

## NO RTEC JOB SPECIFIC SKILLS COMPETENCY

### PLUMBER

DOT: 862.381-030 SVP 7

**Job Description:** Assemble, install and repair pipes, fittings, and fixtures of heating, water, and drainage systems, according to specifications and plumbing codes. *Physical Demands*- Active w/heavy lifting, carrying, or moving (up to 100 lbs.); must be able to dig, lift and crawl under buildings when necessary; *General Educational Development* - R4 M3 L3; *Aptitudes* - Above average Manual Dexterity - Average General Learning Ability, Verbal, Numerical, Spatial, Form Perception, Motor Coordination and Finger Dexterity. *Please Note: Although there are no uniform national licensing requirements, most communities require plumbers to be licensed. Licensing requirements vary from area to area, but most localities require workers to pass an examination that tests their knowledge of the trade and of local plumbing codes.*

### CORE SKILL COMPETENCIES/INDICATORS:

1. Can demonstrate familiarity with basic principles in the areas of drafting, blueprint reading, general mathematics, applied chemistry and physics. (IN, S)
2. Can demonstrate an understanding of occupational health and safety standards and procedures. (R, IN, S, T)
3. Can demonstrate an understanding of local building regulations and plumbing codes. (R, IN, S, T)
4. Can demonstrate familiarity with industry-specific tools and equipment and their use, including basic and specialized hand tools (e.g. wrenches, plumbing hand tools, cutting and bending tools/equipment, basic welding equipment, machine-threading and hand threading equipment, and plumbing test equipment). (R, S, T)
5. Can demonstrate ability to identify and operate several types of industry-specific power equipment, such as sewer snakes, cameras, hydro-jetters, following proper operating procedures. (R, IN, S, T)
6. Can demonstrate the ability to read and interpret building plans and working drawings to determine equipment and materials and sequence of pipe installations required a job. (R, IN, S, T)
7. Can demonstrate ability to properly inspect structures to ascertain obstructions to be avoided to prevent weakening of structure resulting from installation of pipe. (IN, S, T)
8. Can demonstrate ability to locate and accurately mark position of pipe and pipe connections and passage holes for pipes in walls and floors, using ruler, spirit level, and plumb bob. (R, S, T)
9. Can demonstrate ability to make cuts and openings in beams, ceilings, floors, roofs, and walls to accommodate pipe and pipe fittings, using hand tools and power tools. (R, S, T)
10. Can demonstrate proper technique used to hang steel supports from ceiling joists to hold pipe in place, if needed. (R, S, T)
11. Can demonstrate ability to cut and thread pipes with the use of pipe cutters, cutting torches, and pipe-threading machines. (R, S, T)
12. Can demonstrate ability to bend pipe to required angle by use of pipe-bending machine or by placing pipe over block and bending it by hand. (R, S, T)
13. Can demonstrate ability to appropriately assemble and install valves, pipe fittings, and pipes composed of metals such as iron, steel, brass, and lead and nonmetals such as glass, vitrified clay, and plastic, using hand tools and power tools. (R, S, T)
14. Can demonstrate ability to appropriately join pipes by use of screws, bolts, fittings, solder, cement, or plastic solvent, etc. (R, S, T)
15. Can demonstrate proper technique used to caulk joints. (R, S, T)
16. Can demonstrate proper technique used to connect the pipe system to outside water or sewer lines. (R, S, T)

17. **Can demonstrate ability to fill pipe system with water or air and read pressure gauges to detect and locate leaks. (R, IN, S, T)**
18. **Can demonstrate proper techniques used to install and hook up plumbing fixtures and appliances such as sinks, commodes, bathtubs, showers, water heaters, hot water tanks, garbage disposal units, dishwashers, and water softeners. (R, S, T)**
19. **Can demonstrate proper procedure for a final check of the system to ensure that it works properly. (R, IN, S, T)**
20. **Can demonstrate ability to trace troubles in existing plumbing systems. (R, IN, S, T)**
21. **Can demonstrate ability to repair and maintain existing plumbing by replacing worn parts of valves and other fixtures, mending burst pipes, and opening clogged drains and lines. (R, S, T)**
22. **Can demonstrate ability to repair existing piping systems by cutting out defective pipe, replacing it with a new one and sealing the connections. (R, S, T)**
23. **Can demonstrate proper techniques used to reroute or extend piping systems. (R, S, T)**
24. **Can demonstrate ability to weld holding fixtures to steel structural members. (R, S, T)**
25. **Can demonstrate ability to inspect, make routine repairs/adjustments to maintain equipment and tools in proper and safe working condition. (R, IN, S, T)**
26. **Can demonstrate ability to maintain work area in clean and a safe condition. (R, S)**
27. **Can demonstrate ability to work with precision as regards the attainment of set limits, tolerances, or standards. (R, IN, S, T)**
28. **Can demonstrate ability to work under stress to meet schedule deadlines, or when confronted with emergency situations. (R, I)**