

# What's this job all about?

Plumbers and pipefitters install and repair pipe systems that carry water, steam, air, or other fluids or gases. Our modern system of plumbing - based on the technology of ancient Romans - removes waste and treats water. At the same time, it removes the chance for diseases to spread. Calling the plumber to fix a leaking pipe isn't just about fixing a nuisance. It's also helping maintain public health and it's helping to make sure the structure of buildings remains strong and intact.

Plumbers and pipefitters are considered a single trade. However, workers usually specialize in one area. Plumbers install and repair water, waste, and gas systems in homes and commercial buildings. Pipefitters install and repair pipe systems used in manufacturing. They also work on pipe systems that generate electricity and heat and cool buildings. Some pipefitters specialize in one type of system. For example, they may specialize in hospital work, where they install oxygen and gas. Steamfitters install pipe systems that move liquids or gases under high pressure. Plumbers and pipefitters in Alaska coordinate their work in a wide variety of industries, from new construction, to remodeling, to the oil and gas industry. There will be an increased need for members of this trade during the construction of a natural gas pipeline in Alaska.

### Here's what Plumbers and Pipefitters do:

- Study blueprints, drawings, and building codes.
- Inspect buildings to determine what materials to use.
- Select pipe sizes and types and other materials.
- Fit piping into the building with the least amount of waste; measure and mark areas where pipes will be installed.
- Cut holes in walls, ceilings, or floors where the pipes will go.
- Hang steel supports from ceiling joists for large systems.
- Cut and bend the lengths of pipe, using saws, pipe cutters, and pipe-bending machines.
- Install the pipe, fixtures, and appliances.
- Connect the system to water, gas, or sewer lines.
- Check the system with pressure gauges to be sure it is free from leaks and operates properly.
- Repair and maintain plumbing, replace defective fittings and broken pipes.
- Modify existing pipes and maintain related equipment.
- Operate pump equipment to remove water from flooded areas, such as basements or manholes.
- Direct other workers in cutting, assembling, and installing pipe systems.
- Provide cost quotes to customers, negotiate contracts.

### How much money can I make?

**Median Wage: \$27.58.**

This occupation is included in the larger group of "pipelaying fitters, pipefitters, and plumbers." The median wage for this group is \$4,781 per month (\$27.58 per hour). Half of all of these workers earn between \$3,602 and \$5,651 per month (\$20.78 and \$32.60 per hour). Nationally, the median wage for plumbers and pipefitters is \$3,513 per month (\$20.27 per hour). Apprentices usually begin at about half the wage rate paid to experienced plumbers and pipefitters. Wages increase regularly as their skills improve. Full-time salaried plumbers may earn benefits such as vacation, sick leave, and health insurance. After an initial waiting period, apprentices receive the same benefits as experienced plumbers and pipefitters. Self-employed plumbers and pipefitters must provide their own insurance.



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The first place Rachael Duncan lived after graduating from Alyeska Central School and moving out of her parent's house was a cabin without running water near Salcha, Alaska. "I lived there with a roommate for two years," she said, "so it's no wonder I have a real appreciation for what plumbers and pipefitters actually do." Rachael was working for minimum wage as a cook and a waitress when her mother told her about an ad she saw in the newspaper for an Alaska Works Partnership class for plumbers and pipefitters.

"I like doing construction work and had done some remodeling," Rachael said, "so I decided to try to sign up." At the same time, Rachael was hearing about the possibility of a gas pipeline getting built in Alaska in the local news reports. "I realized a gasline would need a lot of pipefitters. When a pipeline gets built in Alaska there could be another big boom with many job opportunities," she said. Rachael loved the class and managed to get a job as a welder's helper. She then decided to apply for an apprenticeship program in the plumbing trade and the rest is history. Now she's working alongside a journeyman plumber every day on a large building project in Fairbanks. "I just got done helping my journeyman plumb all the unit heaters and air handlers in a large commercial building," she said, "and now we're working to get all the sinks and toilets installed." Rachael is one of only three

women on her job site. "None of the men give us a hard time," she said. "Once they get to know you they start being themselves around you."

"I'd really like to see more young women go into the construction field," she said. "It doesn't matter what kind of trade you do, my advice is that it's really worth it." The hardest part of the transition to her new job, she said, was the math. "My advice to anyone interested in this trade is to really focus on math while you're in school. Everyone always struggles with the math. I was lucky that in the class I took, I got a refresher course that helped me. Now I use the math every day to figure out take-offs in a pipe or to help find elevations and it's a much more natural thing." Other advice Rachel gives to young people interested in the trades is to stay away from drugs. "They do random drug tests on the job site in all the trades and if you fail, you lose your job. I always tell young people that it's not worth it to throw away a good paying career and an excellent opportunity by using drugs," she said.

Rachael said her life has done nothing but get better since she started her apprenticeship. "I'm making close to \$600 more a week than I made as a waitress," she said. "Now I have a car and my roommate and I are renting a really nice three bedroom apartment – with plumbing!"



## Plumbers and Pipefitters

### How long does it take to receive training?

To work as a plumber or pipefitter, you must have a high school diploma or GED, complete classroom coursework, complete on-the-job training, have a license to work as a contractor, pass a state or local licensing exam, and have good communication skills. Nearly all plumbers and pipefitters learn their skills through union apprenticeship training programs.

Apprenticeship programs usually consist of three to five years of on-the-job training. Each year you receive at least 144 hours of classroom training. Prepare for an apprenticeship by taking courses at a professional technical school or two-year college. The military is an excellent source of training. The military trains people to install and repair plumbing and pipe systems on aircraft, missiles, and ships. If you receive training in the military, you may earn credit for previous work experience when you enter a civilian apprenticeship program.

### When I'm ready to work, will there be job openings?

The outlook for job openings for plumbers and pipefitters in Alaska is good to 2014, with average growth projected. Most openings are expected to result from replacement needs; replacing those who retire or otherwise permanently leave the occupation. Nationally, the number of jobs for plumbers and pipefitters is expected to increase about as fast as average through the year 2014. The demand for plumbers and pipefitters is expected to outpace the supply of workers trained in this field. In addition, several thousand jobs will occur each year as workers retire or leave the occupation so job opportunities will be good. However, job openings and apprenticeships vary with local conditions. New construction is expected to grow slowly through the year 2014. Much of the work for plumbers will stem from the repair and maintenance of residential, commercial, and industrial pipe systems. Jobs for plumbers and pipefitters are usually less affected by the economy than other construction trades. This is because plumbing repairs often cannot be put off.

*Please see the Training Programs section of this booklet to find out more about training in these career fields in Alaska.*

## HELPFUL HIGH SCHOOL COURSES

A high school degree is almost always required to work as a plumber or pipefitter. You should take courses in high school that prepare you to earn a high school diploma. Here is a list of high school courses that will help prepare you. Some of these courses are also available at the technical or college level.

### Business

Introduction to Business

### Construction Trades

Exploration of Construction Careers

Plumbing

Construction Trades Work Experience

### Drafting

Drafting

Blueprint Reading

### Industrial and Technology Education

Exploration of Careers

General Industrial Arts

Materials and Processes

Industrial Safety and First Aid

Equipment Maintenance and Repair

Industrial and Technology Education Work Experience

### Life and Physical Sciences

Chemistry

Physics

### Mathematics

Integrated Math

General Math, Applied Math

Pre-Algebra, Algebra

Business Math

### Precision Metalwork

Welding

