

---

# Insulation Workers

---

(O\*NET 47-2131.00, 47-2132.00)

---

## Significant Points

- Workers must follow strict safety guidelines to protect themselves from insulating irritants.
- Most insulation workers learn their work informally on the job; others complete formal apprenticeship programs.
- Job opportunities are expected to be excellent.

## Nature of the Work

Properly insulated buildings reduce energy consumption by keeping heat in during the winter and out in the summer. Vats, tanks, vessels, boilers, steam and hot-water pipes, and refrigerated storage rooms also are insulated to prevent the wasteful loss of heat or cold and to prevent burns. Insulation also helps to reduce the noise that passes through walls and ceilings. Insulation workers install the materials used to insulate buildings and equipment.

Insulation workers cement, staple, wire, tape, or spray insulation. When covering a steam pipe, for example, insulation workers measure and cut sections of insulation to the proper length, stretch it open along a cut that runs the length of the material, and slip it over the pipe. They fasten the insulation with adhesive, staples, tape, or wire bands. Sometimes, they wrap a cover of aluminum, plastic, or canvas over the insulation and cement or band the cover in place. Insulation workers may screw on sheet metal around insulated pipes to protect the insulation from weather conditions or physical abuse.

When covering a wall or other flat surface, workers may use a hose to spray foam insulation onto a wire mesh that provides a rough surface to which the foam can cling and that adds strength to the finished surface. Workers may then install dry-wall or apply a final coat of plaster for a finished appearance.

In attics or exterior walls, workers may blow in loose-fill insulation. A helper feeds a machine with fiberglass, cellulose, or rock-wool insulation, while another worker blows the insulation with a compressor hose into the space being filled.

In new construction or on major renovations, insulation workers staple fiberglass or rock-wool batts to exterior walls and ceilings before drywall, paneling, or plaster walls are put in place. In making major renovations to old buildings or when putting new insulation around pipes and industrial machinery, insulation workers often must first remove the old insulation. In the past, asbestos—now known to cause cancer in humans—was used extensively in walls and ceilings and to cover pipes, boilers, and various industrial equipment. Because of this danger, U.S. Environmental Protection Agency regulations require that asbestos be removed before a building undergoes major renovations or is demolished. When asbestos is present, specially trained workers must remove it before insulation workers can install the new insulating materials. (See the statement on hazardous materials removal workers elsewhere in the *Handbook*.)

Insulation workers use common handtools, including trowels, brushes, knives, scissors, saws, pliers, and stapling guns.

They may use power saws to cut insulating materials, welding machines to join sheet metal or secure clamps, and compressors to blow or spray insulation.

**Work environment.** Insulation workers generally work indoors in residential and industrial settings. They spend most of the workday on their feet, either standing, bending, or kneeling. They also work from ladders or in confined spaces. Their work usually requires more coordination than strength. In industrial settings, these workers often insulate pipes and vessels at temperatures that may cause burns. Minute particles from insulation materials, especially when blown, can irritate the eyes, skin, and respiratory system. Workers must follow strict safety guidelines to protect themselves. They keep work areas well ventilated; wear protective suits, masks, and respirators; and take decontamination showers when necessary. Most insulation is applied after buildings are enclosed, so weather conditions have less effect on the employment of insulation workers than some other construction workers.

## Training, Other Qualifications, and Advancement

Most insulation workers learn their trade informally on the job, although some complete formal apprenticeship programs.

**Education and training.** Employers prefer to hire high school graduates. High school courses in blueprint reading, shop mathematics, science, sheet metal layout, woodworking, and general construction provide a helpful background.

Most new workers receive instruction and supervision from experienced insulation workers. Trainees begin with simple tasks, such as carrying insulation or holding material while it is fastened in place. On-the-job training can take up to 2 years, depending on the nature of the work, but most training is completed in 3 to 6 months. Learning to install insulation in homes generally requires less training than does learning to apply insulation in commercial and industrial settings. As they gain experience, trainees receive less supervision, more responsibility, and higher pay.

Trainees in formal apprenticeship programs receive in-depth instruction in all phases of insulation. Apprenticeships are generally offered by contractors that install and maintain industrial insulation. Apprenticeship programs may be provided by a joint committee of local insulation contractors and the local union of the International Association of Heat and Frost Insulators and Asbestos Workers, to which some insu-



*Insulation workers must follow strict safety guidelines to protect themselves.*

## Projections data from the National Employment Matrix

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016	Change, 2006-16	
				Number	Percent
Insulation workers.....	47-2130	61,000	66,000	5,200	8
Insulation workers, floor, ceiling, and wall.....	47-2131	32,000	35,000	2,700	8
Insulation workers, mechanical.....	47-2132	28,000	31,000	2,500	9

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*.

Insulation workers belong. Programs normally consist of 4 or 5 years of on-the-job training coupled with classroom instruction, and trainees must pass practical and written tests to demonstrate their knowledge of the trade.

**Licensure.** The Environmental Protection Agency offers mandatory certification for insulation workers who remove and handle asbestos.

**Other qualifications.** For entry-level jobs, insulation contractors prefer to hire workers who are in good physical condition and licensed to drive. Applicants seeking apprenticeship positions should have a high school diploma or its equivalent and be at least 18 years old. Supervisors and contractors, especially, need good communication skills to deal with clients and subcontractors.

**Certification and advancement.** A voluntary certification program has been developed by insulation contractor organizations to help workers prove their skills and knowledge of residential insulation. Certification in insulation of industrial settings is being developed. Workers need at least 6 months of experience before they can complete certification. The North American Insulation Manufacturer's Association also offers a certification for insulation energy appraisal.

Skilled insulation workers may advance to supervisor, shop superintendent, or insulation contract estimator, or they may set up their own insulation business.

For those who would like to advance, it is increasingly important to be able to relay instructions and safety precautions to workers in both English and Spanish because Spanish-speaking workers make up a large part of the construction workforce in many areas.

### Employment

Insulation workers held about 61,000 jobs in 2006. The construction industry employed 91 percent of workers; 53 percent work for drywall and insulation contractors. Other insulation workers held jobs in the Federal Government, in wholesale trade, and in shipbuilding and other manufacturing industries that have extensive installations for power, heating, and cooling. In less populated areas, carpenters, heating and air-conditioning installers or drywall installers may do insulation work.

### Job Outlook

Insulation workers should have excellent employment opportunities due to about average job growth coupled with the need to replace many workers who leave this occupation.

**Employment change.** Employment of insulation workers is expected to increase 8 percent during the 2006-16 decade, about as fast as the average for all occupations. Demand for

insulation workers will be spurred by the continuing need for energy efficient buildings and power plant construction, both of which will generate work in existing structures and new construction. Growth might be tempered as other workers—such as carpenters, heating and air-conditioning installers, or drywall installers—do some insulation work.

**Job prospects.** Job opportunities for insulation workers are expected to be excellent. In addition to opportunities created by job growth, there will be a need to replace many workers. The irritating nature of many insulation materials, combined with the often difficult working conditions, causes many insulation workers to leave the occupation each year. Job openings will also arise from the need to replace workers who retire or leave the labor force for other reasons.

Insulation workers in the construction industry may experience periods of unemployment because of the short duration of many construction projects and the cyclical nature of construction activity. Workers employed to perform industrial plant maintenance generally have more stable employment because maintenance and repair must be done continually.

### Earnings

In May 2006, median hourly earnings of wage and salary insulation workers, floor, ceiling, and wall were \$14.67. The middle 50 percent earned between \$11.26 and \$20.00. The lowest 10 percent earned less than \$9.25, and the highest 10 percent earned more than \$27.76. Median hourly earnings of insulation workers, mechanical were \$17.74. The middle 50 percent earned between \$13.55 and \$25.12. The lowest 10 percent earned less than \$10.51, and the highest 10 percent earned more than \$33.39. Median hourly earnings in the industries employing the largest numbers of insulation workers were:

Insulation workers, mechanical	
Building finishing contractors .....	\$18.69
Building equipment contractors.....	16.60
Insulation workers, floor, ceiling, and wall	
Building finishing contractors .....	\$14.53

Union workers tend to earn more than nonunion workers. Apprentices start at about one-half of the journey worker's wage. Insulation workers doing commercial and industrial work earn substantially more than those working in residential construction, which does not require as much skill.

### Related Occupations

Insulation workers combine their knowledge of insulation materials with the skills of cutting, fitting, and installing materi-

als. Workers in occupations involving similar skills include carpenters; carpet, floor, and tile installers and finishers; dry-wall installers, ceiling tile installers, and tapers; roofers; and sheet metal workers.

### Sources of Additional Information

For information about training programs or other work opportunities in this trade, contact a local insulation contractor, the nearest office of the State employment service or apprenticeship agency, or the following organization:

► National Insulation Association, 99 Canal Center Plaza, Suite 222, Alexandria, VA 22314.

Internet: <http://www.insulation.org>

For more information about residential insulation, contact:

► Insulation Contractors Association of America, 1321 Duke St., Suite 303, Alexandria, VA 22314.

Internet: <http://www.insulate.org>

You can also find information on the registered apprenticeships together with links to State apprenticeship programs on the U.S. Department of Labor's Web site: [http://www.doleta.gov/atels\\_bat](http://www.doleta.gov/atels_bat) Apprenticeship information is also available from the U.S. Department of Labor's toll free helpline: (877) 872-5627.

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.