

Construction and Extraction

Sheet Metal Workers

Sheet Metal Workers make, install, and maintain heating, ventilation, and air-conditioning duct systems. They also deal with roofs, siding, rain gutters, downspouts, skylights, restaurant equipment, outdoor signs, railroad cars, tailgates, customized precision equipment, and many other products made from metal sheets. Some of these professionals may work with fiberglass and plastic materials as well. Although some workers specialize in fabrication, installation, or maintenance, most do all three jobs. Sheet metal workers do both construction-related work and mass production of sheet metal products in manufacturing.

Sheet metal workers first study plans and specifications to determine the kind and quantity of materials they will need. They measure, cut, bend, shape, and fasten pieces of sheet metal to make ductwork, countertops, and other custom products. Sheet metal workers program and operate computerized metalworking equipment. They cut, drill, and form parts with computer-controlled saws, lasers, shears, and presses.

In shops without computerized equipment, and for products that cannot be made with such equipment, sheet metal workers make the required calculations and use tapes, rulers, and other measuring devices for layout work. They then cut or stamp the parts with machine tools.

In addition to installation, some sheet metal workers specialize in testing, balancing, adjusting, and servicing existing air-conditioning and ventilation systems to make sure they are functioning properly and to improve their energy efficiency. Properly installed duct systems are a key component of heating, ventilation, and air-conditioning (HVAC) systems; sometimes duct installers are called HVAC technicians. A growing activity for sheet metal workers is the commissioning of a building- a complete mechanical inspection of the building's HVAC, water, and lighting systems.

Sheet metal workers in manufacturing plants make sheet metal parts for products such as aircraft or industrial equipment. Although some of the fabrication techniques used in large-scale manufacturing are similar to those used in smaller shops, the work may be highly automated and repetitive. Sheet metal workers doing such work may be responsible for reprogramming the computer control systems of the equipment they operate.

Sheet metal workers usually work a 40-hour week. Those who fabricate sheet metal products work in small shops and manufacturing plants that are usually well lit well ventilated. However, they stand for long periods must lift heavy materials and finished pieces. Those performing installation at construction sites or inside buildings do

considerable bending, climbing, and squatting, sometimes in close quarters or awkward positions. Working outdoors exposes sheet metal workers to various kinds of weather.

Education/Training

How to Obtain:

Generally a High School Diploma or equivalent is needed. After high school, there are a number of different ways to train. One way is to get a job with a contractor who will provide training on the job. Employers may send their employees to a trade or vocational school to take courses or to a community college to receive further formal training.

Most sheet metal workers in large-scale manufacturing receive on-the-job training. Another option for training is to participate in an apprenticeship program. Apprenticeship programs combine paid on-the-job training with related classroom instruction. The length of the program, typically 4 to 5 years, varies with the apprentice's skill. Apprenticeship programs provide comprehensive instruction in both sheet metal fabrication and sheet metal installation. They may be administered by local joint committees such as the Sheet Metal Workers' International Association.

Certification in the area is not required, but may be helpful for advancement. It is provided by national organizations such as the Fabricators and Manufacturers Association and the International Training Institute for the Sheet Metal and Air-Conditioning Industry. Generally in order to participate in such programs, individuals must have:

- 1 to 2 years experience as a machine operator; or
- 1 to 2 years of technical training from an accredited program; or
- Successful completion of a 1 year formally-recognized apprenticeship program (through a local Sheet Metal Workers' Association) in precision sheet metal
- Completed exam application - the application must be signed by at least one supervisor (or instructor). If the candidate is not currently employed, a letter of reference must accompany the application.

More Information on Certification and Apprenticeship Programs:

- Fabricators and Manufacturers Association, International:
<http://www.fmanet.org/training/program-overview.cfm>
- Sheet Metal Workers' International Association:
<http://www.smwia.org/Careers.aspx>

Average Costs:

Apprenticeship programs generally do not charge the apprentice for classroom instruction, provided the apprentice maintains employment with a contractor affiliated with the apprenticeship program, throughout the apprenticeship period of 3 to 4 years.

The cost for the Precision Sheet Metal Operator (PSMO) Certification offered by the Fabricators and Manufacturers Association: \$345 plus the cost of any exam study aids. The certification must be renewed every three years through the achievement of educational credits. The cost of recertification can range from \$0 - \$25*.

*Note: Costs of recertification vary.