



## **HVAC/R Technician**

**Classified Range: 42**

Board Approved: 12/11/20

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*Class specifications are intended to present a descriptive list of the range of duties performed by employees in the class. Specifications are **not** intended to reflect all duties performed within the job; however, any additional duties will be reasonably related to this class.*

### **SUMMARY DESCRIPTION**

Performs a variety of skilled mechanical maintenance duties in the construction, diagnosis, repair, installation, and alteration of District heating, ventilation, air conditioning and refrigeration systems, and related equipment and facilities.

### **SUPERVISION RECEIVED AND EXERCISED**

Receives limited supervision from appropriate supervisor; routinely analyzes and resolves problems; refers only unusual decisions to supervisor. May provide technical and functional direction to assigned student workers.

### **REPRESENTATIVE DUTIES**

*The following duties are typical for this classification.*

1. Performs repairs, routine servicing, and operations of HVAC systems to assure efficient operation; operates, programs, and maintains the energy management system in order to control room temperatures for District facilities.
2. Conducts regular preventive maintenance inspections, services, and repairs of refrigeration units, isolated heating and ventilating, and air-conditioning units, fan-coil units, including gas, electric and pneumatic operated heating and air conditioning equipment and systems; performs necessary adjustments or repairs; services and repairs evaporative coolers.
3. Programs, repairs, maintains, and operates HVAC control systems, HVAC system components and/or equipment, Variable Air Volume (VAV) systems and related modules; utilizes desk top and hand-held computer to diagnose and program systems.
4. Diagnoses, programs, operates, schedules, monitors, and adjusts the Campus Building Automation Systems (BAS) for HVAC systems, energy management systems (EMS), and other building or asset systems as needed.
5. Performs skilled electrical maintenance work in the connection, repair, installation, and alteration of HVAC equipment, components, timers, motors, and wiring systems as needed.
6. Troubleshoots gas and electric heating systems; installs natural gas lines and inspects for leaks; replaces heater circulation pumps motors in boiler heating systems, and associated components, which do not require a certification.
7. Inspects, repairs, modifies, and installs HVAC equipment including refrigeration and air conditioning compressors, receivers, condensers, forced air units, pumps, automatic and hand valves, expansion valves, and capillary tubes; performs minor troubleshooting and repairs to ancillary chiller and cooling tower equipment and associated components, which do not require a certification.
8. Tests and examines chilled water and water tower operations and boiler as necessary, observing meter and pressure gauges.
9. Installs, inspects, and repairs or replaces defective parts in HVAC units and equipment and their controls.



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10. Lubricates and packs heating, ventilation, refrigeration, and air conditioning motors, pumps, fans, bearings, and other equipment.
11. Installs and calibrates systems; installs copper tubing and repairs pipes and tubing as necessary; tests joints and insulates pipes of refrigeration and air conditioning systems.
12. Operates a variety of hand and power tools, solder/brazing equipment, vacuum pump, freon recovery equipment, and other test and repair equipment utilized in the trade; operates a motor vehicle; maintains equipment in effective and safe working condition.
13. Diagnoses HVAC mechanical and electrical problems; repairs or replaces defective or malfunctioning parts in units, equipment, and controls; installs, rebuilds, replaces, or repairs fans, motors, thermostats, fuses, filters, bearings, valves, controls, gaskets, and other equipment as necessary.
14. Researches and evaluates products for best sources; recommends purchase of selected parts, materials, and equipment; assists in labor and material estimations for projects; prepares and maintains work orders, records, and reports related to work performed.
15. May perform general unskilled and semi-skilled maintenance work; may assist in other trades as necessary.
16. Performs other duties related to the primary job duties.

## **QUALIFICATIONS**

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*The following generally describes the knowledge and ability required to enter the job and/or be learned within a short period of time in order to successfully perform the assigned duties.*

### **Knowledge of:**

- Methods, practices, equipment and tools used in the repair and maintenance of air conditioning, heating and ventilation and refrigeration systems.
- Methods and techniques of troubleshooting and diagnosing of HVAC malfunctions.
- HVAC system design, equipment capabilities and requirements.
- Electronic pneumatic and mechanical principles as applied to the maintenance and repair of heating, ventilation and air conditioning systems.
- Proper methods, materials, tools terminology and equipment used in the HVAC and refrigeration trades.
- Applicable codes, ordinances and regulations of State and local authorities pertaining to HVAC, refrigeration and boilers.
- Air compressors and pneumatic controls.
- Cooling tower and boiler water treatment.
- Basic welding and soldering techniques.
- Proper methods of storing equipment, materials and supplies.
- Office procedures, methods, and equipment including computers and applicable software applications.
- Methods and techniques of preparing and interpreting drawings, diagrams, schematics and blueprints.



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- Principles and procedures of record keeping.
- Occupational hazards and standard safety practices.
- Pertinent federal, state, and local codes, laws and regulations.

### **Ability to:**

- Read and interpret mechanical drawings, schematics, blueprints and sketches.
- Operate a variety of tools and equipment used in HVAC maintenance and repair work.
- Operate office equipment including computers and supporting software applications.
- Meet deadlines.
- Observe legal and defensive driving practices.
- Ensure adherence to safe work practices and procedures.
- Work independently with little direction.
- Understand and follow oral and written instructions.
- Plan and organize work.
- Maintain accurate records and prepare reports.
- Communicate clearly and concisely, both orally and in writing.
- Establish and maintain effective working relationships with those contacted in the course of work.

**Education and Experience Guidelines** – *Any combination of education and experience that would likely provide the required knowledge and abilities is qualifying. A typical way to obtain the knowledge and abilities would be:*

#### **Education/Training:**

- Equivalent to completion of high school supplemented by specialized training in heating, ventilation, refrigeration, and air conditioning repair and maintenance.

#### **Experience:**

- Three (3) years of journey-level operation, maintenance, and repair experience in the HVAC and refrigeration trade.

#### **License or Certificate:**

- Possession of a valid driver's license.
- Possession of or ability to obtain a valid forklift certificate.
- Possession of a valid EPA Retrieval and Reclamation Certification issued by authorized agency.

#### **Desired Education/Experience:**

- Possession of or ability to obtain Variable Air Volume (VAV) systems certification



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### **PHYSICAL DEMANDS AND WORKING ENVIRONMENT**

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*The conditions herein are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential job functions.*

**Environment:** Work is performed primarily in indoor and outdoor environments; travel from site to site; exposure to noise, dust, grease, smoke, fumes, noxious odors, gases, electrical energy, and all types of weather and temperature conditions; work and/or walk on various types of surfaces including slippery or uneven surfaces and rough terrain; work at heights on scaffolding and ladders; exposure to electrical energy.

**Physical:** Primary functions require sufficient physical ability and mobility to walk, stand, and sit for prolonged periods of time; frequently stoop, bend, kneel, crouch, crawl, climb, reach, and twist, to frequently push, pull, lift, and/or carry moderate to heavy amounts of weight up to 50 pounds; to occasionally push, pull, lift, and/or carry heavier amounts of weight with assistance; requires a sense of touch, finger dexterity, gripping with fingers and hands; operate assigned equipment and vehicles; and verbally communicate to exchange information.

**Vision:** See in the normal visual range with or without correction; vision sufficient to read computer screens and printed documents; and to operate assigned equipment.

**Hearing:** Hear in the normal audio range with or without correction.