

Steamfitter

At a Glance

Steamfitters install and repair high-pressure pipe systems. These systems are often found in industrial plants and large commercial buildings.

16 Career Clusters

Architecture & Construction

Manufacturing

Earnings

Earnings Range: 25 - 40/hr

Level of Education

- High School
- 2-Year College or Technical Training

Core Tasks

- Read blueprints to design systems and select the right pipes and materials
- Measure, cut, and assemble the pipes
- Weld or solder the pipes together
- May install boilers and connect them to pipe systems
- Push pressurized air or liquid through the pipes to check for leaks

Attributes & Abilities

- Physically fit
- Physical strength and stamina
- Problem-solving skills
- Detail-oriented
- Communication skills

Workplace

- Most work for pipeline construction contractors, steam generating plants, chemical and gas plants, utility companies, and manufacturers
- The work is physically demanding
- A lot of work is done high up on ladders or scaffolds
- Some risk of injury, including burns caused by welding and soldering equipment or hot pipes
- Most work a 5-day, 40-hour week, but overtime is sometimes necessary

Job Description

Pipes are a crucial part of our lives. They carry water, steam, and gas to the places we live and work. But not all pipes are the same. Some pipes carry matter at greater pressures than the pipes used in our homes do. These pipes are often used in industrial buildings. A special type of pipefitter, called a steamfitter, works on these stronger, heavier pipes.

Like other pipefitters, steamfitters install and repair pipe systems. However, pipefitters work with both low and high-pressure pipe systems. Steamfitters specialize in high-pressure systems.

Most high-pressure pipe systems are found in industrial plants and commercial buildings. They carry steam, water, chemicals, or other substances. These systems are used for heating, cooling, lubricating, and other processes in buildings.

Setting these systems up involves a few steps. Steamfitters first read and interpret the blueprints that tell them where the pipes go. They may also make detailed sketches of their own. This can help them plan out how they will install the system.

Then, steamfitters need to choose the type of pipe they will use. They can work with steel, copper, or cast iron pipes. The substances in high-pressure pipe systems are under greater force than in other systems. The pipes that they work with have to be stronger and heavier than other pipes.

The next step is to measure and cut the pipe. Pipe sections are joined together and secured into place. They are installed with the right valves, fittings, and controls. In some cases, steamfitters install a boiler as well, and connect it to the pipe system. The last step is to test the whole system for leaks.

Steamfitters also maintain existing pipe systems. They do quality control checks. They remove and replace worn-out parts. They perform general repairs to systems as needed.

Some steamfitters may occasionally work with low-pressure systems, too.

Working Conditions

Steamfitters can work for:

- pipeline and construction contractors
- thermal and steam generating plants
- chemical and gas plants
- manufacturers
- utility companies
- oil refineries
- pulp mills

Some people in this trade work in the maintenance departments of schools or hospitals. Others run their own contracting businesses.

Steamfitters usually work 8-hour days, 5 days a week. They may work overtime to meet deadlines. Some of them work evening or weekend shifts.

Strength and stamina are important in this job. Steamfitters must be able to stand for long periods. They often have to lift, carry, and hold heavy pipes and other equipment.

Steamfitters also need to be aware of safety. They risk injury from sharp tools and hot pipes. Other dangers include chemicals, gases, and loud noises.

These tradespeople have to be ready for all types of weather, since they work both inside and outside. They often work high in the air, on ladders or scaffolds. This isn't a job for people who are afraid of heights! Local travel is often required to reach work sites.

Earnings

Steamfitters usually earn an hourly wage. Typical wages range from about \$14 to \$43 an hour, but some senior steamfitters can earn more. In general, steamfitters can earn from \$30,000 to more than \$90,000 a year. The highest wages go to people who are supervisors as well.

Apprentices earn a percentage of a full steamfitter's wage. This percentage increases during each year they are in training. For example, a first-year apprentice may make half of the full wage. By the last year of their apprenticeship, they make at least 80% of this wage.

Hourly wages in this trade depend on a few factors. These include level of experience, location, and employer. Union workers often make higher wages.

Annual income for steamfitters is based on some other factors. It depends on their hourly wages how much they work in a year. The amount of work available in a year depends on the economy. When the economy is weak, work can be harder to find for steamfitters. When the economy is doing well, there are more jobs.

Many steamfitters get benefits along with their pay. These may include paid vacation days, health coverage, and a pension plan. People who are self-employed must cover these expenses on their own.

Massachusetts Wages

Occupation: Plumbers, Pipefitters, and Steamfitters

Level of Experience	Hourly	Annual
Entry Wage	\$23.14	\$48,140
Median Wage	\$30.44	\$63,320
Experienced Wage	\$44.29	\$92,110

Source: U.S. Department of Labor, Bureau of Labor Statistics <http://www.bls.gov>

Massachusetts Outlook

Occupation: Plumbers, Pipefitters, and Steamfitters

Employment

2014	10,820
2024	11,280

Change

Number	460
Percentage	4.2

Annual Average Openings

Total	Growth	Replacement
190	--	--

Source: Projections Central <http://www.projectionscentral.com>

Education

Most steamfitters enter the trade through an apprenticeship program. Many of these programs are available through the plumbing and pipe fitting union (UA). Other businesses organizations, including the Associated Builders and Contractors, also offer programs.

To apply to most programs, you must be at least 18 years old. Often, you also need a high school diploma. You may have to pass a test as well.

Most steamfitter apprenticeships are 4 to 5 years long. You will spend most of this time training on the job. You learn the trade from qualified steamfitters and earn an hourly wage.

You must also complete a set number of classroom hours. You will get lessons in subjects such as math and basic physics. You will also learn how to read blueprints, and about piping systems. After the training period, you will be a qualified, or journeyman, steamfitter.

You need a license to work in some states and towns. The demands for licensing differ by state. In most cases, you will have to pass an exam.

Related College Programs

- Pipefitting/Pipefitter and Sprinkler Fitter
- Welding Technology/Welder

Other Suggested Qualifications

Steamfitters need to be physically fit, as many of their duties require strength and stamina. They should be good problem-solvers, as well as careful, detail-oriented workers. Because steamfitters often work as part of a team, strong communication skills are important. Steamfitters should also be willing to continually update their skills to keep up with changes in the technologies and materials used in the trade.

Sample High School Program of Study

This Program of Study can serve as a guide, along with other career planning materials, as learners continue on a career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner’s educational and career goals.

Maintenance, Installation & Repair Manufacturing

Grade 9	Grade 10	Grade 11	Grade 12
English/Language Arts			
English/Language Arts I	English/Language Arts II	English/Language Arts III	English/Language Arts IV
Math			
Algebra I	Geometry	Algebra II	Trigonometry or Statistics or Other math course
Science			
Earth or Life or Physical Science	Biology	Chemistry	Physics
Social Studies/Sciences			

Grade 9	Grade 10	Grade 11	Grade 12
State History Civics	U.S. History	World History Economics	Psychology
Career & Technical Courses			
Introduction to Manufacturing Occupations	Information Technology Applications	Employment in Manufacturing Occupations	Applications in Manufacturing Technology

States' Career Clusters Initiative, 2008, www.careerclusters.org.

Important

- Check with your advisor to make sure that your course selections satisfy your graduation requirements.
- Courses available may vary from school to school.

Sample Career Path

People take different pathways through their careers, but no one starts at the top. This is an example of how the earnings, education and experience requirements, and responsibilities might progress for someone in this occupation.

Level 1

Sample Title	Apprentice
Earnings	\$13 to \$25 an hour
Requirements	<ul style="list-style-type: none"> • Preferably a high school diploma (required for some programs) • Registered in an apprenticeship program
Responsibilities	Learning the trade; working under the supervision of a journeyman and receiving classroom instruction.

Level 2

Sample Title	Steamfitter
Earnings	\$25 to \$40 an hour
Requirements	<ul style="list-style-type: none"> • Completion of apprenticeship • Licensed by state or municipality, if required
Responsibilities	Installing, repairing, and maintaining high-pressure pipe systems; training apprentices.

Level 3

Sample Title	Senior Steamfitter
Earnings	\$35 to \$45 an hour
Requirements	• At least 5 years of experience as a fully qualified steamfitter
Responsibilities	Installing, repairing, and maintaining high-pressure pipe systems; training apprentices; supervising other steamfitters.

Related Careers

Here are some other occupations that you might be interested in. Click on an occupation name to learn more.

- Boilermaker
- Construction Tradesperson
- Crane Operator
- Heating, Air Conditioning, Refrigeration Tech
- Heavy Equipment Operator
- Ironworker
- Lineworker
- Oil and Gas Well Drilling Crew
- Pipefitter
- Pipelayer
- Plumber
- Sheet Metal Worker
- Sprinkler System Installer
- Welder

Related Military Careers

- Plumber / Pipe Fitter

Career Clusters

Career Clusters are groups or families of occupations that share common characteristics such as knowledge requirements, skill sets, and/or goals.

Architecture & Construction

Manufacturing

National Employment by Industry

Industry	% Employed
Construction	68
Self-Employed	14

Source: O*Net Online, Browse by Industry, US Department of Labor
<http://online.onetcenter.org/find/industry>

Other Resources

United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry of the United States, Canada and Australia (UA)

The UA is a trade association representing plumbing and pipefitting professionals across the US, Canada, and Australia. Browse the Training & Recruitment section to learn about different trades and apprenticeship opportunities.

<http://www.ua.org>

Building Advantage – Apprenticeship Program

This organization aims to raise awareness about construction and trade unions. Here you can find excellent career videos to help you learn more about a variety of careers.

<http://www.buildingadvantage.org/apprenticeship>

Plumbing-Heating-Cooling Contractors Association (PHCC)

This organization represents contractors employed in the plumbing, heating, and cooling industry. For general career information, scroll over Education & Events and click on Educational Foundation.

<http://www.phccweb.org>

Build Your Future – Choose Your Career Path

This program of the National Center for Construction Education and Research (NCCER) aims to promote careers and education in the construction industry. Here you can find out more about getting started in construction.

<http://byf.org/path>

Occupational Outlook Handbook – Plumbers, Pipefitters, and Steamfitters

Career information from the US Department of Labor.

<http://www.bls.gov/ooh/Construction-and-Extraction/Plumbers-pipefitters-and-steamfitters.htm>