

## Summary Report for: 47-2152.02 - Plumbers

Assemble, install, and repair pipes, fittings, and fixtures of heating, water, and drainage systems, according to specifications and plumbing codes.

**Sample of reported job titles:** Plumber, Journeyman Plumber, Drain Technician, Plumber Gasfitter, Service Plumber

### Tasks

- Assemble pipe sections, tubing and fittings, using couplings, clamps, screws, bolts, cement, plastic solvent, caulking, or soldering, brazing and welding equipment.
- Fill pipes or plumbing fixtures with water or air and observe pressure gauges to detect and locate leaks.
- Review blueprints and building codes and specifications to determine work details and procedures.
- Prepare written work cost estimates and negotiate contracts.
- Study building plans and inspect structures to assess material and equipment needs, to establish the sequence of pipe installations, and to plan installation around obstructions such as electrical wiring.
- Keep records of assignments and produce detailed work reports.
- Perform complex calculations and planning for special or very large jobs.
- Locate and mark the position of pipe installations, connections, passage holes, and fixtures in structures, using measuring instruments such as rulers and levels.
- Measure, cut, thread, and bend pipe to required angle, using hand and power tools or machines such as pipe cutters, pipe-threading machines, and pipe-bending machines.
- Install pipe assemblies, fittings, valves, appliances such as dishwashers and water heaters, and fixtures such as sinks and toilets, using hand and power tools.

## Tools & Technology

**Tools** used in this occupation:

**Bench vises** — Bench chain vises; Bench yoke vises; Tristand chain vises

**Drain or pipe cleaning equipment** — Drain cleaning cables; Hand spinners; Sectional drain cleaning machines; Toilet augers

**Pipe or tube cutters** — Pipe cutters; Power pipe cutters; Ratcheting polyvinyl chloride PVC cutters; Tubing cutters

**Saws** — Hacksaws; Mini hacksaws

**Specialty wrenches** — Basin wrenches; Chain wrenches; Strainer wrenches; Water heater element removal wrenches

**Technology** used in this occupation:

**Accounting software** — Bookkeeping software; Intuit QuickBooks; Intuit Quicken; KRS Enterprises Service First!

**Analytical or scientific software** — Elite Software DPIPE; Elite Software FIRE; Klear Estimator; Quote Software QuoteExpress

**Data base management system software** — Insight Direct ServiceCEO; PricePoint software; Wintac Pro Software

**Project management software** — Estimating software; FastEST FastPipe; FastEST software; Vision InfoSoft Plumbing Bid Manager

**Word processing software** — Atlas Construction Business Forms; Contractor City Contractor Forms Pack; Microsoft Word; Word processing software

## Knowledge

**Customer and Personal Service** — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.

**Mechanical** — Knowledge of machines and tools, including their designs, uses, repair, and maintenance.

**English Language** — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

**Building and Construction** — Knowledge of materials, methods, and the tools

involved in the construction or repair of houses, buildings, or other structures such as highways and roads.

**Mathematics** — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.

**Public Safety and Security** — Knowledge of relevant equipment, policies, procedures, and strategies to promote effective local, state, or national security operations for the protection of people, data, property, and institutions.

**Chemistry** — Knowledge of the chemical composition, structure, and properties of substances and of the chemical processes and transformations that they undergo. This includes uses of chemicals and their interactions, danger signs, production techniques, and disposal methods.

**Design** — Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.

**Sales and Marketing** — Knowledge of principles and methods for showing, promoting, and selling products or services. This includes marketing strategy and tactics, product demonstration, sales techniques, and sales control systems.

## Skills

**Active Listening** — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

**Mathematics** — Using mathematics to solve problems.

**Repairing** — Repairing machines or systems using the needed tools.

**Troubleshooting** — Determining causes of operating errors and deciding what to do about it.

**Complex Problem Solving** — Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.

**Installation** — Installing equipment, machines, wiring, or programs to meet specifications.

**Equipment Selection** — Determining the kind of tools and equipment needed to do a job.

**Reading Comprehension** — Understanding written sentences and paragraphs in work related documents.

**Time Management** — Managing one's own time and the time of others.

**Management of Material Resources** — Obtaining and seeing to the appropriate use of equipment, facilities, and materials needed to do certain work.

## Abilities

**Arm-Hand Steadiness** — The ability to keep your hand and arm steady while moving your arm or while holding your arm and hand in one position.

**Manual Dexterity** — The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects.

**Problem Sensitivity** — The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.

**Static Strength** — The ability to exert maximum muscle force to lift, push, pull, or carry objects.

**Deductive Reasoning** — The ability to apply general rules to specific problems to produce answers that make sense.

**Extent Flexibility** — The ability to bend, stretch, twist, or reach with your body, arms, and/or legs.

**Finger Dexterity** — The ability to make precisely coordinated movements of the fingers of one or both hands to grasp, manipulate, or assemble very small objects.

**Information Ordering** — The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations).

**Near Vision** — The ability to see details at close range (within a few feet of the observer).

**Oral Comprehension** — The ability to listen to and understand information and ideas presented through spoken words and sentences.

## Work Activities

**Performing General Physical Activities** — Performing physical activities that require considerable use of your arms and legs and moving your whole body, such as climbing, lifting, balancing, walking, stooping, and handling of materials.

**Getting Information** — Observing, receiving, and otherwise obtaining information from all relevant sources.

**Handling and Moving Objects** — Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.

**Identifying Objects, Actions, and Events** — Identifying information by categorizing, estimating, recognizing differences or similarities, and detecting changes in circumstances or events.

**Repairing and Maintaining Mechanical Equipment** — Servicing, repairing,

adjusting, and testing machines, devices, moving parts, and equipment that operate primarily on the basis of mechanical (not electronic) principles.

**Performing for or Working Directly with the Public** — Performing for people or dealing directly with the public. This includes serving customers in restaurants and stores, and receiving clients or guests.

**Making Decisions and Solving Problems** — Analyzing information and evaluating results to choose the best solution and solve problems.

**Controlling Machines and Processes** — Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles).

**Inspecting Equipment, Structures, or Material** — Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.

**Monitor Processes, Materials, or Surroundings** — Monitoring and reviewing information from materials, events, or the environment, to detect or assess problems.

## Work Context

**Face-to-Face Discussions** — How often do you have to have face-to-face discussions with individuals or teams in this job?

**Contact With Others** — How much does this job require the worker to be in contact with others (face-to-face, by telephone, or otherwise) in order to perform it?

**Outdoors, Exposed to Weather** — How often does this job require working outdoors, exposed to all weather conditions?

**Spend Time Using Your Hands to Handle, Control, or Feel Objects, Tools, or Controls** — How much does this job require using your hands to handle, control, or feel objects, tools or controls?

**Exposed to Minor Burns, Cuts, Bites, or Stings** — How often does this job require exposure to minor burns, cuts, bites, or stings?

**Importance of Being Exact or Accurate** — How important is being very exact or highly accurate in performing this job?

**Indoors, Not Environmentally Controlled** — How often does this job require working indoors in non-controlled environmental conditions (e.g., warehouse without heat)?

**Telephone** — How often do you have telephone conversations in this job?

**Exposed to Hazardous Equipment** — How often does this job require exposure to hazardous equipment?

**Cramped Work Space, Awkward Positions** — How often does this job require working in cramped work spaces that requires getting into awkward positions?

## Job Zone

**Title** Job Zone Three: Medium Preparation Needed

**Overall Experience** Previous work-related skill, knowledge, or experience is required for these occupations. For example, an electrician must have completed three or four years of apprenticeship or several years of vocational training, and often must have passed a licensing exam, in order to perform the job.

**Job Training** Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers.

**Job Zone Examples** These occupations usually involve using communication and organizational skills to coordinate, supervise, manage, or train others to accomplish goals. Examples include funeral directors, electricians, forest and conservation technicians, legal secretaries, interviewers, and insurance sales agents.

**SVP Range** (6.0 to < 7.0)

**Education** Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree. Some may require a bachelor's degree.

**There is 1 recognized apprenticeable specialty associated with this occupation:**

Plumber

To learn about specific apprenticeship opportunities, please consult the U.S. Department of Labor [State Apprenticeship Information](#) website.

For general information about apprenticeships, training, and partnerships with business, visit the U.S. Department of Labor [Office of Apprenticeship Training, Employer and Labor Services \(OATELS\)](#) website.

## Interests

**Realistic** — Realistic occupations frequently involve work activities that include practical, hands-on problems and solutions. They often deal with plants, animals, and real-world materials like wood, tools, and machinery. Many of the occupations require working outside, and do not involve a lot of paperwork or working closely with others.

## Work Styles

**Dependability** — Job requires being reliable, responsible, and dependable, and fulfilling obligations.

**Attention to Detail** — Job requires being careful about detail and thorough in completing work tasks.

**Self Control** — Job requires maintaining composure, keeping emotions in check, controlling anger, and avoiding aggressive behavior, even in very difficult situations.

**Cooperation** — Job requires being pleasant with others on the job and displaying a good-natured, cooperative attitude.

**Integrity** — Job requires being honest and ethical.

**Persistence** — Job requires persistence in the face of obstacles.

**Adaptability/Flexibility** — Job requires being open to change (positive or negative) and to considerable variety in the workplace.

**Independence** — Job requires developing one's own ways of doing things, guiding oneself with little or no supervision, and depending on oneself to get things done.

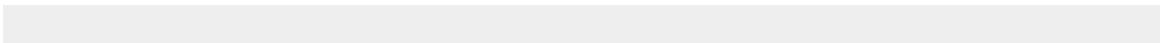
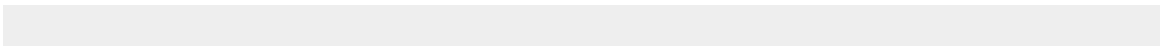
**Stress Tolerance** — Job requires accepting criticism and dealing calmly and effectively with high stress situations.

**Initiative** — Job requires a willingness to take on responsibilities and challenges.

## Work Values

**Relationships** — Occupations that satisfy this work value allow employees to provide service to others and work with co-workers in a friendly non-competitive environment. Corresponding needs are Co-workers, Moral Values and Social Service.

**Achievement** — Occupations that satisfy this work value are results oriented and allow employees to use their strongest abilities, giving them a feeling of accomplishment. Corresponding needs are Ability Utilization and Achievement.



## Related Occupations

47-2011.00	<a href="#">Boilermakers</a> <small>InDemand</small>
47-2031.01	<a href="#">Construction Carpenters</a> <small>InDemand</small>
47-2152.01	<a href="#">Pipe Fitters and Steamfitters</a> <small>InDemand</small>
47-3015.00	<a href="#">Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters</a> <small>InDemand</small>
49-3043.00	<a href="#">Rail Car Repairers</a>
49-9045.00	<a href="#">Refractory Materials Repairers, Except Brickmasons</a>
51-2011.00	<a href="#">Aircraft Structure, Surfaces, Rigging, and Systems Assemblers</a> <small>InDemand</small>
51-4121.06	<a href="#">Welders, Cutters, and Welder Fitters</a> <small>InDemand</small>

## Wages & Employment Trends

Median wages data collected from **Plumbers, Pipefitters, and Steamfitters**.  
Employment data collected from **Plumbers, Pipefitters, and Steamfitters**.  
Industry data collected from **Plumbers, Pipefitters, and Steamfitters**.

**Median wages (2014)** \$24.36 hourly, \$50,660 annual

**State wages**



**Employment (2014)** 425,000 employees

**Projected growth (2014-2024)** ■■■ Faster than average (9% to 13%)

**Projected job openings (2014-2024)** 105,200

**State trends**



**Top industries (2014)** [Construction](#)  
[Self-Employed](#)

Source: Bureau of Labor Statistics [2014 wage data](#) and [2014-2024 employment projections](#).  
"Projected growth" represents the estimated change in total employment over the projections period (2014-2024). "Projected job openings" represent openings due to growth and replacement.

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## Job Openings on the Web





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## Sources of Additional Information

+ - All 7 displayed

**Disclaimer:** Sources are listed to provide additional information on related jobs, specialties, and/or industries. Links to non-DOL Internet sites are provided for your convenience and do not constitute an endorsement.

- [Plumbers, pipefitters, and steamfitters](#) . Bureau of Labor Statistics, U.S. Department of Labor. *Occupational Outlook Handbook, 2016-17 Edition*.
- [American Fire Sprinkler Association \(AFSA\)](#) , 12750 Merit Dr., Suite 350, Dallas, TX 75251. Phone: (214) 349-5965. Fax: (214) 343-8898.
- [Home Builders Institute \(HBI\)](#) , 1201 15th St. NW, Sixth Floor, Washington, DC 20005. Phone: (800) 795-7955. Fax: (202) 266-8999.
- [Mechanical Contractors Association of America \(MCAA\)](#) , 1385 Piccard Dr., Rockville, MD 20850. Phone: (301) 869-5800. Fax: (301) 990-9690.
- [National Association of Home Builders \(NAHB\)](#) , 1201 15th St. NW, Washington, DC 20005. Phone: (800) 368-5242.
- [National Fire Sprinkler Association \(NFSA\)](#) , 40 Jon Barrett Rd., Patterson, NY 12563. Phone: (845) 878-4200.
- [Plumbing-Heating-Cooling Contractors Association \(PHCC\)](#) , 180 S. Washington St., Falls Church, VA 22046. Phone: (800) 533-7694. Fax: (703) 237-7442.