

Respiratory Protection

OSHA 3079
2002 (Revised)



OSHA Occupational
Safety and Health
Administration

U.S. Department of Labor

This informational booklet provides a generic, non-exhaustive overview of a particular topic related to OSHA standards. It does not alter or determine compliance responsibilities in OSHA standards or the *Occupational Safety and Health Act of 1970*. Because interpretations and enforcement policy may change over time, you should consult current administrative interpretations and decisions by the Occupational Safety and Health Review Commission and the Courts for additional guidance on OSHA compliance requirements.

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Respiratory Protection



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Occupational Safety and Health Administration
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OSHA 3079
2002 (Revised)

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Respiratory Protection

What is a respirator?

A respirator is a protective device that covers the nose and mouth or the entire face or head to guard the wearer against hazardous atmospheres. Respirators may be:

- Tight-fitting—that is, half masks, which cover the mouth and nose and full facepieces that cover the face from the hairline to below the chin; or
- Loose-fitting, such as hoods or helmets that cover the head completely.

In addition, there are two major classes of respirators:

- Air-purifying, which remove contaminants from the air; and
- Atmosphere-supplying, which provide clean, breathable air from an uncontaminated source. As a general rule, atmosphere-supplying respirators are used for more hazardous exposures.

Why do employees need respirators?

When employees must work in environments with insufficient oxygen or where harmful dusts, fogs, smokes, mists, fumes, gases, vapors, or sprays are present, they need respirators. These health hazards may cause cancer, lung impairment, other diseases, or death.

Where toxic substances are present in the workplace and engineering controls are inadequate to reduce or eliminate them, respirators are necessary. Some atmosphere-supplying respirators can also be used to protect against oxygen-deficient atmospheres. Increased breathing rates, accelerated heartbeat, and impaired thinking or coordination occur more quickly in an oxygen-deficient or other hazardous atmosphere. Even a momentary loss of coordination can be devastating if it occurs while a worker is performing a potentially dangerous activity such as climbing a ladder.

When do employees need to wear respirators?

Employees need to wear respirators whenever engineering and work practice control measures are not adequate to prevent atmospheric contamination at the worksite. Strategies for preventing atmospheric contamination may include enclosing or confining the contaminant-producing operation, exhausting the contaminant, or substituting with less toxic materials.

Respirators have their limitations and are not a substitute for effective engineering and work practice controls. When it is not possible to use these controls to reduce airborne contaminants below their occupational exposure levels, such as during certain maintenance and repair operations, emergencies, or when engineering controls are being installed, respirator use may be the best or only

way to reduce worker exposure. In other cases, where work practices and engineering controls alone cannot reduce exposure levels to below the occupational exposure level, respirator use is essential.

Where respirators are required to protect worker health, specific procedures are necessary to ensure the equipment's effectiveness.

How can you ensure proper protection?

OSHA's respirator standard¹ requires employers to establish and maintain an effective respiratory protection program when employees must wear respirators to protect against workplace hazards. Different hazards require different respirators, and employees are responsible for wearing the appropriate respirator and complying with the respiratory protection program.

The standard contains requirements for program administration, worksite-specific procedures, respirator selection, employee training, fit testing, medical evaluation, and respirator use, cleaning, maintenance, and repair.

Employees must use respirators while effective engineering controls, if they are feasible, are being installed. If engineering controls are not feasible, employers must provide respirators and employees must wear them when necessary to protect their health. The employee's equipment must be properly selected, used, and maintained for a particular work environment and contaminant. In addition, employers must train employees in all aspects of the respiratory protection program.

¹ OSHA's regulations cover general, construction, and maritime industries. See *Title 29 of the Code of Federal Regulations (CFR)*, Part 1910.134; and the Compressed Gas Association's Commodity Specification G-7-1989, also referenced in 29 CFR Part 1910.134.

Procedures to Ensure Proper Protection

How do you develop an effective respiratory protection program?

The primary objective of the respiratory protection program is to prevent exposure to air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, vapors, or sprays, and thus to prevent occupational illness.

A program administrator must be responsible for the program. This person must know enough about respirators to supervise the program properly.

Larger plants or companies with industrial hygiene, in-house medical department, safety engineering, or fire prevention departments should administer the program in liaison with the program administrator. In smaller plants without specialists, an upper-level superintendent, foreman, or qualified person must serve as program administrator.

Any respirator program should stress thorough training of all respirator users. Employees must be aware that a respirator does not eliminate the hazard. If the respirator fails, the user will be overexposed to dangerous substances. To reduce the possibility of failure, the respirator must fit properly and be maintained in a clean and serviceable condition.

Employers and employees must understand the respirator's purpose and limitations. Users must not alter or remove the respirator even for a short time, even if it is uncomfortable.

An effective respirator program must cover the following factors:

- Written worksite specific procedures;
- Program evaluation;

- Selection of an appropriate respirator approved by the National Institute for Occupational Safety and Health (NIOSH);
- Training;
- Fit testing;
- Inspection, cleaning, maintenance, and storage;
- Medical evaluations;
- Work area surveillance; and
- Air quality standards.

Whenever OSHA standards or employers require respirator use, there must be a complete respiratory protection program. Employers must have written operating procedures to ensure that employees use the respirators safely and properly. Users must be familiar with these procedures and with the respirators available and their limitations.

In workplaces with no hazardous exposures, but where workers choose to use respirators voluntarily, certain written program elements may be necessary to prevent potential hazards associated with respirator use. Employers must evaluate whether respirator use itself may actually *harm* employees. If so, employers must medically evaluate employees and, if necessary, restrict respirator use, as well as comply with program elements. Employers must inform employees voluntarily using respirators of basic information in Appendix D of OSHA's respiratory protection standard.

Employers must evaluate the effectiveness of a company's respirator program regularly and modify the written operating procedure as necessary to reflect the evaluation results. A labor-management team may be effective in conducting these periodic evaluations.

How do you choose the correct respirator?

Choosing the right equipment involves:

- Determining what the hazard is and its extent,
- Considering user factors that affect respirator performance and reliability, and
- Selecting an appropriate NIOSH-certified respirator.

Equipment must be used in line with specifications accompanying the NIOSH certification.

When selecting respirators, employers must consider the chemical and physical properties of the contaminant, as well as the toxicity and concentration of the hazardous material and the amount of oxygen present. Other selection factors are nature and extent of the hazard, work rate, area to be covered, mobility, work requirements and conditions, as well as the limitations and characteristics of the available respirators.

Air-purifying respirators use filters or sorbents to remove harmful substances from the air. They range from simple disposable masks to sophisticated devices. They do not supply oxygen and must not be used in oxygen-deficient atmospheres or in other atmospheres that are immediately dangerous to life or health (IDLH).

Atmosphere-supplying respirators are designed to provide breathable air from a clean air source other than the surrounding contaminated work atmosphere. They include supplied-air respirators (SARs) and self-contained breathing apparatus (SCBA) units.

The time needed to perform a given task, including the time necessary to enter and leave a contaminated area, is an important factor in determining the type of respiratory

protection needed. For example, SCBAs, gas masks, or air-purifying chemical-cartridge respirators provide respiratory protection for relatively short periods. On the other hand, an atmosphere-supplying respirator that supplies breathable air from an air compressor through an air line can provide protection for extended periods.

If the total concentration of atmospheric particulates is low, particulate filter air-purifying respirators can provide protection for long periods without the need to replace the filter. Where there are higher concentrations of contaminants, however, an atmosphere-supplying respirator such as the positive-pressure SAR offers better protection for a longer period.

SARs eliminate the need for concern about filter breakthrough times, change schedules, or using end-of-service-life indicators (ESLI) for airborne toxic materials, factors that must be considered when using air-purifying respirators.

Respirators must not impair the worker's ability to see, hear, communicate, and move as necessary to perform the job safely. For example, atmosphere-supplying respirators may restrict movement and present other potential hazards. SARs with their trailing hoses can limit the area the wearer can cover and may present a hazard if the hose comes into contact with machinery. Similarly, a SCBA that includes a back-mounted, compressed-air cylinder is both large and heavy. This may restrict climbing and movement in tight places, and the added weight of the air cylinder presents an additional burden to the wearer.

Another factor to consider when using respirators is the air-supply rate. The wearer's work rate determines the volume of air breathed per minute. The volume of air supplied to meet the breathing requirements is very significant when using atmosphere-supplying respirators such as self-contained

and airline respirators that use cylinders because this volume determines their operating life.

The peak airflow rate also is important in the use of a constant-flow SAR. The air-supply rate should always be greater than the maximum amount of air being inhaled in order to maintain the respiratory enclosure under positive pressure.

Higher breathing resistance of air-purifying respirators under conditions of heavy work may cause the user breathing difficulty, particularly in hot, humid conditions. To avoid placing additional stress on the wearer, use the lightest respirator possible that presents the least breathing resistance.

SCBAs and some chemical canister respirators provide a warning of remaining service time. This may be a pressure gauge or timer with an audible alarm for SCBAs or a color ESLI on the cartridge or canister. The user should understand the operation and limitations of each type of warning device. For the many gas masks and chemical-cartridge respirators with no ESLI devices, the employer must establish and enforce a cartridge or canister change schedule. In addition, employees should begin each work shift with new canisters and cartridges.

What are specific respirator uses?

The following list presents a simplified version of characteristics and factors used for respirator selection. It does not specify the contaminant concentrations or particle size. Some OSHA substance-specific standards include more detailed information on respirator selection.

Hazard	Respirator
<i>Immediately dangerous to life or health (IDLH)²</i>	
Oxygen deficiency	Full-facepiece, pressure-demand SCBA certified for a minimum service life of 30 minutes. A combination full-facepiece, pressure-demand SAR with an auxiliary self-contained air supply.
Gas, vapor contaminants and other highly toxic air contaminants	Full-facepiece, pressure-demand SAR with an auxiliary self-contained air supply.
Contaminated atmospheres —for escape	Positive-pressure SCBA. Gas mask. Combination positive-pressure SAR with escape SCBA.
<i>Not immediately dangerous to life or health</i>	
Gas and vapor contaminants	Positive-pressure SAR. Gas mask. Chemical-cartridge or canister respirator.
Particulate contaminants	Positive-pressure SAR including abrasive blasting respirator. Powered air-purifying respirator equipped with high-efficiency filters. Any air-purifying respirator with a specific particulate filter.
Gaseous and particulate contaminants	Positive-pressure supplied-respirator. Gas mask. Chemical-cartridge respirator with mechanical filters.
Smoke and other fire-related contaminants	Positive-pressure SCBA.

² “Immediately dangerous to life or health” (IDLH) means an atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects, or would impair an individual’s ability to escape from a dangerous atmosphere.

Who needs to be trained?

Training is essential for correct respirator use. Employers must teach supervisors and workers how to properly select, use, and maintain respirators. All employees required to use respiratory protective equipment must receive instruction in the proper use of the equipment and its limitations. Employers should develop training programs based on the employee's education level and language background.

Training must be comprehensive enough for the employee to demonstrate a knowledge of the limitations and capabilities of the respirator, why the respirator is necessary, and how improper fit, usage, or maintenance can compromise the respirator.

Training must include an explanation of the following:

- Why respirator use is necessary;
- Nature of the respiratory hazard and consequences of not fitting, using, and maintaining the respirator properly;
- Reason(s) for selecting a particular type of respirator;
- Capabilities and limitations of the selected respirator;
- How to inspect, put on and remove, and check the seals of the respirator;
- Respirator maintenance and storage requirements;
- How to use the respirator effectively in emergency situations, including when the respirator malfunctions; and
- How to recognize medical signs and symptoms that may limit or prevent the effective use of the respirator.

Users should know that improper respirator use or maintenance may cause overexposure. They also should understand that continued use of poorly fitted and maintained respirators can cause chronic disease or death from overexposure to air contaminants.

How do you make sure the respirators fit properly?

Different types of respirators and even different brands of the same type of respirator have different fit characteristics. No one respirator will fit everyone. Some employees may be unable to get an adequate fit with certain respirator models of a particular type of respirator. This is why employers must provide a sufficient number of respirator models and sizes to ensure that every employee can select an acceptable respirator that fits properly.

Corrective eyeglasses worn by employees also present a problem when fitting respirators. Special mountings are available to hold corrective lenses inside full facepieces. A qualified individual must fit the facepiece and lenses to provide good vision, comfort, and proper sealing.

Tight-fitting respirators cannot provide proper protection without a tight seal between the facepiece and the wearer's face. Consequently, beards and other facial hair, the absence of normally worn dentures, facial deformities, or jewelry or head gear that projects under the facepiece seal can also seriously affect the fit of a facepiece. To ensure proper respiratory protection, check the facepiece each time you wear the respirator. You can do this by performing either a positive-pressure or negative-pressure user seal check. Detailed instructions for performing these user seal checks are in Appendix B-1 of the OSHA respiratory protection standard.

Fit testing is required for tight-fitting facepiece respirators. You can test the effectiveness of the fit of the facepiece two ways: qualitatively and quantitatively.

Qualitative fit testing involves the introduction of a harmless odoriferous or irritating substance into the breathing zone around the respirator being worn. If no odor or irritation is detected by the wearer, this indicates a proper fit.

Quantitative fit testing offers more accurate, detailed information on respirator fit. While the wearer performs exercises that could induce facepiece leakage, a fit testing instrument numerically measures the amount of leakage into the respirator. This testing can be done either by generating a test aerosol as a test atmosphere, using ambient aerosol as a test agent, or using controlled negative pressure to measure any leakage. Detailed instructions for performing qualitative and quantitative fit testing is contained in Appendix A of the OSHA respiratory protection standard.

How do you inspect and take care of respirators?

It is important to inspect all respirators for wear and tear before and after each use, giving special attention to rubber or plastic parts that can deteriorate or lose pliability. The facepiece, headband, valves, connecting tube, fittings, and cartridges, canisters or filters must be in good condition. A respirator inspection must include checking the tightness of the connections.

Users must inspect SCBAs at least monthly and ensure that air and oxygen cylinders are fully charged according to the manufacturer's instructions. The inspection should include a check of regulator and warning devices to ensure their proper function. Employers must keep records of inspection dates and findings.

Users should replace chemical cartridges and gas mask canisters as necessary to provide complete protection, following the manufacturer's recommendations. In addition, they should replace mechanical filters as necessary to avoid high resistance to breathing.

Only an experienced person is permitted to make repairs, using parts specifically designed for the respirator. This person must consult the manufacturer's instructions for any repair and no attempt should be made to repair or replace components or make adjustments or repairs beyond the manufacturer's recommendations.

The employer must ensure that respirators are cleaned and disinfected as often as necessary to keep them sanitary. In addition, the employer must ensure that emergency-use respirators are cleaned and disinfected immediately after each use.

Respirators should be washed in a detergent solution and then disinfected by immersing them in a sanitizing solution. Cleaner-sanitizers that effectively clean the respirator and contain a bactericidal agent are available commercially. The bactericidal agent frequently used is a quaternary ammonium compound. Strong cleaning and sanitizing agents and many solvents can damage rubber or plastic respirator parts. Use these materials with caution or after consultation with the respirator manufacturer.

Users must store respirators in a way that protects them against dust, sunlight, heat, extreme cold, excessive moisture, and damaging chemicals. When packed or stored, each respirator should be positioned to retain its natural configuration. Facepieces and exhalation valves should rest in a normal position to prevent the rubber or plastic from deforming.

Do you need to do medical evaluations?

Workers assigned to tasks that require respirator use must be physically able to perform the work while using the respirator. The local physician or licensed health care professional (LHCP) will determine what health and physical conditions are pertinent.

The medical evaluation can be performed by a physician or other LHCP by using a medical questionnaire or by a medical examination that provides the same information as the questionnaire provided in Appendix C of the OSHA standard. This evaluation must be done before the employee is fit tested and uses the respirator in the workplace. The employer must obtain a written recommendation from the LHCP for each employee's ability to wear a respirator. Additional medical evaluations must be provided whenever health-care professionals deem them appropriate.

How do you monitor work areas?

Employers must maintain surveillance of the work area conditions and the degree of worker exposure or stress—a combination of work rate, environmental conditions, and physiological burdens of wearing a respirator. Changes in operating procedures, temperature, air movement, humidity, and work practices may influence the concentration of a substance in the work area atmosphere. Employers must periodically monitor these factors as they affect air contaminant concentrations. In instances where work is of such short duration that it takes longer to do the test than the job, reasonable estimates of exposure are allowable.

In situations where the environment is or may be immediately dangerous to life or health, employers must ensure that one or more employees are located outside the dangerous environment. These employees must maintain visual, voice, or signal line communication with employees in the IDLH atmosphere.

In interior structural firefighting situations, employers must ensure that at least two employees enter the structure and remain in visual or voice contact with one another at all times. Also, at least two employees must be located outside the fire area to provide effective emergency rescue. All workers engaged in interior structural firefighting must use SCBA.

What equipment and air quality standards apply?

Respiratory protective devices must be approved by NIOSH for the contaminant or situation to which the employee is exposed.

Compressed air, compressed oxygen, liquid air, and liquid oxygen used for respiration must be of high purity. Oxygen must meet the requirements of the United States Pharmacopoeia for medical or breathable oxygen. Breathing air must meet at least the requirement for Grade D breathing air described in Compressed Gas Association (CGA) Commodity Specification G-7.1-1989. Compressed oxygen must not be used in open circuit SCBAs or SARs that have previously used compressed air. Oxygen concentrations greater than 23.5 percent must not be used with airline respirators unless the equipment is designed for oxygen service.

Employers must supply breathing air to respirators from cylinders or air compressors. For testing cylinders, see “Shipping Container Specifications of the Department of Transportation,” 49 *CFR* Part 178.

Employers must mark containers of breathing gas clearly and in accordance with NIOSH requirements, as described in 42 *CFR* Part 84. Further details on the sources of compressed air and its safe use can be found in the CGA pamphlet G-7.1-1989.

The compressor for supplying air must have the necessary safety devices and alarms. Compressors must be constructed and situated to prevent contaminated air from entering the air supply system and be equipped with suitable in-line, air-purifying sorbent beds and filters installed to ensure breathing air quality. If using an oil-lubricated compressor, ensure that it has a high-temperature or carbon monoxide alarm or both. If using only the high-temperature alarm, the employer must test the air from the compressor frequently for carbon monoxide.

Air-line couplings must be incompatible with outlets for other gas systems to prevent accidental servicing of air-line respirators with non-breathable gases or oxygen.

OSHA Assistance, Services, and Programs

How can OSHA help me?

OSHA can provide extensive help through a variety of programs, including assistance about safety and health programs, state plans, workplace consultations, voluntary protection programs, strategic partnerships, alliances, and training and education. An overall commitment to workplace safety and health can add value to your business, to your workplace, and to your life.

How does safety and health management system assistance help employers and employees?

Working in a safe and healthful environment can stimulate innovation and creativity and result in increased performance and higher productivity. The key to a safe and healthful work environment is a comprehensive safety and health management system.

OSHA has an electronic compliance assistance tool, or eTools, on its website that “walks” users through the steps required to develop a comprehensive safety and health program. The eTools are posted at www.osha.gov, and are based on guidelines that identify four general elements critical to a successful safety and health management system:

- Management leadership and employee involvement,
- Worksite analysis,
- Hazard prevention and control, and
- Safety and health training.

What are state programs?

The *Occupational Safety and Health Act of 1970 (OSH Act)* encourages states to develop and operate their own job safety and health plans. OSHA approves and monitors these plans and funds up to 50 percent of each program's operating costs. State plans must provide standards and enforcement programs, as well as voluntary compliance activities, that are at least as effective as Federal OSHA's.

Currently, 26 states and territories have their own plans. Twenty-three cover both private and public (state and local government) employees and three states, Connecticut, New Jersey, and New York, cover only the public sector. For more information on state plans, see the list at the end of this publication, or visit OSHA's website at www.osha.gov.

What is consultation assistance?

Consultation assistance is available on request to employers who want help establishing and maintaining a safe and healthful workplace. Funded largely by OSHA, the service is provided at no cost to small employers and is delivered by state authorities through professional safety and health consultants.

What is the Safety and Health Achievement Recognition Program (SHARP)?

Under the consultation program, certain exemplary employers may request participation in OSHA's Safety and Health Achievement Recognition Program (SHARP). Eligibility for participation includes, but is not limited to, receiving a full-service, comprehensive consultation visit, correcting all identified hazards, and developing an effective safety and health program management program.

Employers accepted into SHARP may receive an exemption from programmed inspections (not complaint or accident investigation inspections) for 1 year initially, or 2 years upon renewal. For more information about consultation assistance, see the list of consultation projects at the end of this publication.

What are the Voluntary Protection Programs (VPPs)?

Voluntary Protection Programs are designed to recognize outstanding achievements by companies that have developed and implemented effective safety and health management programs. There are three levels of VPPs: Star, Merit, and Demonstration. All are designed to achieve the following goals:

- Recognize employers that have successfully developed and implemented effective and comprehensive safety and health management programs;
- Encourage these employers to continuously improve their safety and health management programs;
- Motivate other employers to achieve excellent safety and health results in the same outstanding way; and
- Establish a cooperative relationship between employers, employees, and OSHA.

VPP participation can bring many benefits to employers and employees, including fewer worker fatalities, injuries, and illnesses; lost-workday case rates generally 50 percent below industry averages; and lower workers' compensation and other injury- and illness-related costs. In addition, many VPP sites report improved employee motivation to work safely, leading to a better quality of life at work; positive community recognition and interaction; further improvement

and revitalization of already-good safety and health programs; and a positive relationship with OSHA.

After a site applies for the program, OSHA reviews an employer's VPP application and conducts a VPP onsite evaluation to verify that the site's safety and health management programs are operating effectively. OSHA conducts onsite evaluations on a regular basis, annually for participants at the demonstration level, every 18 months for Merit, and every 3 to 5 years for Star. Once a year, all participants must send a copy of their most recent annual internal evaluation to their OSHA regional office. This evaluation must include the worksite's record of injuries and illnesses for the past year.

Sites participating in VPP are not scheduled for regular, programmed inspections. OSHA does, however, handle any employee complaints, serious accidents, or significant chemical releases that may occur at VPP sites according to routine enforcement procedures.

Additional information on VPP is available from OSHA national, regional, and area offices listed at the end of this booklet. Also, see "Cooperative Programs" on OSHA's website.

How can a partnership with OSHA improve worker safety and health?

OSHA has learned firsthand that voluntary, cooperative partnerships with employers, employees, and unions can be a useful alternative to traditional enforcement and an effective way to reduce worker deaths, injuries, and illnesses. This is especially true when a partnership leads to the development and implementation of a comprehensive workplace safety and health management program.

What is OSHA's Strategic Partnership Program (OSPP)?

OSHA Strategic Partnerships are agreements among labor, management, and government to improve workplace safety and health. These partnerships encourage, assist, and recognize the efforts of the partners to eliminate serious workplace hazards and achieve a high level of worker safety and health. Whereas OSHA's Consultation Program and VPP entail one-on-one relationships between OSHA and individual worksites, most strategic partnerships build cooperative relationships with groups of employers and employees.

There are two major types of OSPPs. Comprehensive partnerships focus on establishing comprehensive safety and health management systems at partnering worksites. Limited partnerships help identify and eliminate hazards associated with worker deaths, injuries, and illnesses, or have goals other than establishing comprehensive worksite safety and health programs.

For more information about this program, contact your nearest OSHA office or visit the agency's website.

What occupational safety and health training does OSHA offer?

The OSHA Training Institute in Arlington Heights, IL, provides basic and advanced training and education in safety and health for federal and state compliance officers, state consultants, other federal agency personnel, and private-sector employers, employees, and their representatives.

What is the OSHA Training Grant Program?

OSHA awards grants to nonprofit organizations to provide safety and health training and education to employers and workers in the workplace. Grants often focus on high risk activities or hazards or may help nonprofit organizations in training, education, and outreach.

OSHA expects each grantee to develop a program that addresses a safety and health topic named by OSHA, recruit workers and employers for the training, and conduct the training. Grantees are also expected to follow up with students to find out how they applied the training in their workplaces.

For more information contact OSHA Office of Training and Education, 2020 Arlington Heights Road, Arlington Heights, IL 60005; or call (847) 297-4810.

What other assistance materials does OSHA have available?

OSHA has a variety of materials and tools on its website at www.osha.gov. These include eTools such as Expert Advisors and Electronic Compliance Assistance Tools, information on specific health and safety topics, regulations, directives, publications, videos, and other information for employers and employees.

OSHA also has an extensive publications program. For a list of free or sales items, visit OSHA's website at www.osha.gov or contact the OSHA Publications Office, U.S. Department of Labor, 200 Constitution Avenue, NW, N-3101, Washington, DC 20210. Telephone (202) 693-1888 or fax to (202) 693-2498.

In addition, OSHA's CD-ROM includes standards, interpretations, directives, and more. It is available for sale from the U.S. Government Printing Office. To order, write to the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, or phone (202) 512-1800.

What do I do in case of an emergency or to file a complaint?

To report an emergency, file a complaint, or seek OSHA advice, assistance, or products, call (800) 321-OSHA or contact your nearest OSHA regional, area, state plan, or consultation office listed at the end of this publication. The teletypewriter (TTY) number is (877) 889-5627.

Employees can also file a complaint online and get more information on OSHA federal and state programs by visiting OSHA's website at www.osha.gov.

OSHA Regional and Area Office Directory

OSHA Regional Offices

Region I

(CT,* MA, ME, NH, RI, VT*)
JFK Federal Building, Room E340
Boston, MA 02203
(617) 565-9860

Region II

(NJ,* NY,* PR,* VI*)
201 Varick Street, Room 670
New York, NY 10014
(212) 337-2378

Region III

(DE, DC, MD,* PA,* VA,* WV)
The Curtis Center
170 S. Independence Mall West
Suite 740 West
Philadelphia, PA 19106-3309
(215) 861-4900

Region IV

(AL, FL, GA, KY,* MS, NC,*
SC,* TN*)
SNAF
61 Forsyth Street SW, Room 6T50
Atlanta, GA 30303
(404) 562-2300

Region V

(IL, IN,* MI,* MN,* OH, WI)
230 South Dearborn Street,
Room 3244
Chicago, IL 60604
(312) 353-2220

Region VI

(AR, LA, NM,* OK, TX)
525 Griffin Street, Room 602
Dallas, TX 75202
214) 767-4731 or 4736 x224

Region VII

(IA,* KS, MO, NE)
City Center Square
1100 Main Street, Suite 800
Kansas City, MO 64105
(816) 426-5861

Region VIII

(CO, MT, ND, SD, UT,* WY*)
1999 Broadway, Suite 1690
PO Box 46550
Denver, CO 80202-5716
(303) 844-1600

Region IX

(American Samoa, AZ,*
CA,* HI, NV,* Northern
Mariana Islands)
71 Stevenson Street, Room 420
San Francisco, CA 94105
(415) 975-4310

Region X

(AK,* ID, OR,* WA*)
1111 Third Avenue, Suite 715
Seattle, WA 98101-3212
(206) 553-5930

*These states and territories operate their own OSHA-approved job safety and health programs. The Connecticut, New Jersey, and New York plans cover public employees only. States with approved programs must have a standard that is identical to, or at least as effective as, the federal standard.

OSHA Area Offices

Anchorage, AK
(907) 271-5152

Birmingham, AL
(205) 731-1534

Mobile, AL
(251) 441-6131

Little Rock, AR
(501) 324-6291/5818

Phoenix, AZ
(602) 640-2348

Sacramento, CA
(916) 566-7471

San Diego, CA
(415) 975-4310

Denver, CO
(303) 844-5285

Greenwood Village, CO
(303) 843-4500

Bridgeport, CT
(203) 579-5581

Hartford, CT
(860) 240-3152

Wilmington, DE
(302) 573-6518

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(954) 424-0242

Jacksonville, FL
(904) 232-2895

Tampa, FL
(813) 626-1177

Savannah, GA
(912) 652-4393

Smyrna, GA
(770) 984-8700

Tucker, GA
(770) 493-6644/6742/8419

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(208) 321-2960

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Des Plaines, IL
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(630) 896-8700

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(316) 269-6644

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(502) 227-7024

Baton Rouge, LA
(225) 389-0474/0431

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(617) 565-6924

Methuen, MA
(617) 565-8110

Springfield, MA
(413) 785-0123

Linthicum, MD
(410) 865-2055/2056

Bangor, ME
(207) 941-8177

Portland, ME
(207) 780-3178

Lansing, MI
(517) 327-0904

Minneapolis, MN
(612) 664-5460

Kansas City, MO
(816) 483-9531

St. Louis, MO
(314) 425-4249

Jackson, MS
(601) 965-4606

Billings, MT
(406) 247-7494

Raleigh, NC
(919) 856-4770

Bismark, ND
(701) 250-4521

Omaha, NE
(402) 221-3182

Concord, NH
(603) 225-1629

Avenel, NJ
(732) 750-3270

Hasbrouck Heights, NJ
(201) 288-1700

Marlton, NJ
(856) 757-5181

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Bowmansville, NY
(716) 684-3891

New York, NY
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North Syracuse, NY
(315) 451-0808

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Westbury, NY
(516) 334-3344

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(513) 841-4132

Cleveland, OH
(216) 522-3818

Columbus, OH
(614) 469-5582

Toledo, OH
(419) 259-7542

Oklahoma City, OK
(405) 278-9560

Portland, OR
(503) 326-2251

Allentown, PA
(610) 776-0592

Erie, PA
(814) 833-5758

Harrisburg, PA
(717) 782-3902

Philadelphia, PA
(215) 597-4955

Pittsburgh, PA
(412) 395-4903

Wilkes-Barre, PA
(570) 826-6538

Guaynabo, PR
(787) 277-1560

Providence, RI
(401) 528-4669

Columbia, SC
(803) 765-5904

Nashville, TN
(615) 781-5423

Austin, TX
(512) 916-5783 (5788)

Corpus Christi, TX
(361) 888-3420

Dallas, TX
(214) 320-2400 (2558)

El Paso, TX
(915) 534-6251

Fort Worth, TX
(817) 428-2470
(817) 485-7647

Houston, TX
(281) 591-2438 (2787)

Houston, TX
(281) 286-0583/0584 (5922)

Lubbock, TX
(806) 472-7681 (7685)

Salt Lake City, UT
(801) 530-6901

Norfolk, VA
(757) 441-3820

Bellevue, WA
(206) 553-7520

Appleton, WI
(920) 734-4521

Eau Claire, WI
(715) 832-9019

Madison, WI
(608) 264-5388

Milwaukee, WI
(414) 297-3315

Charleston, WV
(304) 347-5937

OSHA-Approved Safety and Health Plans

Alaska Department of Labor and Workforce Development

Commissioner
(907) 465-2700
FAX: (907) 465-2784

Program Director
(907) 269-4904
FAX: (907) 269-4915

Industrial Commission of Arizona

Director, ICA
(602) 542-4411
FAX: (602) 542-1614

Program Director
(602) 542-5795
FAX: (602) 542-1614

California Department of Industrial Relations

Director
(415) 703-5050
FAX: (415) 703-5114

Chief
(415) 703-5100
FAX: (415) 703-5114

Manager, Cal/OSHA
Program Office
(415) 703-5177
FAX: (415) 703-5114

Connecticut Department of Labor

Commissioner
(860) 566-5123
FAX: (860) 566-1520

Conn-OSHA Director
(860) 566-4550
FAX: (860) 566-6916

Hawaii Department of Labor and Industrial Relations

Director
(808) 586-8844
FAX: (808) 586-9099

Administrator
(808) 586-9116
FAX: (808) 586-9104

Indiana Department of Labor

Commissioner
(317) 232-2378
FAX: (317) 233-3790

Deputy Commissioner
(317) 232-3325
FAX: (317) 233-3790

Iowa Division of Labor

Commissioner
(515) 281-6432
FAX: (515) 281-4698

Administrator
(515) 281-3469
FAX: (515) 281-7995

Kentucky Labor Cabinet

Secretary
(502) 564-3070
FAX: (502) 564-5387

Federal/State Coordinator
(502) 564-3070, x240
FAX: (502) 564-1682

**Maryland Division
of Labor and Industry**

Commissioner
(410) 767-2999
FAX: (410) 767-2300

Deputy Commissioner
(410) 767-2992
FAX: 767-2003

Assistant Commissioner, MOSH
(410) 767-2215
FAX: 767-2003

**Michigan Department of
Consumer and Industry Services**

Director
(517) 322-1814
FAX: (517) 322-1775

**Minnesota Department
of Labor and Industry**

Commissioner
(651) 296-2342
FAX: (651) 282-5405

Assistant Commissioner
(651) 296-6529
FAX: (651) 282-5293

Administrative Director,
OSHA Management Team
(651) 282-5772
FAX: (651) 297-2527

**Nevada Division
of Industrial Relations**

Administrator
(775) 687-3032
FAX: (775) 687-6305

Chief Administrative Officer
(702) 486-9044
FAX: (702) 990-0358

[Las Vegas (702) 687-5240]

**New Jersey Department
of Labor**

Commissioner
(609) 292-2975
FAX: (609) 633-9271

Assistant Commissioner
(609) 292-2313
FAX: (609) 292-1314

Program Director, PEOSH
(609) 292-3923
FAX: (609) 292-4409

**New Mexico Environment
Department**

Secretary
(505) 827-2850
FAX: (505) 827-2836

Chief
(505) 827-4230
FAX: (505) 827-4422

New York Department of Labor

Acting Commissioner
(518) 457-2741
FAX: (518) 457-6908

Division Director
(518) 457-3518
FAX: (518) 457-6908

**North Carolina Department
of Labor**

Commissioner (919) 807-2900
FAX: (919) 807-2855

Deputy Commissioner,
OSH Director
(919) 807-2861
FAX: (919) 807-2855

OSH Assistant Director
(919) 807-2863
FAX: (919) 807-2856

**Oregon Occupational Safety
and Health Division**

Administrator
(503) 378-3272
FAX: (503) 947-7461

Deputy Administrator for Policy
(503) 378-3272
FAX: (503) 947-7461

Deputy Administrator for
Operations
(503) 378-3272
FAX: (503) 947-7461

**Puerto Rico Department of
Labor and Human Resources**

Secretary
(787) 754-2119
FAX: (787) 753-9550

Assistant Secretary for
Occupational Safety and Health
(787) 756-1100/1106, 754-2171
FAX: (787) 767-6051

Deputy Director for
Occupational Safety and Health
(787) 756-1100, 1106/754-2188
FAX: (787) 767-6051

**South Carolina Department of
Labor, Licensing, and Regulation**

Director
(803) 896-4300
FAX: (803) 896-4393

Program Director
(803) 734-9644
FAX: (803) 734-9772

Tennessee Department of Labor

Commissioner
(615) 741-2582
FAX: (615) 741-5078

Acting Program Director
(615) 741-2793
FAX: (615) 741-3325

Utah Labor Commission

Commissioner
(801) 530-6901
FAX: (801) 530-7906

Administrator
(801) 530-6898
FAX: (801) 530-6390

**Vermont Department
of Labor and Industry**

Commissioner
(802) 828-2288
FAX: (802) 828-2748

Project Manager
(802) 828-2765
FAX: (802) 828-2195

**Virgin Islands Department
of Labor**

Acting Commissioner
(340) 773-1990
FAX: (340) 773-1858

Program Director
(340) 772-1315
FAX: (340) 772-4323

**Virginia Department
of Labor and Industry**

Commissioner
(804) 786-2377
FAX: (804) 371-6524

Director, Office of Legal Support
(804) 786-9873
FAX: (804) 786-8418

**Washington Department
of Labor and Industries**

Director
(360) 902-4200
FAX: (360) 902-4202

Assistant Director
[PO Box 44600]
(360) 902-5495
FAX: (360) 902-5529

Program Manager,
Federal-State Operations
(360) 902-5430
FAX: (360) 902-5529

**Wyoming Department
of Employment**

Safety Administrator
(307) 777-7786
FAX: (307) 777-3646

OSHA Consultation Projects

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(907) 269-4957

Tuscaloosa, AL
(205) 348-3033

Little Rock, AR
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Phoenix, AZ
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Sacramento, CA
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Fort Collins, CO
(970) 491-6151

Wethersfield, CT
(860) 566-4550

Washington, DC
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Wilmington, DE
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Tampa, FL
(813) 974-9962

Atlanta, GA
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9-1-(671) 475-1101

Honolulu, HI
(808) 586-9100

Des Moines, IA
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Boise, ID
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Chicago, IL
(312) 814-2337

Indianapolis, IN
(317) 232-2688

Topeka, KS
(785) 296-2251

Frankfort, KY
(502) 564-6895

Baton Rouge, LA
(225) 342-9601

West Newton, MA
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Laurel, MD
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Augusta, ME
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Lansing, MI
(517) 322-1809

Saint Paul, MN
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Jefferson City, MO
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(406) 444-6418

Raleigh, NC
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Lincoln, NE
(402) 471-4717

Concord, NH
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Trenton, NJ
(609) 292-3923

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(401) 222-2438

Columbia, SC
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Brookings, SD
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(615) 741-7036

Austin, TX
(512) 804-4640

Salt Lake City, UT
(801) 530-6901

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(802) 828-2765

Richmond, VA
(804) 786-6359

Christiansted St. Croix, VI
(809) 772-1315

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(360) 902-5638

Madison, WI
(608) 266-9383

Waukesha, WI
(262) 523-3044

Charleston, WV
(304) 558-7890

Cheyenne, WY
(307) 777-7786



**Occupational Safety
and Health Administration**

U.S. Department of Labor