
Roofers

Significant Points

- Most roofers learn their skills on the job; some train through 3-year apprenticeships.
- Demand for roofers is less vulnerable to downturns in the economy than demand for other construction trades because most roofing work consists of repair and reroofing.
- Most job openings will occur from the need to replace those who leave the occupation because the work can be hot, strenuous, and dirty, causing many people to switch to jobs in other construction trades.

Nature of the Work

Roofers repair and install roofs made from a combination of some of the following: tar, asphalt, gravel, rubber, thermoplastic, metal, and shingles—all of which protect buildings and their contents from water damage. A leaky roof can damage ceilings, walls, and furnishings. Repair and reroofing—replacing old roofs on existing buildings—make up the majority of work for roofers.

There are two types of roofs—low-slope and steep-slope. Low-slope roofs rise 4 inches or less per horizontal foot and are installed in layers. Steep-slope roofs rise more than 4 inches per horizontal foot and are usually covered in shingles. Most commercial, industrial, and apartment buildings contain low-slope roofs, while the majority of residential houses have steep-slope roofs. Some roofers work on both types; others specialize.

Most low-slope roofs are covered with several layers of materials. Roofers begin by installing a layer of insulation on the roof deck, followed by applying a tarlike substance called molten bitumen on top of it. Next, they install overlapping layers of roofing felt—a fabric soaked in bitumen—over the surface. Roofers use a mop to spread hot bitumen over the felt before adding another layer of felt. This seals the seams and makes the surface waterproof. Roofers repeat these steps to build up the desired number of layers, called “plies.” The top layer is then glazed to make a smooth finish or has gravel embedded in the hot bitumen to create a rough surface.

An increasing number of low-slope roofs are covered with single-ply membranes of waterproof rubber or thermoplastic compounds. Roofers roll these sheets over the roof’s insulation and seal the seams. Adhesive, mechanical fasteners, or stone ballast hold the sheets in place. Roofers must make sure the building is strong enough to hold the stone ballast.

A small but increasing number of buildings now have “green” roofs that incorporate landscape roofing systems. A landscape roofing system begins with a single or multiply waterproof layer. After it is proven to be leak free, roofers put a root barrier over it, and then layers of soil, in which trees and grass are planted. Roofers are responsible for making sure the roof is watertight and can endure the weight and water needs of the plants.

Most residential steep-slope roofs are covered with shingles. To apply shingles, roofers first lay, cut, and tack 3-foot strips

of roofing felt over the entire roof. Starting from the bottom edge, roofers then nail overlapping rows of shingles to the roof. Roofers measure and cut the felt and shingles to fit intersecting roof surfaces and to fit around vent pipes and chimneys. Wherever two sections of the roof meet each other at an angle or where shingles reach a vent pipe or chimney, roofers cement or nail flashing-strips of metal or shingle over the joints to make them watertight. Finally, roofers cover exposed nail-heads with roofing cement or caulking to prevent water leakage. A similar process is used when installing tile, metal shingles, or shakes (rough wooden shingles).

Some roofers specialize in waterproofing or dampproofing masonry and concrete walls, floors, and foundations. To prepare surfaces for waterproofing, they hammer and chisel away rough spots or remove them with a rubbing brick before applying a coat of liquid waterproofing compound. They also may paint or spray surfaces with a waterproofing material or attach waterproofing membrane to surfaces. Roofers usually spray a bitumen-based coating on interior or exterior surfaces when dampproofing.

Work environment. Roofing work is strenuous. It involves heavy lifting, as well as climbing, bending, and kneeling. Roofers work outdoors in all types of weather, particularly when making repairs. However, they rarely work when it rains or in very cold weather because ice can be dangerous. In northern



Roofers need good physical condition, strength, and balance.

Projections data from the National Employment Matrix

Occupational Title	SOC Code	Employment, 2008	Projected Employment, 2018	Change, 2008-2018	
				Number	Percent
Roofers.....	47-2181	148,900	154,600	5,700	4

(NOTE) Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

States, roofing work is generally not performed during winter months. During the summer, roofers may work overtime to complete jobs quickly, especially before forecasted rainfall.

Workers risk slips or falls from scaffolds, ladders, or roofs, and burns from hot bitumen, but safety precautions can prevent most accidents. In addition, roofs can become extremely hot during the summer, causing heat-related illnesses. Data from the U.S. Bureau of Labor Statistics show that full-time roofers experienced a work-related injury and illness rate that was much higher than the national average.

Training, Other Qualifications, and Advancement

Most roofers learn their skills on the job by working as helpers for experienced roofers and by taking classes, including safety training offered by their employers; some complete 3-year apprenticeships.

Education and training. A high school education, or its equivalent, is helpful and so are courses in mechanical drawing and basic mathematics. Although most workers learn roofing as helpers for experienced workers, some roofers train through 3-year apprenticeship programs administered by local union-management committees representing roofing contractors and locals of the United Union of Roofers, Waterproofers, and Allied Workers. Apprenticeship programs usually include at least 2,000 hours of paid long-term on-the-job training each year, plus a minimum of 144 hours of classroom instruction a year in tools and their use, arithmetic, safety, and other topics. On-the-job training for apprentices is similar to the training given to helpers, but an apprenticeship program is more structured and comprehensive. Apprentices, for example, also learn to damp-proof and waterproof walls.

Trainees start by carrying equipment and material and erecting scaffolds and hoists. Within 2 or 3 months, they are taught to measure, cut, and fit roofing materials and, later, to lay asphalt or fiberglass shingles. Because some roofing materials are used infrequently, such as solar tiles, it can take several years to get experience working on all types of roofing.

Other qualifications. Physical condition and strength, along with good balance, are essential for roofers. They cannot be afraid of heights. Experience with metal-working is helpful for workers who install metal roofing. Usually, apprentices must be at least 18 years old.

Advancement. Roofers may advance to become supervisors or estimators for a roofing contractor or become independent contractors themselves.

Employment

Roofers held about 148,900 jobs in 2008. About 70 percent of all salaried roofers worked for roofing contractors, while only 21 percent were self-employed. Many self-employed roofers specialized in residential work.

Job Outlook

Most job openings will occur from turnover because the work is hot, strenuous, and dirty, causing many people to switch to jobs in other construction trades. Employment is projected to grow slower than the average.

Employment change. Employment of roofers is expected to grow 4 percent between 2008 and 2018, slower than the average for all occupations. Roofs deteriorate faster than most other parts of buildings and, as a result, they need to be repaired or replaced more often. In addition to repair work, the need to install roofs on new buildings may result in some job growth. So as building construction increases, some demand for roofers can be expected.

Employment growth, nonetheless, may be impeded because a greater proportion of roofing work may be completed by other construction workers as opposed to traditional roofing contractors.

Job prospects. Job opportunities for roofers will occur primarily because of the need to replace workers who leave the occupation. The proportion of roofers who leave the occupation each year is higher than in most construction trades—roofing work is hot, strenuous, and dirty, and a considerable number of workers treat roofing as a temporary job until they find other work. Some roofers leave the occupation to go into other construction trades. Jobs should be easier to find during spring and summer.

Employment of roofers who install new roofs, like that of many other construction workers, is sensitive to fluctuations of the economy. Workers may experience periods of unemployment when the overall level of construction falls. On the other hand, shortages of these workers may occur in some areas during peak periods of building activity. Nevertheless, roofing work is more heavily concentrated in repair and replacement rather than new installation, making demand for roofing less vulnerable to downturns than demand for some other construction trades.

Earnings

In May 2008, median hourly wages of roofers were \$16.17. The middle 50 percent earned between \$12.97 and \$21.98. The lowest 10 percent earned less than \$10.63, and the highest 10 percent earned more than \$28.46. Median hourly wages of roofers in the foundation, structure, and building exterior contractors industry were \$16.26. Earnings may be less on occasions when poor weather limits the time roofers can work.

Apprentices usually begin earning about 40 percent to 50 percent of the rate paid to experienced roofers. They receive periodic raises as they master the skills of the trade.

Some roofers are members of United Union of Roofers, Waterproofers, and Allied Workers. Hourly wages and fringe benefits are generally higher for union workers.

Related Occupations

Roofers use shingles, tile, bitumen and gravel, single-ply plastic or rubber sheets, or other materials to protect and waterproof building surfaces. Workers in other occupations who cover surfaces with special materials for protection and decoration include:

Carpenters
Carpet, floor, and tile installers and finishers
Cement masons, concrete finishers, segmental pavers,
and terrazzo workers
Drywall and ceiling tile installers, tapers, plasterers,
and stucco masons
Sheet metal workers

Sources of Additional Information

For information about apprenticeships or job opportunities in roofing, contact local roofing contractors, a local chapter of the roofers union, a local joint union-management apprenticeship committee, or the nearest office of your State employment service or apprenticeship agency. You can also find information on the registered apprenticeship system with links to State apprenticeship programs on the U.S. Department of Labor's Web site at http://www.doleta.gov/atels_bat. Apprenticeship information is also available from the U.S. Department of Labor's toll-free helpline: 1 (877) 872-5627.

For information about the work of roofers, contact:

➤ National Roofing Contractors Association, 10255 W. Higgins Rd., Suite 600, Rosemont, IL 60018-5607. Internet: <http://www.nrca.net>

➤ United Union of Roofers, Waterproofers, and Allied Workers, 1660 L St. NW., Suite 800, Washington, DC 20036. Internet: <http://www.unionroofers.com>

For general information on apprenticeships and how to get them, see the *Occupational Outlook Quarterly* article "Apprenticeships: Career training, credentials—and a paycheck in your pocket," online at <http://www.bls.gov/opub/ooq/2002/summer/art01.pdf> and in print at many libraries and career centers.

The Occupational Information Network (O*NET) provides information on a wide range of occupational characteristics. Links to O*NET appear at the end of the Internet version of this occupational statement, accessible at <http://www.bls.gov/ooh/ocos212.htm>