

**COMPETENCY MODEL FOR
ENGINEER OF FIRE DEPARTMENT
CLASS CODE 2131**

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

- 2. Mathematics
- 3. Judgment and Decision-Making
- 7. Self-Management
- 18. Developmental Orientation
- 20. Job Knowledge
- 23. Equipment Operation
- 35. Teamwork
- 53. Leadership

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.

7. SELF MANAGEMENT – Organizes and plans for task accomplishment; manages time and works diligently to complete assigned work/fulfill responsibilities.

Level of Competency Required by Job:

Level 1: Order tasks for efficient performance; maintain awareness of time allotted and deadlines in order to ensure they are met.

Level 2: Plan and perform work in a way that maximizes efficient performance; establish and adjust priorities to ensure timely completion of most critical assignments.

Level 3: Allot time to responsibilities proportional to their prominence, priority, and impact.

Examples of Behavioral Indicators:

- Performs only work activities during work hours.
- Alters means of performing work when original approach proves to waste time.
- Keeps a “to do” list (with indication of priority and deadlines, if necessary).
- Requests assistance as necessary when it becomes clear that work will not be completed on time.
- Demonstrates a record of progress with respect to all assignments/responsibilities.
- Uses optimal means of communication for efficiency and effectiveness.

Performance Levels:

Satisfactory

Conducts self while at work in a manner that ensures work will be completed as scheduled, or provides explanation or secures assistance or adjustment of schedule if it will not be.

Superior

Seeks efficiencies in doing work to maximize productivity. Plans work carefully and follows the plan or makes adjustments if it is disrupted. Maintains personal responsibility for all work accomplishment.

18. DEVELOPMENTAL ORIENTATION – Seeks out education, training and/or experience to enhance current job performance and/or promotion potential.

Level of Competency Required by Job:

Level 1: Continually seek developmental opportunities to improve performance of current job.

Level 2: Pursue developmental opportunities to expand performance of current job and/or improve the probability of promotion.

Level 3: Participate in sufficient breadth and depth of developmental activities to acquire expertise in specific areas.

Examples of Behavioral Indicators:

- Identifies appropriate training opportunities.
- Requests and justifies need for training.
- Reads job-related material beyond that required for the job.
- Specifies promotional goals in order to prepare properly.
- Completes degree or certification program.
- Successfully completes college courses related to the job or promotional objective.
- Seeks assignments to develop specific competencies.

Performance Levels:

Satisfactory

Willingly participates in training; learns and applies new information. Recognizes the relationship of personal development to promotion.

Superior

Actively pursues training opportunities and other developmental activities at work and on own time. Strives for mastery of current assignment and identifies promotional options and associated developmental needs.

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.

Job Knowledge Areas

USE AND CARE OF TOOLS, EQUIPMENT, AND FACILITIES

1. Knowledge of how to clean and inspect the apparatus as well as the various tools, fittings, and equipment carried on the apparatus in order to keep the apparatus clean and to be aware of any repairs or maintenance that are needed to maintain the apparatus at alert status.
2. Knowledge of how to clean and inspect the station facilities, particularly the apparatus floor and station equipment, such as hand tools, in order to maintain the station in top readiness status.
3. Knowledge of all of the various types of equipment carried on the apparatus, the location for each type, and the purpose of each so the needed equipment can be accessed quickly when needed, used properly during an emergency, repaired if it is broken or replaced if necessary.
4. Knowledge of the readiness standards established by the LAFD for the apparatus and the equipment carried on the apparatus such as emergency medical supplies (e.g., oxygen bottles), hoses, air bottles, and dry chemical fire extinguishers.

CALCULATIONS TO DETERMINE PRESSURE

5. Knowledge of hydraulics theory sufficient to make the calculations necessary to determine the required pressure needed to move water through a given size of hose over a given distance, and up or down a given grade, and into firefighting appliances including nozzles or fire protection systems.
6. Knowledge of how to mentally perform hydraulic calculations in order to arrive at an accurate estimate of the required pressure needed to pump water quickly during an emergency situation, to understand the workings of the pumps on a triple, and to troubleshoot any problems.

PUMPING OPERATIONS

7. Knowledge of how to use a four-way valve and pumping operations.
8. Knowledge of how to use a siphon ejector operation or drafting operation to draft water from a lake, ocean, or swimming pool when a hydrant is not available.
9. Knowledge of how to conduct a relay of a series of fire apparatus or a water shuttle operation when the source of water is far away from the scene of the emergency in order to deliver water to the scene of the emergency.

EMERGENCY RESPONSE PROCEDURES

10. Knowledge of the procedures developed by LAFD to handle various types of emergencies (e.g., fire, auto accident, hazardous waste spill, EMS incident) depending on the location of the emergency (e.g., house, high-rise office building, freeway, or brush covered mountain area), size of the emergency (e.g., entire building or area, or just a portion engulfed in flames), and the source of water to supply the fire apparatus (e.g., fire hydrant, ocean, relay) sufficient to act competently and quickly as either an Engineer or Firefighter.
11. Knowledge of how to use a wide variety of firefighting rescue and EMS tools and equipment such as nozzles, hoses, axes, saws, ladders etc., in order to be able to act as a fully trained firefighter.

MISCELLANEOUS

12. Knowledge of the components of a triple combination pumping apparatus such as the valves, engine, cooling system, and pumping system sufficient to fill out forms and logs such as the Bi-Monthly Preventive Maintenance Record, Hydrant Record, Repair Record, and apparatus log books in order to keep a written record of the status and procedures performed on the apparatus and in the station's first-in district and hydrant district.
13. Knowledge of the specifications developed by the LAFD governing the operation of fire hydrants sufficient to determine the condition of a fire hydrant after it has been tested for availability in the station's hydrant district.
14. Knowledge of how to read maps and diagrams such as LAFD maps in order to determine the location of major structures, landmarks, and hydrants and the most appropriate route to travel to an emergency in the first-in or greater alarm districts by considering streets, traffic, and the tactics and strategy of combating fire and medical emergencies.
15. Knowledge of the various types of equipment carried on an apparatus, specifics unique to each model of apparatus operated by the LAFD, and the station's first-in and greater alarm districts in order to be able to immediately recall the necessary information when needed to respond to an emergency.
16. Knowledge of the procedures necessary to be an Engineer sufficient to clean, maintain, and repair the triple, equipment, and station facilities, test the district's fire hydrants, and conduct district fire inspections.
17. Knowledge of how to direct traffic such as the use of hand signals, traffic cones and tape, and flare patterns, in order to direct traffic away from or around the scene of an emergency.
18. Knowledge of technical material, such as the Manual of Operations, LAFD Rules and Regulations, department bulletins, training bulletins, and the

Apparatus Operator's Training Manual (AOTM), in order to be aware of department policy and procedures and apparatus operations.

19. Knowledge of the Fire Code pertinent to the Engineer position sufficient to conduct fire prevention inspections and advise citizens on Code violations and how to correct them.

23. EQUIPMENT OPERATION – Operates specialized equipment in performance of job duties.

Level of Competency Required by Job:

Level 1: Operate equipment based on on-the-job training.

Level 2: Operate equipment based on attendance at a training program and practice.

Level 3: Operate equipment for which in-depth, complex training was required and which may require certification.

Examples of Behavioral Indicators:

- Operates equipment proficiently.
- Operates equipment with strict adherence to safety procedures.
- Understands the operation of equipment used on the job and correctly answers questions about it.
- Willingly participates in any training necessary to maintain up-to-date knowledge of equipment operation.

Performance Levels:

Satisfactory

Operates equipment safely and with a high degree of proficiency.

Superior

Operates equipment with extreme proficiency and correctly answers questions about its operation. Trains and/or coaches others in the operation of equipment.

Equipment Operation Areas

KNOWLEDGE OF APPARATUS

1. General knowledge of the components of a triple combination pumping apparatus, crash truck, and foam tenders, such as the valves, engine, cooling system, and pumping system, sufficient to understand how everything works together to pump water at the required pressure.
2. Knowledge of the components of a triple combination pumping apparatus such as the valves, engine, cooling system, and pumping system sufficient to conduct minor maintenance on the apparatus such as checking and filling (as needed) all fluid levels pertinent to apparatus, crankcase oil, radiator coolant, and power steering fluid reservoirs, charging batteries, and checking tire pressure.
3. Knowledge of the components of a triple combination pumping apparatus such as the valves, engine, cooling system, and pumping system sufficient to inspect the apparatus, while it is operating, to see if it is functioning smoothly such that the pump packing is not leaking excessively, the engine is not laboring, and the emergency lights are all on.
4. Knowledge of the components of a triple combination pumping apparatus such as the valves, engine, cooling system, and pumping system sufficient to use hand tools such as screwdrivers and wrenches in order to tighten loosened bolts and screws, to reattach loose wires, and to replace blown fuses and light bulbs.
5. Ability to drive very heavy vehicles such as triple combination apparatus and crash trucks under varying weather conditions, road surfaces, and grades sufficient to travel quickly and safely, using defensive driving techniques, to the scene of an emergency.
6. Knowledge of how to read and interpret gauges and dials on a triple combination apparatus such as the compound, oil pressure, and engine temperature gauges in order to monitor the operation of the pumper including the amount of pressure being generated and the sufficiency of water being pumped.
7. Knowledge of the various models of fire apparatus (i.e., Seagrave, Pierce, and KME) and combination pumping apparatus that is in service with the LAFD in order to be able to operate any model which may be assigned to the station.
8. Ability to determine the placement and spotting of the apparatus where it will be in the most advantageous position to assist in resolving the emergency, such as pumping water to the fire, protecting the Firefighters from injury and the apparatus from damage, and allowing other firefighting units through to

the scene, by quickly synthesizing information regarding the location, size, type of emergency being responded to, and the source of water, if needed.

USE AND CARE OF TOOLS AND EQUIPMENT

9. Ability to use necessary tool or fitting in order to connect hoses to a hydrant, triple combination apparatus, nozzles, or to each other in order to make a tight fit and preclude leaks in the connections.
10. Ability to properly use air compressors in order to recharge fire extinguishers.

35. TEAMWORK – Interacts effectively with others to achieve mutual objectives; readily offers assistance to others to facilitate their goal accomplishment.

Level of Competency Required by Job:

Level 1: Work effectively as a member of a work unit or project team. Readily offer assistance to others when they have too much work or have too little.

Level 2: Work effectively as a team member in which different people have different roles/responsibilities and perspectives. Identify points for collaboration with co-workers; readily offer and request assistance.

Level 3: Work effectively as a part of an interdependent team (your work gets done only if the work of the whole team is done; evaluation of team performance is more relevant than individual performance).

Examples of Behavioral Indicators:

- Discusses work-related matters with co-workers.
- Offers and requests assistance readily.
- Offers and is receptive to suggestions.
- Identifies problems with workflow that will prevent team from accomplishing its goals.
- Provides constructive criticism and feedback to team members to improve overall functioning of team.
- Assigns credit to team for accomplishments.

Performance Levels:

Satisfactory

Cooperates with co-workers and fulfills responsibilities as a member of a project team. Maintains a focus on common objectives and offers and requests assistance readily.

Superior

Sees the team as a whole; acknowledges that performance of the team is what in reality is evaluated by others. If anyone fails, everyone on the team fails.

53. LEADERSHIP – Influences others toward goal accomplishment.

Level of Competency Required by Job:

Level 1: Assume responsibility for operations or a situation when necessary. Direct the actions of others or otherwise ensure required actions are taken. Remain responsible until relieved or situation is resolved.

Level 2: Motivate others to continual activity focused on goal accomplishment. Provide clear objectives and articulate individual activities necessary to achieve them; ensure resources necessary to do so are available. Monitor work progress and provide feedback; assess results.

Level 3: Articulate a vision, convey it to others, and assign responsibilities (or assure they are assigned) for achieving it. Monitor progress, make adjustments as necessary, and evaluate results.

Examples of Behavioral Indicators:

- Evaluates circumstances, determining what needs to be done, and ensuring individual responsibility for performing specific actions is assigned.
- Follows-up to ensure that specific actions have been taken and overall objective has been accomplished.
- Clearly communicates objectives and responsibility/individual actions necessary to achieve them.
- Monitors work in progress, provides feedback to those involved, and makes adjustments to work plans/processes to ensure goal attainment.
- Evaluates completed work for quality, thoroughness, and effectiveness to determine whether re-work or additional work is required to meet intended objectives and to provide learning for future assignments

Performance Levels:

Satisfactory

Assumes responsibility for work of others when required or necessary. Ensures actions taken to achieve objectives, and evaluates results to determine any follow-up needed.

Superior

Articulates vision/states clear objectives and assigns responsibility/motivates others toward achievement. Monitors progress; gives feedback; evaluates results; ensures follow-up.

