

**COMPETENCY MODEL FOR
SHEET METAL WORKER
CLASS CODE 3775**

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

1. Reading Comprehension
2. Mathematics
8. Safety Focus
10. Physical Capability
20. Job Knowledge
23. Equipment Operation
33. Interpersonal Skills
44. Follow Written Directions

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.

1. READING COMPREHENSION – Comprehends and correctly applies information presented in written form. Makes correct inferences; draws accurate conclusions.

Level of Competency Required by Job:

Level 1: Concrete, specific job-related information (work orders; instructions; material/equipment labels)

Level 2: General information related to field of work and assignments; (articles in trade publications; technical/instructional manuals; memos; letters; e-mails; reports)

Level 3: Abstract/complex information (highly technical articles/ reports in specialized area; legal or other regulatory material)

Examples of Behavioral Indicators:

- Follows written instructions correctly.
- Learns information presented in writing.
- Identifies relevant written information.
- Interprets written legal regulatory material accurately.

Performance Levels:

Satisfactory

Reads instructions correctly. Learns from manual and other printed material.

Superior

Learns from manual and may answer others' questions. Explains information presented in written form to others.

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.

Mathematics Areas

1. Knowledge of geometry, including calculations of area, volume, circumference, diameter and distance, sufficient to take field measurements and prepare working drawings and sketches.
2. Knowledge of arithmetic, including the addition, subtraction, multiplication and division of whole numbers, fractions, and decimals, sufficient to take field measurements, prepare working drawings and sketches, and calculate bending allowances of common metals.

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.

Safety Focus Area

1. Knowledge of safety practices and procedures as required by the California Division of Occupational Safety and Health Administration (Cal/OSHA) when performing sheet metal work, such as soldering, riveting, spot welding, crimping, deburring, beading, bending, and gas/arc welding, including the safe operation of power and hand tools, equipment, and machinery, and the proper use of ladders and scaffolds, sufficient to ensure work is performed in compliance with applicable safety regulations and requirements.

10. PHYSICAL CAPABILITY – Strength, endurance, flexibility, and/or coordination.

Level of Competency Required by Job:

Level 1: Sitting and/or standing for extended periods of time.

Level 2: Awkward body position and/or precise motions required; and/or repeated lifting, carrying, and/or manipulation of objects; and/or walking for extended periods of time.

Level 3: Continuous or extreme exertion of physical effort.

Examples of Behavioral Indicators:

- Sits and may occasionally stand or walk for entire workday (except breaks).
- Walks for the duration of the workday.
- Repetitive motion required to perform task.
- Repeatedly lifts and carries heavy objects.
- Exerts maximal effort for extended periods of time.

Performance Levels:

Satisfactory

Performs tasks requiring physical capability satisfactorily and without undue physical stress or harm.

Superior

Performs tasks requiring physical capability correctly with relative ease. May be asked to perform the most physically demanding tasks or be sought by co-workers for assistance.

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

1. Knowledge of equipment, machinery, and tools used in sheet metal work, such as power and manually-operated brakes, shears, rolls, punches, drills, and bending machines, sufficient to ensure such equipment, machinery, and tools are safe prior to use in the fabrication, assembly, installation, and/or repair of various items made from sheet metal.
2. Knowledge of the practices and procedures used in pattern development and drafting, including triangulation, radial line development, parallel line development, and mensuration, as applied to the layout of a variety of items made from sheet metal sufficient to fabricate products, such as duct fittings, range hoods, and downspouts.
3. Knowledge of the methods and procedures used to install heating, cooling and ventilating systems, including the function and purpose of duct systems, sufficient to ensure proper fabrication and/or installation of air conditioning and heating ducts and proper air distribution in enclosed quarters.
4. Knowledge of the practices and procedures used to rivet, solder, spot weld, gas weld, and arc weld, sufficient to fabricate, assemble, install and/or repair a variety of items made from sheet steel, galvanized iron, stainless steel, copper, aluminum, and other metals.
5. Knowledge of the application and interpretation of blueprints and drawings as it relates to sheet metal work sufficient to determine the proper methods to use in the fabrication, assembly, installation, and/or repair of various items made from metals, such as air conditioning and ventilating ducts, lockers, cabinets, shelves, table tops, sinks, range hoods, rain gutters, downspouts, flashings, and fluid tanks.
6. Knowledge of various types of seams, such as Pittsburgh, snap lock, pipe lock, and groove seams, including the practices and procedures used to form them during the fabrication of a variety of items made from metals, such as duct work, ventilation ducts, and flashings, sufficient to join two pieces of metal.

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 Area

1. Operation of power and manual equipment, machinery, and tools used to perform sheet metal related work, including power brakes, shears, rolls, punches and drills, sufficient to fabricate, assemble, install, and/or repair various items made from metal.

33. INTERPERSONAL SKILLS – Interacts effectively and courteously with others.

Level of Competency Required by Job:

Level 1: Interact with members of the workgroup, supervision, and/or the public in a cordial, service-oriented manner.

Level 2: Interact across department lines and with appointed City officials, and/or members of the public, at times under adversarial circumstances, in a cordial, respectful manner.

Level 3: Interact with appointed and elected City officials, department heads, representatives of external organizations, and/or the media in a cordial, effective manner.

Examples of Behavioral Indicators:

- Works well with others toward mutual objectives.
- Does not arouse hostility in others.
- “Disagrees without being disagreeable.”
- Elicits acceptance/cooperation from others.
- Affords all individuals respect, regardless of their role or status.
- Effectively addresses concerns of politicians or others who may have their “own agenda.”

Performance Levels:

Satisfactory

Behaves in a courteous, respectful, cooperative manner toward co-workers, other City employees, and members of the public.

Superior

Facilitates positive interpersonal relations within/among workgroups and toward members of the public. Adept at finding similarities and grounds for cooperation/mutual benefit.

44. FOLLOW WRITTEN DIRECTIONS – Performs work accurately as directed in writing.

Level of Competency Required by Job:

Level 1: *Perform tasks assigned in writing.*

Level 2: Perform work after reading instructional manual.

Level 3: Perform work after completion of training modules or programs presented in writing.

Examples of Behavioral Indicators:

- Correctly completes work assigned in writing.
- Answers questions and/or explains work to others who received the same instructions.
- Learns and applies information presented in writing (instruction manual; training program).
- Correctly infers details of work to be performed that were unclear or omitted as presented in writing.

Performance Levels:

Satisfactory

Correctly performs work assigned or for which training was provided in writing.

Superior

Understands instructions and training materials presented in writing to the extent that is able to answer questions or explain to others. Correctly infers unclear or omitted details as presented in writing.