and local government specifications. Operates a pickup truck (sometimes with trailer attached) requiring a standard Arizona Driver's License to transport materials and inspect field testing. Operates a drill press, core drill, diamond saw, jackhammer, and similar power-driven equipment in performing testing and/or excavation duties. Uses common hand tools, such as hammers, saws, screwdrivers, etc., in collecting samples for testing. Operates and enters data into a personal computer (PC) to prepare reports and organize test results. Performs tests and soil inspections in trenches. Moves 100 pounds (example: objects such as five-gallon buckets of concrete, wheelbarrows full of concrete or aggregate base course, soil, and asphalt) for distances of up to 20 feet or more with the assistance of a cart or power equipment. Excavates and moves soil, asphalt, concrete, and aggregate from one place to another in collecting samples for testing. Sets up and removes traffic cones and flags when working in traffic. Performs physical inventories. Measures distances using a tape measure and calibrated instruments. Draws graphs, maps, and charts in preparing reports and organizing test data. Mixes and uses chemicals (phenolphthalein, for example) to perform various tests. Works with cleaning soaps and oils to clean equipment and work area, and to perform certain tests. Maintains a variety of records. Detects audible backup warning devices and traffic sounds when working in moving traffic and around moving construction equipment and vehicles. Oversees and monitors all field and laboratory physical testing assigned to the materials testing lab. Reviews test results which indicate sample failure. Performs concrete and asphalt plant inspections. Reviews blueprints and drawings to determine the proper testing locations. Distinguishes colors to assist in determining soil type and in performing and reviewing tests that rely on color to ascertain the results, such as presence of calcium, litmus test, etc. Meets scheduling and attendance requirements.

**Mental:** Plans, coordinates, prioritizes, and assigns all field and laboratory physical testing assigned to the materials lab. Supervises and evaluates the work of subordinate technicians. Interprets test results that indicate sample failure. Determines if additional or different testing should be conducted. Determines soil classifications. Prepares the materials testing lab's annual budget proposal for review by the supervisor. Researches and develops new testing methods and materials. Makes recommendations on needed equipment and materials. Calculates test parameters and formulae, compiles data, and prepares descriptive charts and graphs. Computes percentages, ratios, and proportions of materials being tested in compliance with Maricopa Association of Government (MAG), ASTM, and the American Association of State Highway and Transportation Officials (AASHTO) standards. Analyzes test data to make recommendations on corrections needed in order to be in compliance with appropriate regulations, laws, agencies, etc. Comprehends and makes inferences from written material to ensure that lab and field testing is conducted in the proper manner. Learns job-related material through on-the-job training and in classroom settings.

**Knowledge/Skill/Abilities:**

Knowledge of:

the practices, procedures, and methods associated with quality control tests for soils, concrete, and asphalt;

the properties, characteristics, strengths, and weaknesses of materials used in public works construction;  
and  
the practices, procedures, and techniques of employee supervision, evaluation, and training.

Skill in the use of materials testing equipment, such as: a Nuclear Densimeter, penetrometer (PH meter), scales and balances, sieves, gyratory compactor, ignition furnace, core apparatus, speedy moisture kit, and sand cone equipment.

Ability to:

use basic and advanced mathematics involving geometry, fractions, percentages, and ratios;  
coordinate work sequences and schedules with contractors, inspectors, vendors, utilities, supervisory personnel, and other City departments and divisions (example: Traffic and Streets, Utility Construction, etc.);  
serve as the Engineering Division's Nuclear Safety Officer and Chemical Hygiene Safety Officer;  
set up training programs for subordinate technicians; and  
establish and maintain effective working relationships with: engineers, subordinate technicians, public officials, contractors, construction personnel, vendors, inspectors, and management under such stressful conditions and circumstances as conflict of values, deadlines, and short time frames.

The duties listed above are intended only as general illustrations of the various types of work that may be performed. Specific statements of duties not included does not exclude them from the position if the work is similar, related, or a logical assignment to the position. Job descriptions are subject to change by the City as the needs of the City and requirements of the job change.

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EEO-Tech

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INCREMENTS 64-200

PAY GRADE: 48

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