

**COMPETENCY MODEL FOR
MATERIALS TESTING ENGINEER
CLASS CODE 7973**

The following competencies have been identified as those that best separate superior from satisfactory job performance in the class of **MATERIALS TESTING ENGINEER**. (Numbers refers to the order of competencies in the Competency Bank).

- 2. Mathematics
- 3. Judgment and Decision Making
- 6. Attention to Detail
- 8. Safety Focus
- 20. Job Knowledge
- 28. Supervision
- 40. Credibility
- 47. Written Communication
- 48. Shares Knowledge and Information

On the following pages are descriptions of each competency, including a definition, the level of the competency required for the class (*italicized, bolded, and underlined*), examples of behavioral indicators, and satisfactory and superior performance levels.

2. MATHEMATICS – Performs arithmetic or higher-level mathematical computations accurately.

Level of Competency Required by Job:

Level 1: Perform arithmetic computations (add, subtract, multiply, divide, ratios, percentages).

Level 2: **Use algebra (substitute numbers for letters in a formula), geometry (angles, distances, area), and/or descriptive statistics (mean/median/mode, standard deviation, range).**

Level 3: Apply and interpret calculus, inferential statistics (t-tests, correlations, ANOVA, multiple regression) or other very high level mathematics.

Examples of Behavioral Indicators:

- Quickly and accurately performs arithmetic computations.
- Appropriately selects and applies formulas for stated purpose.
- Correctly identifies an appropriate analysis for a specific purpose and selects the appropriate computer program for computation.
- Accurately interprets and presents results of mathematical/statistical computations.

Performance Levels:

Satisfactory

Knows mathematical requirements of the job and performs them correctly. Verifies work to ensure accuracy.

Superior

Identifies additional opportunities for the application of mathematics in work. Answers questions/trains others to assist them in their use of mathematics.

3. JUDGMENT AND DECISION MAKING – Accurately assesses situations, seeks new information if necessary, and applies all available information to reach sound conclusions/formulate effective response.

Level of Competency Required by Job:

Level 1: Training and guidelines needed to respond to immediate situations within very specific function are provided (or supervisor available to assist).

Level 2: General information and guidance to assist in responding to a variety of situations across a range of circumstances are provided.

Level 3: **Little guidance available for responding to a wide range of complex situations with far-reaching and/or enduring consequences.**

Examples of Behavioral Indicators:

- Effectively responds to atypical situations.
- Asks questions or otherwise obtains additional relevant information to make a decision.
- Formulates a decision and necessary actions based on available facts.
- Correctly infers appropriate response based on information provided and existing policies, personal experience, and/or consultation with others.
- Discusses conclusions/possible responses with others before taking action as necessary.
- Considers impact of decisions on all affected parties.

Performance Levels:

Satisfactory

Correctly assesses routine and unusual situations and reaches appropriate conclusions for actions needed. Obtains additional information and/or consults with others as necessary.

Superior

Evaluates new situations accurately to establish an appropriate response or plan of action. Recognizes the impact on all affected parties, as well as the possible ramifications and/or repercussions of setting a precedent.

6. ATTENTION TO DETAIL – Extremely careful in addressing all aspects of each work assignment in order to produce “completed staff work” and/or avoid any negative outcomes.

Level of Competency Required by Job:

Level 1: Ensure all aspects of work assignment are completed as directed.

Level 2: Verify that each aspect of work assignment is properly completed; make logical inference regarding additional activities that may need to be performed to produce “completed staff work.”

Level 3: ***Include evaluation of final work/work product in its accomplishment; make adjustments as possible to improve.***

Examples of Behavioral Indicators:

- Carefully checks all aspects of work for completion and accuracy before submitting.
- Identifies errors (for example, typo’s, computations, measurements, application of laws/rules/policies) and corrects them prior to submitting.
- Cross-checks work against available resources.
- Sets up a means of checks and balances to ensure work accuracy.
- Considers changes in final work product to ensure usability by recipient.
- Completes all revisions upon request.

Performance Levels:

Satisfactory

Ensures that each task accomplished represents “completed staff work.” No remaining details/ inconsistencies for others to address.

Superior

All aspects of each task completed are verified to be correct. Identifies any foreseeable consequences of work that may need to be addressed and does so.

8. SAFETY FOCUS – Performs work in a way that minimizes risk of injury to self or others.

Level of Competency Required by Job:

Level 1: Maintain awareness of unsafe conditions and actions to avoid injury.

Level 2: Follow safety rules/procedures; avoid known hazards in the work environment.

Level 3: **Carefully follow safety rules and procedures and consistently use all necessary safety equipment.**

Examples of Behavioral Indicators:

- Wears seat belt.
- Ensures safe physical work environment by taking actions such as eliminating unstable stacks of materials, closing drawers so filing cabinets will not tip over, and keeping pathways clear of tripping hazards.
- Reviews safety procedures before beginning each job with known hazards.
- Follows safety procedures while performing work even when it takes more time.
- Uses safety equipment such as goggles, gloves, and earplugs as required or warranted.
- Frequently checks safety equipment for proper condition and operation.

Performance Levels:

Satisfactory

Maintains awareness of personal safety to avoid injury or property damage during all work activities.

Superior

“Safety first.” Places avoidance of injury or property damage above all other job requirements. Mentions the need to follow safe work practices to co-workers. Actively seeks ways to avoid injury.

20. JOB KNOWLEDGE – Knows information required to perform a specific job. Includes both widely available courses of study (for example, chemistry, human resources management, graphic arts) and City-specific information (parking regulation and ticketing practices; purchasing procedures; provisions of the City Charter).

Level of Competency Required by Job:

Level 1: Knowledge is concrete, factual, and/or procedural and may be defined by the organization. Situations in which it is applied are quite consistent.

Level 2: Knowledge is substantive and may be defined by an external trade, field, or profession. Situations in which it is applied vary and, as such, require breadth and depth of understanding.

Level 3: **Knowledge is abstract, conceptual, and/or complex and may be supported by a well-defined academic discipline or authoritative sources (e.g., laws, ordinances, government guidelines/regulations/codes). Situations in which it is applied may vary greatly or be novel.**

Examples of Behavioral Indicators:

- Performs work correctly/avoids technical (job content related) errors.
- Answers technical questions about work accurately.
- Asks few technical questions about the performance of routine work activities.
- Offers advice (“coaching”) to new employees regarding their work.
- Develops training programs for other employees.
- Sought out as a source of information by others.

Performance Levels:

Satisfactory

Sufficient job knowledge to perform work correctly independently. Answers technical questions about work correctly.

Superior

Expertise in technical job information sufficient to serve as a resource to others. May develop training manuals/ programs and/or give internal and/or external presentations related to work.

**Materials Testing Engineer (7973)
Job Knowledge Areas**

1. Knowledge of chemistry, especially the procedures relevant to quantitative and qualitative analysis; appropriate knowledge of environmental rules as they relate to the safety of employees and the public.
2. Knowledge of physics, especially with regard to the strength of materials and the laws of mechanics.
3. Knowledge of standards and standard testing methods of the American Society for Testing and Materials.
4. Knowledge of types and characteristics of commonly used construction and maintenance materials.
5. Knowledge of standard sources of information pertaining to materials testing.
6. Knowledge of laboratory testing methods, apparatus, and techniques.

28. SUPERVISION – Ability to assume direct responsibility for all aspects of the performance of a work group, which requires knowledge and/or

ability in the areas of:

- Planning and goal setting
- Creating a safe and positive work environment
- Establishing standards and training employees
- Motivating employees and teambuilding
- Performance Management (assigning, monitoring, facilitating, reviewing and evaluating work, and providing feedback)
- Supporting and developing employees through delegation and participation
- Taking disciplinary action including progressive discipline
- Provisions of employees' MOU's and handling grievances
- Legal requirements including EEO, ADA, FLSA, FMLA, and Workers' Compensation provisions
- Civil Service Commission Rules and Policies related to the management of employees
- Administrative Code provisions related to the management of employees
- Budget processes sufficient to request and justify expenditures in a correct and timely manner

Level of Competency Required by Job:

Level 1: Supervises small workgroup of employees performing the same or highly related work.

Level 2: Supervises a larger workgroup of employees performing various types of work.

Level 3: *Supervises employees including provision of coaching and advice to subordinate supervisors.*****

Examples of Behavioral Indicators:

- Plans, assigns, and monitors work progress.
- Trains employees to do work.
- Evaluates work and gives positive and negative feedback.
- Displays knowledge of legal requirements including applicable Federal and State laws, Administrative Code provisions, Civil Service Commission Rules and Policies, and MOU provisions.

Performance Levels:

Superior

Satisfactory

Proficiency in supervision sufficient to supervise a workgroup in terms of task orientation, interpersonal concerns, and personnel administration.

Proficiency in supervision sufficient to serve as a resource to others and/or represent department position in a public forum

40. CREDIBILITY – Is truthful and sincere; objectively and clearly provides all pertinent information rather than being vague, omitting negative information or only stating what listeners “want to hear.”

Level of Competency Required by Job:

Level 1: Freely and openly share accurate job-related information with co-workers.

Level 2: Provide complete, accurate information to other City employees and members of the public.

Level 3: *Represent department to the Mayors’ Office, City Council, City Commissions, and/or department heads, and/or to external organizations, professional associations, and/or the media.*

Examples of Behavioral Indicators:

- Admits mistakes.
- Information provided is consistent (not contradictory or stating different things to different people).
- Answers questions directly and thoroughly.
- Shares credit for achievements.
- Acts in the best interest of the organization, not self-interest.

Performance Levels:

Satisfactory

“Tells the complete story” from the onset. Is forthcoming with full information when questioned. Statements are consistent. Readily admits mistakes and gives credit to others.

Superior

Information provided is complete and accurate, and includes any negative information or information contrary to self-interest. Does not attempt to be vague or put a “spin” on negative information to make it appear more positive.

47. WRITTEN COMMUNICATION – Communicates effectively in writing.

Level of Competency Required by Job:

Level 1: Write notes/e-mails. Completes forms with some open-ended responses (sentences).

Level 2: Write letters, articles/reports, and/or detailed descriptions of activities/occurrences.

Level 3: Write lengthy reports, instruction manuals, in-depth analyses/ reviews of complex issues and/or articles for publication. Reviews the written work of others.

Examples of Behavioral Indicators:

- Writing includes the necessary information to convey the intended message.
- Sufficiently few errors in spelling, punctuation, grammar to not interfere with the intended message or distract the reader.
- Little editing or re-writing needed to produce a final product.
- Composes materials efficiently.
- Information is presented in a well organized manner.
- Tone and degree of formality are appropriate to the purpose and audience.

Performance Levels:

Satisfactory

Writes material that clearly communicates the necessary information; needs little editing.

Superior

Precisely uses words and organizes information in a way that enhances presentation of the message. Virtually no editing needed.

48. SHARES KNOWLEDGE AND INFORMATION – Conveys all information relevant to each involved party in a thorough and timely manner.

Level of Competency Required by Job:

Level 1: Provide job-related information as it becomes available to others who are likely to need it or to whom it might be helpful.

Level 2: Keep all involved parties informed of work/project progress and other new information. Tailors content, level of detail, and timing of information provided to the perspective of each recipient

Level 3: **Recognize different needs for different information and provide all affected parties with a description of the “big picture” as well as the breadth and detail of information relevant to their perspective.**

Examples of Behavioral Indicators:

- Provides thorough explanations with all relevant details.
- Uses multiple means of communicating (e.g., e-mail, telephone, meetings).
- Provides status reports of work/project progress to all involved parties.
- Informs others of changes at the earliest feasible time.
- Uses multiple addressees and “copies” others so all parties see exactly the same information and know who already has been informed.
- Draws from job knowledge and work experience to provide thorough descriptions and explanations.

Performance Levels:

Satisfactory

Readily communicates new, job-related information to all employees to whom it is relevant. Provides a level of detail and explanation appropriate to the recipient.

Superior

Ensures that all involved parties are provided the maximum amount of information feasible in as timely a manner as possible to facilitate work/project status. Shares job knowledge and experience to serve as a mentor or coach to others.