Breathe Right!
Oregon OSHA’s guide to
developing a respiratory protection program
for small-business owners and managers
About this illustrations

**Background.** The *Black Veil respirator*. Black veiling covering the nose and mouth held a pad of wool waste soaked in a chemical solution of sodium hyposulphite, sodium carbonate, glycerine, and water. This type of respirator was used by British troops in 1915 for protection against phosgene, chloropicrin, and chlorine gas attacks.

**Foreground.** A modern *half-mask air-purifying respirator*. A tight-fitting elastomeric mask covering the nose and mouth forms a protective barrier between the respiratory tract and air contaminants. Air-purifying filters, cartridges, or canisters are designed to protect against specific types of particulates, gases, or vapors.

No cost access to respiratory protection information for small-business including Oregon’s rules, letters of interpretations, program directives, fact sheets, hazard alerts, publications and education can be accessed through the following:

**www.orosha.org/subjects/respiratory_protection.html**
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About this document

Breathe Right! is an Oregon OSHA Standards and Technical Resources Section publication.

Thanks to the following individuals:

• Patricia Young: Oregon OSHA, layout and design
• Phillip Fehrenbacher: illustrations
• Mark Peterson: DCBS Communications, editing and proofing

Questions or comments? We’d like to hear from you.

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Topic categories: respiratory protection
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**Introduction**

**The air we breathe**

In H.G. Wells’ classic novel, *The War of the Worlds*, invading Martians wreak havoc among helpless humans until a common form of bacteria does them in. Most likely, the bacteria was in the air along with gases, smoke, and dust raised along the Martians’ path of destruction.

During a normal day, the air we breathe is mostly oxygen and nitrogen — although it still contains trace amounts of harmful gases, smoke, vapors, and dust produced by us and Mother Nature. Fortunately, our lungs have a series of mechanical and biological barriers that keep such contaminants from harming us. But healthy lungs aren’t invincible. With repeated overexposure to toxins, these protective barriers break down, resulting in irritation, discomfort, or disease. Unfortunately, we may not even be aware of the damage until it’s too late to recover.

**Breathing in the workplace**

Black lung, farmer’s lung, asbestosis, silicosis — You’ve probably heard of these work-related respiratory diseases and know of their consequences. These are just a few of the medical conditions that result when workers breathe contaminated air. Protecting workers can be difficult, however, because there are so many types of contaminants and there is no single method for controlling them in all workplaces.

If you’re a small-business owner or manager who wants basic information about protecting your employees from respiratory hazards, this guide will get you started. Part One summarizes respiratory hazards, how to evaluate the hazards, and how to control them.

If you think your employees may need to use respirators for protection, parts Two and Three describe what you should know before your employees use them. You’ll learn about the basic types of respirators and what you need to do to develop an effective respiratory protection program – the essential requirement of Oregon OSHA’s *respiratory protection standard, 1910.134*. This standard specifies what you must do to ensure that your employees use respirators safely and responsibly. You’ll find references to 1910.134 and the respiratory-protection program requirement in many other Oregon OSHA rules for protecting workers from toxic and hazardous substances.
About respiratory hazards

Respiratory hazards include harmful substances and below-normal concentrations of oxygen in the air we breathe. What makes a substance harmful depends on its toxicity, chemical state, physical form, concentration, and the period of time one is exposed. Examples include particulates, gases and vapors, and biological organisms. Harmful effects are wide ranging and may occur immediately or take years to develop.

When the oxygen concentration in normal breathing air drops below 19.5 percent by volume, the air becomes oxygen deficient — a significant concern for those who work in confined spaces. Harmful effects include impaired thinking and coordination, unconsciousness, and death.

Protection from respiratory hazards

Protect yourself and your co-workers from respiratory hazards by doing the following:

• Identify the respiratory hazards in your workplace.
• Evaluate employees’ exposures to each hazard.
• Use the evaluation information to eliminate the hazards or to lower employees’ exposures to safe levels.

This three-step process, summarized below, is called a hazard analysis or hazard evaluation.

Identify the respiratory hazards in your workplace

• Consider the sources of respiratory hazards such as production processes, work tasks, raw materials, and end products. Each could expose employees to a respiratory hazard. What raw materials are used in a production process? What are the intermediate products and the byproducts of each process? Do employees use equipment or handle substances that could expose them to respiratory hazards?
• Review safety data sheets (SDS) and chemical inventories to identify chemicals that may expose employees to respiratory hazards.
• Talk to employees. Do they have safety or health concerns about certain products, materials, or machines? Have they reported signs or symptoms of respiratory conditions?
Evaluate employees’ exposures to each hazard

After you’ve identified respiratory hazards, evaluate employees’ exposures to determine whether they are exposed at unsafe levels. Evaluate exposures by measuring them or estimate them with data from previous exposure measurements. Three examples:

- Measure the exposures of individual employees by sampling their breathing air. The procedure – called personal exposure monitoring – is the most accurate way to evaluate exposure levels.
- Sample the air at specific locations – called area monitoring – to estimate exposures affecting groups of employees. This method is useful when employees move about and may not always be near a hazard’s source.
- Use representative exposure data from industry studies, trade associations, or product manufacturers to estimate exposures affecting groups of employees. You must be able to show that the data are based on conditions similar to those that exist in your workplace.

Immediately dangerous to life and health (IDLH) refers to an atmospheric concentration of a toxic, corrosive, or asphyxiating substance that poses an immediate threat to life, causes irreversible health effects, or interferes with one’s ability to escape from a dangerous atmosphere. If employees may be exposed to such substances and you’re unable to evaluate their exposures you must consider the exposure immediately dangerous to life and health.
Eliminate respiratory hazards or lower employees’ exposures to safe levels

If employees are exposed to respiratory hazards at unsafe levels, you’ll need to determine how to protect them from overexposure. Is there a way to eliminate the hazard — by using another production process or materials that aren’t hazardous, for example?

If you can’t eliminate a respiratory hazard, use engineering controls to lower exposures to safe levels. Such controls “engineer” or physically change the work environment so the air is safe to breathe. They’re the most effective way to protect employees. Examples of engineering controls are isolating a production process so that the employees are not exposed and installing an exhaust hood to remove air contaminants.

Employees can use respirators for protection from respiratory hazards only when engineering controls are not feasible or will not reduce their exposures to safe levels.

Need help identifying respiratory hazards, evaluating exposures, or using appropriate engineering controls? Your workers’ compensation insurance carrier or an Oregon OSHA consultant may be able to help.
About respirators

A respirator protects against respiratory hazards by removing specific air contaminants from the ambient (surrounding) air or by supplying breathable air from a safe source. Respirators that remove contaminants from the ambient air are called air-purifying respirators. Respirators that supply air from a safe source other than the ambient air are called atmosphere-supplying respirators.

The part of a respirator that forms a protective barrier between the user’s respiratory tract and air contaminants is called an inlet covering. Most inlet coverings can be classified as either tight-fitting or loose-fitting.

A tight-fitting inlet covering, also called a facepiece or mask, forms a complete seal on the user’s face. The facepiece is usually made of a molded flexible elastomer — an elastic substance that resembles rubber — and is available in quarter-mask, half-mask, and full-facepiece types.

A loose-fitting inlet covering typically covers the user’s head and may extend over the shoulders; a flexible tube usually supplies breathable air to the covering. Loose-fitting coverings can be used only with atmosphere-supplying respirators or powered air-purifying respirators (PAPRs).

Properly selected and used, respirators protect workers from hazards but don’t eliminate hazards. If the respirator fails or is inappropriate for a particular task, the user risks exposure. A respirator can also stress a worker’s heart and lungs. Breathing through a tight-fitting air-purifying respirator, for example, is harder than breathing ambient air and an atmosphere-supplying self-contained breathing apparatus (SCBA) can increase the user’s heart rate because of its weight.

Those with lung diseases or asthma or who have trouble breathing should never use a respirator without the approval of a professionally licensed health care provider (PLHCP). Those who have vision problems or who are claustrophobic may also be unable to use some respirators.

Effective respiratory protection ensures that workers are medically able to use respirators, that their respirators fit properly, and that they know how to use and care for their respirators.
Air-purifying respirators

The air-purifying respirator (APR) has an air-purifying filter, cartridge, or canister that removes specific air contaminants, such as particulates, gases, or vapors. Selecting an appropriate filter, cartridge, or canister can be complicated because there are many types, and none protect against all contaminants. That’s why it’s necessary to identify each respiratory hazard in your workplace before you select a respirator.

Air-purifying respirators are available in non-powered and powered types. The user operates the non-powered type simply by breathing. A powered air-purifying respirator has a blower that forces ambient air through one or more filters attached to an inlet covering. The powered type is easier to breathe through than the non-powered type but needs a fully charged battery to work properly. Non-powered and powered air-purifying respirators can remove particles, gas and vapor, or both.

Are dust masks respirators?

Only dust masks certified by NIOSH are considered respirators and are covered under 1910.134 rules. A NIOSH-certified dust mask – called a filtering facepiece – is a tight-fitting, negative pressure, particulate respirator. The particulate filter is the facepiece. Dust masks that don’t have NIOSH certification are not respirators.
Atmosphere-supplying respirators

An atmosphere-supplying respirator supplies the user with breathable air from a source other than the ambient air so filters are not necessary. There are three types of atmosphere-supplying respirators:

- **Supplied-air respirator (SAR)**. The supplied-air respirator supplies breathable air from a stationary source, such as a compressor, separated from the user. Breathable air is supplied to the inlet covering of the respirator through a flexible hose.

- **Self-contained breathing apparatus (SCBA)**. As its name implies, this respirator isn’t connected to a stationary source of breathable air. The user carries the air supply.

- **Combination supplied-air with auxiliary SCBA**. This respirator is generally used to escape from a hazardous atmosphere.

You’ll also find references to demand respirators and pressure-demand respirators in 1910.134. A demand respirator admits breathing air to a facepiece only when the user inhales, creating a negative pressure inside the facepiece. A pressure-demand respirator is similar, except it has an air-flow-regulating valve that maintains a positive pressure inside the facepiece during inhalation and exhalation.

All atmosphere-supplying respirators protect users from toxic particulates, gases and vapors, and oxygen-deficient atmospheres. Each type serves a specific purpose. Before you select an atmosphere-supplying respirator, know the respiratory hazards a user will encounter, the user’s exposure levels, and what the user will be doing while wearing the respirator.

The following page summarizes common air-purifying and atmosphere-supplying respirators.
Types of respirators: a summary

Air-purifying respirators

Particulate-removing respirator
Also called an aerosol-removing respirator. Protects against particulates such as dusts, mists, and fumes. Does not protect against gases, vapors, or oxygen deficiency. Equipped with permanent or replaceable filters that remove particulates from the air.

Three filter types are available: N-series protects against solid and water-based particulates such as nuisance dust; R-series protects against any particulates, including oil-based materials. Workers may generally use these filters for one eight-hour shift if oil aerosols are present. P-series filters protect against any particulates, including oil-based materials, without a time limit for users. Each filter is available in three levels of efficiency: 95, 99, and 100. The 100 level is the current rating for what was called the HEPA (high efficiency particulate air) filter.

Gas-and-vapor-removing respirator
Protects against specific gases and vapors. Equipped with cartridges or canisters containing sorbents that remove specific air contaminants. Sorbents are granular, porous materials that purify inhaled air; activated carbon from coconut shells are often used as sorbent material. Sorbents eventually break down and must be replaced before the respirator user detects a chemical smell, taste, or irritation.

Combination aerosol filter/gas or vapor-removing respirator
Combines a particle-removing filter with a chemical cartridge or canister for removing specific gases or vapors.

Powered air-purifying respirator
Uses a powered blower to move air through a filter, chemical cartridge, or canister that removes the contaminants. The purified air then passes through the respirator inlet covering to the wearer. Generally, these respirators can maintain a positive pressure within the inlet covering, reducing the chance of contaminants leaking into the facepiece.

Atmosphere-supplying respirators

Supplied-air respirator
Supplies breathing air through a hose connected to the user’s facepiece or a head enclosure and to an independent compressor or compressed air cylinder; the user doesn’t carry the air supply. If the air supply fails, the user may have to remove the respirator to leave the work area. For this reason, supplied-air respirators should be used only in non-IDLH atmospheres or in environments in which the user can escape without a respirator.

Self-contained breathing apparatus (SCBA)
Protects the user in non-IDLH and IDLH atmospheres because the user carries the breathing air. There are two types of self-contained breathing apparatus: closed-circuit SCBA and open-circuit SCBA. Closed-circuit SCBAs recycle the user’s breathing air and open-circuit SCBAs release exhaled air into the surrounding environment. Each type has advantages and disadvantages in terms of weight, duration of use, complexity, and cost.

Combination self-contained breathing apparatus and air-line respirator
Combines a supplied-air respirator with an auxiliary self-contained air supply. Can be used in IDLH atmospheres. Allows the user to switch to the auxiliary self-contained air supply if the supplied-air respirator fails. Useful for extended work in hazardous atmospheres such as confined spaces.

Combination air-purifying and atmosphere-supplying respirators
Combines a supplied-air respirator with an auxiliary air-purifying attachment that protects the user if the supplied-air respirator fails. Can be used in an air-purifying or an atmosphere-supplying mode. Can only be used in atmospheres for which the air-purifying element is approved and can’t be used in IDLH atmospheres.
Federal OSHA has developed Assigned Protection Factors to assist you in deciding which respirator is appropriate for the airborne hazards to which employees are exposed. Multiply the numbers in the table below by the PELs of the chemicals of concern, and that will tell you the maximum exposure levels that the respirators can protect against.

**The half-mask category includes filtering facepieces.**

For helmets and hoods, you can only use the factor of 1,000 when the manufacturer certifies that it performs at that level. Otherwise, you can only use the factor of 25.

None of these fit factors apply to escape respirators. Escape respirators can only be used to escape from an area, not to enter.

<table>
<thead>
<tr>
<th>Type of respirator</th>
<th>Quarter mask</th>
<th>Half mask</th>
<th>Full facepiece</th>
<th>Helmet/hood</th>
<th>Loose-fitting facepiece</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Air-Purifying Respirator</td>
<td>5</td>
<td>10</td>
<td>50</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>2. Powered Air-Purifying Respirator (PAPR)</td>
<td>—</td>
<td>50</td>
<td>1,000</td>
<td>25/1,000</td>
<td>25</td>
</tr>
<tr>
<td>3. Supplied-Air Respirator (SAR) or Airline Respirator</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Demand mode</td>
<td>—</td>
<td>10</td>
<td>50</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>• Continuous flow mode</td>
<td>—</td>
<td>50</td>
<td>1,000</td>
<td>25/1,000</td>
<td>25</td>
</tr>
<tr>
<td>• Pressure-demand or other positive-pressure mode</td>
<td>—</td>
<td>50</td>
<td>1,000</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>4. Self-Contained Breathing Apparatus (SCBA)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Demand mode</td>
<td>—</td>
<td>10</td>
<td>50</td>
<td>50</td>
<td>—</td>
</tr>
<tr>
<td>• Pressure-demand or other positive-pressure mode (e.g., open/closed circuit)</td>
<td>—</td>
<td>—</td>
<td>10,000</td>
<td>10,000</td>
<td>—</td>
</tr>
</tbody>
</table>
Developing your respiratory protection program

You can’t just hand out respirators and expect employees to use them properly. If respirators are necessary to protect your employees, you must have a written program that describes how you will accomplish the following:

■ Select appropriate respirators for employees.
■ Conduct medical evaluations for employees who use respirators.
■ Fit-test employees who use tight-fitting respirators.
■ Ensure employees use respirators correctly during regular activities and during emergencies.
■ Ensure respirators are clean and properly maintained.
■ Ensure air-quality in atmosphere-supplying respirators.
■ Train employees to protect themselves from respiratory hazards.
■ Evaluate your program’s effectiveness.

These are the critical elements of a respiratory protection program; an effective program ensures that employees are medically able to use respirators, that their respirators fit properly, and that they know how to use and care for them. You can develop an effective program by following the steps described in this section.

Forms that you can use to create your own written program are available at www.osha.org/publications/forms under Respiratory protection.
Appoint an administrator to implement your respiratory protection program

The administrator is responsible for developing, managing, and evaluating your respiratory-protection program. The administrator can delegate parts of the program to other qualified employees — such as respirator fit-testing and maintenance — but must oversee their activities.

What training does the administrator need?

1910.134 doesn’t specify qualifications for the administrator but says the administrator must have “appropriate training that is commensurate with the complexity of the program.” Your program administrator must know how to identify, evaluate, and control the respiratory hazards at your workplace.

An example

A workplace has three employees; each does occasional sanding and grinding tasks during the workday and is exposed to wood dust. Due to the nature of their work, dust-control devices aren’t effective and the employees must use air-purifying respirators for protection. The program administrator must develop an appropriate respirator program for the workplace — a fairly easy job because only three employees are exposed to a minor hazard and they can be protected with relatively simple respirators.

However, if the employees did a variety of tasks that exposed them to toxic chemicals, biological hazards, and oxygen-deficient atmospheres, the administrator would need to know how to protect the employees from all of the hazards — a job for a trained safety professional.

When does the administrator need to implement the respiratory-protection program?

All parts of the program must be in effect before any employee uses a respirator.
Develop procedures for selecting respirators

Only when respiratory hazards can’t be eliminated should you consider protecting employees with respirators. If respirators are necessary, you must ensure they are appropriate for the tasks the employees perform and that they fit the employees.

■ Before you select respirators, you need to identify the respiratory hazards in your workplace and evaluate employees’ exposure levels. (See About respiratory hazards, Page 7.)

Selecting respirators for atmospheres that aren’t immediately dangerous to life or health

Those who work in atmospheres that aren’t immediately dangerous to their life or health can use air-purifying respirators or atmosphere-supplying respirators. Recall that air-purifying respirators have an air-purifying filter, cartridge, or canister that removes specific air contaminants. Atmosphere-supplying respirators provide breathable air from a source other than the ambient atmosphere. (See About respirators, Page 10.) Table 2 summarizes the options.
Table 2: Respirators for atmospheres that aren’t immediately dangerous to life or health

<table>
<thead>
<tr>
<th>Respirator</th>
<th>For particulate protection</th>
<th>For gas and vapor protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air-purifying</td>
<td>The respirator must be certified by NIOSH for protection against particulates under 42 CFR Part 84 (the NIOSH certification program for respirators). Select a respirator based on an employee’s exposure, severity of the inhalation hazard, air-particulate concentration, and the availability of oxygen.</td>
<td>The respirator must have an end-of-service-life indicator (ESLI) or your workplace must have an effective change schedule for appropriate canisters and cartridges. Select a respirator based on the hazard’s chemical composition, physical state, air-contaminant concentration, and the availability of oxygen.</td>
</tr>
<tr>
<td>Atmosphere-supplying</td>
<td>Select a respirator based on an employee’s exposure, severity of the inhalation hazard, air-particulate concentration, and the availability of oxygen.</td>
<td>Select a respirator based on the hazard’s chemical composition, physical state, air-contaminant concentration, and the availability of oxygen.</td>
</tr>
</tbody>
</table>

Selecting respirators for atmospheres that are immediately dangerous to life or health (IDLH)

Those who work in atmospheres that pose an immediate threat to their life or health or impair their ability to escape must use one of the following types of respirators:

- Full-facepiece pressure-demand self-contained breathing apparatus (SCBA).
- Combination full-facepiece pressure-demand supplied-air respirator with auxiliary self-contained air supply.

There must be at least one trained rescue person outside the IDLH atmosphere to respond to emergencies. That person must have a positive-pressure SCBA or supplied-air respirator with auxiliary SCBA and rescue retrieval equipment.

Those who fight interior structural fires must have at least one other person with them and at least two rescuers waiting for them in a safe area.
Selecting respirators: narrowing the options

You’ve given me general information for selecting respirators. But how do I select specific respirators for my employees?

Selecting specific respirators takes time and goes beyond the scope of this guide but isn’t difficult if you’ve identified the respiratory hazards in your workplace and evaluated employee exposure levels.

Most respirator suppliers and manufacturers will help you select appropriate respirators. Federal OSHA includes an easy-to-use compliance assistance “e-tool” for selecting specific respirators on its website at www.osha.gov. You can also get help from your workers’ compensation insurance carrier and from Oregon OSHA if you request a consultation.

Provide medical evaluations for employees who use respirators

Before employees use respirators, they must have confidential medical evaluations to ensure that their safety or health will not be at risk. A physician or other licensed health-care professional (PLHCP) must do the evaluation at no cost to the employee. The evaluation must be based on the questionnaire in Part A of Appendix C to 1910.134. The PLHCP can examine the employee or evaluate the employee’s written responses to the questionnaire in Appendix C, but the determination must be based on information obtained from answers to the questionnaire.

You must also provide the PLHCP with the following information for the evaluation:

• The type and weight of respirator that the employee will use
• How long and how frequently the employee will use the respirator
• How much physical work the employee will do while using the respirator
• Other personal protective equipment the employee will use
• The temperature and humidity of the working environment
• A copy of your respirator program and a copy of 1910.134
**Follow-up evaluations**

A follow-up medical evaluation is required for the following reasons:

- The employee reports medical signs or symptoms related to respirator use.
- The PLHCP, a supervisor, or the program administrator recommends a re-evaluation.
- Fit-test or other program information indicates a need for re-evaluation.
- When changes in the workplace increase respiratory stress on an employee.

**The PLHCP’s medical determination**

Make sure the PLHCP sends you a written determination of the medical evaluation results – an employee can’t use a respirator until you receive one. The determination will tell you the following:

- Whether the employee is medically able to use a respirator
- Any restrictions on the employee’s use of the respirator
- The need for follow-up medical evaluations
- Verification that the PLHCP has given the employee a copy of the written determination.

**Who makes the final determination?**

Employers, you’re responsible for making the final decision about an employee’s ability to use a respirator. The PLHCP’s medical determination is an important factor that you should consider in making the decision.

Keep the PLHCP’s written determination in the employee’s confidential file. All other information regarding the medical evaluation is strictly confidential and is restricted to the employee and the PLHCP.
Fit test employees who use respirators with tight-fitting facepieces

Human faces vary in size and shape and so do respirator facepieces. To protect an employee, a tight-fitting facepiece needs to fit so the face-to-facepiece seal doesn’t leak. You can use one of two fit-test methods to determine the correct fit for most tight-fitting facepieces. (Table 3 shows acceptable fit-test methods for typical respirator facepieces.)

- **Qualitative fit test (QLFT).** This inexpensive, easy-to-perform test relies on the respirator user’s response to a test agent such as banana oil (isoamyl acetate), saccharin, or irritant smoke. If the user detects the agent while wearing the respirator, the facepiece-to-face seal is not successful and the test fails. A user who can’t successfully complete the test must be tested with another facepiece make, size, or brand.

- **Quantitative fit test (QNFT).** An instrument samples the concentration of a test agent in the ambient atmosphere and inside the user’s facepiece. With this information a quantitative fit factor can be calculated that indicates how well the facepiece fits the user; the higher the number the better the fit. This method is more accurate than a qualitative fit test but also more expensive; it requires special equipment, and a trained person must conduct the test.

Employees who use respirators with tight-fitting facepieces must be fit tested with a respirator of the same make, model, style, and size. They must be tested annually and whenever they change facepiece models, styles, or sizes, or if they have a physiological change that affects the facepiece-to-face seal.

Those who report that their respirators don’t fit properly can select another tight-fitting facepiece; however, the replacement must also be fit tested. Those who fail a fit test must select another facepiece and be tested again.

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**Conducting the fit test**

Regardless of the method you use, you must conduct the test using a specific protocol. A protocol is a series of steps a fit tester follows to ensure that the test is done properly. Appendix A to 1910.134 includes protocols for qualitative and quantitative fit tests. The fit tester must follow these protocols when fit testing employees who use tight-fitting facepieces.

**About fit factors**

The fit factor — a quantitative measure of how well a respirator fits a user — is the ratio of the concentration of a contaminant in the ambient air to the concentration inside the facepiece.
### Table 3: Acceptable fit-test methods for typical respirator facepieces

<table>
<thead>
<tr>
<th>Respirator/facepiece</th>
<th>Qualitative fit test ¹</th>
<th>Quantitative fit test ²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Half-face negative-pressure air-purifying respirator (including dust masks)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Full-face negative-pressure air-purifying respirator used in atmospheres up to 10 times the PEL</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Full-face negative-pressure air-purifying respirator used in atmospheres greater than 10 times the PEL</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Powered air-purifying respirators (PAPRs)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Supplied-air respirators (SARs) or self-contained breathing apparatus (SCBA) used in the negative-pressure (demand) mode</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Supplied-air respirators (SARs) or self-contained breathing apparatus (SCBA) used in the positive-pressure (pressure demand) mode</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>SCBA used for structural firefighting (positive pressure)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>SCBA and SARs for atmospheres immediately dangerous to life and health (IDLH), positive pressure</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Mouthpiece/nose clamp respirators</td>
<td>Fit testing not required</td>
<td></td>
</tr>
<tr>
<td>Loose-fitting respirators (e.g., hoods and helmets)</td>
<td>Fit testing not required</td>
<td></td>
</tr>
</tbody>
</table>

¹ Qualitative fit tests (QLFT) cannot be used for negative pressure APRs in atmospheres greater than 10 times the PEL.

² Quantitative fit tests (QNFT) must achieve a fit factor of at least a 100 for a tight-fitting half mask and at least 500 for a tight-fitting full facepiece.

- Follow the fit-test procedures in 1910.134, Appendix A, regardless of the test method that you use.
Develop procedures for using respirators during regular activities and during emergencies

Your respiratory protection program must have written procedures to ensure that employees will use their respirators properly during their routine jobs and during emergencies. Those procedures must accomplish the following:

- Prevent conditions that could cause a tight-fitting facepiece to leak.
- Ensure that employees leave work areas before removing their respirators.
- Ensure that employees’ respirators operate effectively throughout their work shifts.
- Protect employees who enter IDLH environments or do interior structural firefighting.

Preventing conditions that could cause a tight-fitting facepiece to leak

Employees can’t use respirators with tight-fitting facepieces if they have facial hair or any other condition – including eyeglasses or personal protective equipment – that interferes with the sealing surface of the respirator or with the valve function.

Employees must also perform a seal check – a simple procedure that determines if a respirator has an effective face-to-facepiece seal – each time they put on a tight-fitting respirator. They must follow the procedure in 1910.134, Appendix B-1 (summarized at left) or the respirator manufacturer’s instructions.

Remember that a seal check is different than a fit test, which is a method for determining that a facepiece fits the user correctly.

How to check the seal of tight-fitting respirators

You can use either of the following methods.

Positive-pressure check:
1. Block the exhalation valve cover with the palm of your hand.
2. Exhale gently into the facepiece, creating a slight positive pressure.
3. If you can feel air leaking under the facepiece, reposition the facepiece and repeat steps 1 and 2 until you have an effective seal.

Negative-pressure check:
1. Cover the inlet openings of the cartridges or canisters with palms of your hands and inhale gently so that the facepiece collapses.
2. Hold your breath for about 10 seconds. The seal is effective if the facepiece stays collapsed.
3. If the facepiece expands or you can feel air leaking under the facepiece, reposition it and repeat steps 1 and 2.
Ensuring that employees leave work areas before removing their respirators

When employees are using respirators, they must leave their work areas for the following reasons:

• To wash their faces or their respirator facepieces
• When they detect vapor or gas, changes in breathing resistance, or leakage of the facepiece
• To replace the respirator or the filter, cartridge, or canister elements

If a respirator isn’t working properly, it must be replaced or repaired before the employee returns to the work area.

Ensuring that respirators operate effectively throughout the work shift

Employees must be protected from respiratory hazards regardless of their tasks or work environments. Respirators should remain comfortable and must work effectively with other personal protective equipment.

Protecting employees who enter IDLH environments or do interior structural firefighting

Anyone who works in an IDLH environment must use a full-facepiece pressure-demand self-contained breathing apparatus (SCBA) or a combination full-facepiece pressure-demand supplied-air respirator with auxiliary self-contained air supply.

At least one trained rescue person must stay outside the IDLH atmosphere to respond to emergencies. That person must have a positive-pressure SCBA or supplied-air respirator with auxiliary SCBA and rescue retrieval equipment.

Those who fight interior structural fires must have at least one other person with them and at least two rescuers must wait for them in a safe area.
Provide employees who use respirators voluntarily with the information in 1910.134, Appendix D

When it’s not necessary for employees to use respirators, they can use them voluntarily, provided you permit them to do so and their health or safety isn’t affected. An employee who asks to use a respirator voluntarily must be medically able to use that respirator, must know how to use and maintain it, and must be provided with the information in 1910.134, Appendix D. You can provide the employee with the information in written form or verbally. Table 4 summarizes the requirements.

<table>
<thead>
<tr>
<th>Program element</th>
<th>Filtering facepieces (dust masks)</th>
<th>Other air-purifying respirators and atmosphere-supplying respirators*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written respiratory protection program</td>
<td>Not required</td>
<td>Required</td>
</tr>
<tr>
<td>Medical evaluation</td>
<td>Not required</td>
<td>Required</td>
</tr>
<tr>
<td>Fit testing</td>
<td>Not required</td>
<td>Not required</td>
</tr>
<tr>
<td>Annual training</td>
<td>Not required</td>
<td>Not required</td>
</tr>
<tr>
<td>1910.134, Appendix D</td>
<td>Required</td>
<td>Required</td>
</tr>
<tr>
<td>Inspection, cleaning, or maintenance</td>
<td>Required</td>
<td>Required</td>
</tr>
</tbody>
</table>

*Includes elastomeric negative-pressure air-purifying respirators, powered air-purifying respirators, and supplied-air respirators.
Train employees who you require to use respirators

If you require employees to use respirators, they must be trained before they use them for the first time. You can choose the trainer and determine the training format; however, the training content must include the following:

- Why the respirators are required
- Why respirators must fit correctly and be properly maintained
- The capabilities and limitations of the respirators
- How to use the respirators in emergencies and how to respond if the respirator fails
- How to inspect, maintain, and store the respirators
- How to seal-check tight-fitting facepieces
- Medical symptoms, such as dizziness or shortness of breath, that may limit the effectiveness of the respirators
- The general requirements of your respiratory-protection program

New employees who have been trained within the past 12 months — by a former employer, for example — and who can show that they know the above topics are exempt from initial training.

Retraining is required at least annually — sooner if respiratory hazards change or if employees switch to another type of respirator. Employees who don’t understand how to use or properly care for their respirators must also be retrained.

Training is not necessary for those who use respirators voluntarily.
**Make sure respirators are clean, sanitary, and properly maintained**

Employees’ respirators must be clean and in good working order. They can clean and maintain their equipment or you can have it serviced for them. Those who do the cleaning and maintenance must be properly trained.

- Any respirator shared with a co-worker must be cleaned and disinfected before the co-worker uses it.
- A respirator must be inspected for damage before it’s used and whenever it’s cleaned. The facepiece must fit correctly and all parts must be in good working order. Defective respirators must be discarded or repaired by an appropriately trained person.
- Respirators used for emergencies must be inspected at least monthly. Document each inspection date.
- Employees must store their respirators so that the facepieces and valves are not deformed, and in a place free from dust, sunlight, extreme temperatures, and moisture.

Table 5 summarizes the schedule for cleaning, inspecting, and storing respirators. Appendix B-2 to 1910.134 includes the correct procedure for cleaning respirators.
<table>
<thead>
<tr>
<th>Situation/use</th>
<th>Cleaning and disinfecting</th>
<th>Inspecting</th>
<th>Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal use</td>
<td>Clean and disinfect as often as necessary to keep sanitary.</td>
<td>Inspect before each use and during cleaning.</td>
<td>Store safe from contamination; ensure that valves and facepieces aren’t deformed.</td>
</tr>
<tr>
<td>Multiple users</td>
<td>Clean and disinfect before another worker uses it.</td>
<td>Inspect before each use and during cleaning.</td>
<td>Store safe from contamination/ensure that valves and facepieces aren’t deformed.</td>
</tr>
<tr>
<td>Emergency use</td>
<td>Clean and disinfect after each use.</td>
<td>Inspect at least monthly, and in accordance with manufacturers’ recommendations. Inspect escape-only respirators before using them in the workplace. Identify for emergency use only.</td>
<td>Keep readily accessible. Store safe from contamination/ensure that valves and facepieces aren’t deformed.</td>
</tr>
<tr>
<td>Training and fit testing</td>
<td>Clean and disinfect after each use.</td>
<td>Inspect before each use and during cleaning.</td>
<td>Store free from contamination/ensure that valves and facepieces aren’t deformed.</td>
</tr>
</tbody>
</table>

Note: Appendix B-2, 1910.134 includes the correct procedure for cleaning respirators.
Identify respirator filters, cartridges, and canisters

Make sure that each respirator filter, cartridge, and canister has a NIOSH-approval label. Keep the label legible; don't remove or deface it. The color-coded label identifies the protection provided by the respirator and informs a user that the respirator has an appropriate filter. Color coding helps users select the correct filters for their respirators.

Example of a NIOSH-approval label

<table>
<thead>
<tr>
<th>TC.</th>
<th>PROTECTION 1</th>
<th>FACEPIECE</th>
<th>FILTER</th>
<th>CAUTIONS AND LIMITATIONS 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HALO 1000</td>
<td>N100</td>
<td>P95</td>
<td></td>
</tr>
<tr>
<td>64A-00X</td>
<td>N100</td>
<td>X</td>
<td>X</td>
<td>ABCJLMNO</td>
</tr>
<tr>
<td>64A-00Y</td>
<td>P95</td>
<td>X</td>
<td>X</td>
<td>ABCJLMNO</td>
</tr>
</tbody>
</table>

1. PROTECTION

| N100-Particulate Filter (99.97% filter efficiency level) is effective against particulate aerosols free of oil. Time use restrictions may apply | P95-Particulate Filter (95% filter efficiency level) is effective against particulate aerosols. |

2. CAUTIONS AND LIMITATIONS

A—Not for use in atmospheres containing less than 19.5% oxygen.
B—Not for use in atmospheres immediately dangerous to life or health.
C—Do not exceed maximum use concentrations established by regulatory standards.
J—Failure to use and maintain this product properly could result in injury or death.
M—All approved respirators shall be selected, fitted, used, and maintained in accordance with NIOSHA, OSHA, and other applicable regulations.
N—Never substitute, modify, add, or omit parts. Use only exact replacement parts in the configuration specified by the manufacturer.
O—Refer to user instructions and/or maintenance manuals for information about use and maintenance of these respirators.
**Use high quality breathing air for atmosphere-supplying respirators**

Compressed air, compressed oxygen, liquid air, and liquid oxygen used for breathing air must meet specific standards, described below. You can rely on certificates of analysis from suppliers to ensure that breathing air is high quality. If you produce breathing air from a compressor, you must follow specific requirements [see 1910.134(i)(5)-(7)] for the location of the compressor, moisture content of ambient air, carbon monoxide level, and filter change dates.

- Compressed and liquid oxygen used for breathing must meet standards set by the United States Pharmacopoeia (U.S.P.)
- Compressed air must meet the Type 1-Grade D breathing air requirements described in ANSI/Compressed Gas Association Commodity Specification for Air, G-7.1-1989.
- Compressed oxygen can’t be used in atmosphere-supplying respirators that have previously used compressed air.
- Oxygen concentrations greater than 23.5 percent must be used only in equipment designed specifically for oxygen service and distribution.
- Cylinders that supply breathing air must meet specific maintenance, air quality, and moisture content requirements.
- Compressors must meet specific requirements for air quality, moisture content, and carbon monoxide level, and must display a tag showing the most recent sorbent bed and filter change date.
- Breathing-air couplings must not fit outlets for nonbreathable air.
- Breathing-gas containers must be marked in accordance with the NIOSH certification program for respirators, 42 CFR Part 84.
3: Your respiratory protection program

Keep records of medical evaluations and fit-testing results

Maintain a file of your employees’ medical evaluations and fit-test results and keep a current copy of your respiratory protection program. Each fit-test record must identify the fit-test method; the respirator make, model, and size; the test date; the test results; and the name of the employee tested. Employees may review only their own medical evaluation and fit-test records.

- Keep medical evaluation records for 30 years after employees’ termination dates. Medical records of those who work less than one year need not be retained if they are given to employees upon termination. (For more information, see 1910.1020, Access to employee exposure and medical records.)

- Keep fit-test records for respirator users until their next fit tests.

Evaluate your program to make sure it’s effective

Periodically review each of the written elements of your respirator program:

- Procedures for selecting respirators
- Provisions for medical evaluations
- Fit-testing procedures
- Procedures for using respirators during regular activities and during emergencies
- Procedures for maintaining respirators
- Procedures for ensuring air quality in atmosphere-supplying respirators
- Provisions for training employees about respiratory protection

You don’t need to do evaluations on a fixed schedule — do them frequently enough to keep the program current and to ensure that written procedures are effective.

Observing how employees use their respirators and listening to their concerns are also important in evaluating the program. Do employees use and maintain their respirators correctly? Do their respirators fit? Are their respirators appropriate for their work tasks and environments? Do they have concerns about the program?

Evaluate the written elements to ensure they’re effective; update or change them, if necessary.
Other information

- Written program for respiratory protection
- Respiratory protection rules for Oregon workplaces
- Terms and concepts defined
- Oregon OSHA sources and contact information
Written program for respiratory protection

An effective written program is more than an exercise in paperwork. It protects workers from respiratory hazards, shows commitment to maintaining a safe, healthful workplace, and strengthens safe work practices. You can use Oregon OSHA’s respiratory protection forms to create your own written program.
Respiratory protection rules

The following Oregon OSHA rules include requirements for protecting workers from respiratory hazards and cover most Oregon workplaces. Rules in bold are the primary requirements for protecting workers who use respirators.

General industries

1910.134 Respiratory Protection

1910.94 Ventilation
1910.111 Storage and handling of anhydrous ammonia
1910.120 Hazardous waste operations and emergency response
1910.156 Fire brigades
1910.252 Welding, cutting, and brazing general requirements
1910.261 Pulp, paper, and paperboard mills
1910.272 Grain handling facilities
437-002-0107 Spray finishing
437-002-0122 Dipping and coating
437-002-0146 Permit-required confined spaces
437-002-0182 Oregon rules for fire fighters
437-002-0287 Toxic preservative coatings
437-002-0312 Oregon rules for pulp, paper, and paperboard mills
Subdivision 2/Z: Toxic and hazardous substances

Construction

1926.103 Respiratory Protection

1926.57 Ventilation
1926.60 Methylenedianiline (MDA)
1926.62 Lead
1926.65 Hazardous waste operations and emergency response
1926.353 Ventilation and protection in welding, cutting, and heating
1926.354 Welding, cutting and heating in way of preservative coatings
1926.651 Specific excavation requirements
1926.800 Underground construction
1926.1101 Asbestos
1926.1127 Cadmium
1926.1152 Methylene chloride
437-003-1000 Oregon rules for air contaminants
4: Other information
— Respiratory protection rules for Oregon workplaces

Forest activities

7/D 437-007-0345, Respiratory protection

437-007-0350 Respiratory protection when machines are operated
Terms and concepts defined

1910.134, Appendix A
mandatory fit-testing procedures.

1910.134, Appendix B-1
mandatory user seal-check procedures.

1910.134, Appendix B-2
mandatory respirator cleaning procedures.

1910.134, Appendix C
mandatory Respirator Medical Evaluation Questionnaire.

1910.134, Appendix D
information for employees who ask to use respirators voluntarily.

air contaminant
particulate matter including dusts, fumes, gases, mists, smoke, or vapors.

administrative/work practice controls
hazard-control methods that don't eliminate hazards but minimize exposure levels so that workers aren't harmed.

air-purifying respirator
a respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through an air-purifying element.

ambient
within a surrounding area or environment.

area monitoring
measurement of the level of contaminants within a general area.

assigned protection factor
a number that expresses expected level of protection that would be provided by a properly functioning respirator or class of respirators to correctly fitted and trained users.

atmosphere-supplying respirator
a respirator that supplies the user with breathable air from a source independent of the ambient atmosphere.

biological organism
bacteria, viruses, fungi, and other living organisms that can cause acute and chronic infections such as Legionnaires’ Disease. Examples: animal products (dander, excreta).
4: Other information  
— Terms and concepts defined

**cartridge/canister**  
a respirator component containing a filter, sorbent, or catalyst that removes specific air contaminants.

**closed circuit SCBA**  
a type of self-contained breathing apparatus that “recycles” exhaled air into breathable oxygen.

**demand respirator**  
a type of atmosphere-supplying respirator that admits breathing air to a facepiece only when the user inhales, creating a negative pressure inside the facepiece.

**dusts and fibers**  
solid particles that are formed or generated from solid materials through mechanical processes such as crushing, grinding, drilling, abrading, or blasting. Examples: lead, silica, and asbestos.

**dust mask (filtering facepiece)**  
a negative pressure particulate respirator with a filter as an integral part of the facepiece or with the entire facepiece composed of the filtering medium.

**elastomer**  
an elastic substance occurring naturally as rubber or produced synthetically as butyl rubber or neoprene.

**engineering controls**  
equipment or processes designed to control respiratory hazards so that contaminated air is safe to breathe.

**facepiece**  
a tight-fitting enclosure that fits over the face and forms a protective barrier between the user’s respiratory tract and the ambient air.

**filter**  
a respirator component that removes solid or liquid particles (aerosols) from the air.

**fit factor**  
the ratio of the concentration of a contaminant in the environment to the concentration inside the mask. A quantitative measure of how well a respirator protects the user.

**fume**  
particles that are formed when a metal or other solid vaporizes and the molecules condense (or solidify) in cool air. Examples: metal fumes from smelting or welding. Fumes also may be formed from processes such as plastic injection or extrusion molding.
gas
individual molecules in the air at room temperature. Examples: welding gases, such as acetylene and nitrogen, and carbon monoxide produced from internal combustion engines.

hazard analysis
(also: hazard evaluation) a systematic process for collecting information on hazards in a workplace.

immediately dangerous to life and health (IDLH)
refers to any atmosphere that poses an immediate threat to a worker’s life, would cause irreversible adverse health effects, or would impair the worker’s ability to escape.

inlet covering
the part of a respirator that forms a protective barrier between the user’s respiratory tract and an air-purifying device or breathing-air source (or both). May be a facepiece, helmet, hood, suit, or a mouthpiece respirator with nose clamp.

loose-fitting covering
an inlet covering that doesn’t form a complete seal and may cover the user’s head or extend over the shoulders.

mist
liquid droplets suspended in the air. Examples: oil mist produced from lubricants used in metal cutting operations, acid mists from electroplating, and paint spray mist from spraying operations.

NIOSH
National Institute for Occupational Safety and Health. Federal agency that conducts research and makes recommendations to prevent worker injury and illness. www.cdc.gov/niosh

NIOSH certification program for respirators
requirements in 42 CFR 84 for testing and certifying non-powered, air-purifying, particulate-filter respirators.

n-series
the designation for a respirator filter that protects against solid and water-based particulates such as nuisance dust. N-series filters are available in three levels of efficiency: N95, N99, and N100; the higher the number, the less filter breakthrough.

open circuit SCBA
a type of self-contained breathing apparatus that releases exhaled air into the surrounding environment rather than recirculating it.
Oregon rules for air contaminants describes methods for determining exposure limits for specific air contaminants.

Oxygen-deficient atmosphere an atmosphere that has less than 19.5 percent oxygen by volume.

Particulates microscopic airborne particles such as dusts, fibers, fumes, mists, soot, and smoke.

Permissible exposure limit (PEL) the exposure, inhalation, or dermal exposure limits specified in 1910 Subdivision 2G (Occupational Health and Environmental Controls) and 1910 Subdivision 2Z (Toxic and Hazardous Substances).

Oregon OSHA PELs establish the maximum level of a specific contaminant that a worker can be exposed to, averaged over an eight-hour workday or over a specified portion of a workday.

Personal monitoring measurement of an individual’s exposure to contaminants with personal monitors or sample collection equipment.

Personal protective equipment (PPE) protective clothing or equipment worn by a worker; includes respirators and all other types of respiratory devices.

Physician or other professionally licensed health care professional (PLHCP) a person licensed to provide respirator medical evaluations or examinations. Any health professional who qualifies as a PLHCP can perform a medical evaluation/examination. “Qualifies” means that the medical examination or evaluation procedures are permitted by the PLHCP’s state medical licensing board.

Powered air-purifying respirator a type of air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.

Pressure-demand respirator similar to a demand respirator, but has an airflow regulating valve that maintains a positive pressure inside the facepiece as the user inhales and exhales.

P-series the designation for a respirator filter that protects against any particulates, including oil-based materials, with no specific time limit. These filters are available in three levels of efficiency: P95, P99, and P100.
respiratory hazard
any harmful substance in the air you breathe.

respiratory protection standard, 29 CFR 1910.134
applies to Oregon general industry, shipyards, marine terminals, longshoring, and construction workplaces. Specifies what employers must do to ensure that their employees use respirators safely and responsibly.

r-series
the designation for a respirator filter that protects against any particulates, including oil-based materials. Users of R-series filters are generally limited to one eight-hour shift, if oil aerosols are present. These filters are available in three levels of efficiency: R95, R99, and R100; the higher the number, the less filter breakthrough.

safety data sheet (SDS)
written or printed information covering a hazardous chemical, prepared in accordance with Oregon OSHA’s hazard communication requirements (Division 2/Z, 1910.1200)

self-contained breathing apparatus (SCBA)
a type of atmosphere-supplying respirator that isn’t connected to a stationary source of breathable air. The user carries the air supply.

sorbent
granular, porous material that purifies inhaled air; carbon and coconut are common sorbents.

supplied-air respirator (SAR)
a respirator that uses breathable air supplied through a flexible hose from a stationary source, such as a compressor, isolated from the user.

tight-fitting facepiece
an inlet covering that forms a complete seal with the user’s face.

time-weighted average (TWA)
data determined from an air-monitoring sample and averaged over a period of time, usually eight hours.

user seal check
a set of procedures performed by the respirator user to determine if the respirator has an effective face-to-facepiece seal.

vapor
the gaseous form of substances that are normally in the solid or liquid state at room temperature and pressure. They are formed by evaporation. Most solvents produce vapors. Examples: toluene and methylene chloride.
## Oregon OSHA Services

Oregon OSHA offers a wide variety of safety and health services to employers and employees:

### Appeals

**503-947-7426; 800-922-2689; admin.web@state.or.us**

- Provides the opportunity for employers to hold informal meetings with Oregon OSHA on concerns about workplace safety and health.
- Discusses Oregon OSHA’s requirements and clarifies workplace safety or health violations.
- Discusses abatement dates and negotiates settlement agreements to resolve disputed citations.

### Conferences

**503-378-3272; 888-292-5247, Option 1; oregon.conferences@state.or.us**

- Co-hosts conferences throughout Oregon that enable employees and employers to learn and share ideas with local and nationally recognized safety and health professionals.

### Consultative Services

**503-378-3272; 800-922-2689; consult.web@state.or.us**

- Offers no-cost, on-site safety and health assistance to help Oregon employers recognize and correct workplace safety and health problems.
- Provides consultations in the areas of safety, industrial hygiene, ergonomics, occupational safety and health programs, assistance to new businesses, the Safety and Health Achievement Recognition Program (SHARP), and the Voluntary Protection Program (VPP).

### Enforcement

**503-378-3272; 800-922-2689; enforce.web@state.or.us**

- Offers pre-job conferences for mobile employers in industries such as logging and construction.
- Inspects places of employment for occupational safety and health hazards and investigates workplace complaints and accidents.
- Provides abatement assistance to employers who have received citations and provides compliance and technical assistance by phone.

### Public Education

**503-947-7443; 888-292-5247, Option 2; ed.web@state.or.us**

- Provides workshops and materials covering management of basic safety and health programs, safety committees, accident investigation, technical topics, and job safety analysis.
Standards and Technical Resources

503-378-3272; 800-922-2689; tech.web@state.or.us

• Develops, interprets, and gives technical advice on Oregon OSHA’s safety and health rules.
• Publishes safe-practices guides, pamphlets, and other materials for employers and employees
• Manages the Oregon OSHA Resource Center, which offers safety videos, books, periodicals, and research assistance for employers and employees.

Need more information? Call your nearest Oregon OSHA office.

Salem Central Office
350 Winter St. NE, Rm. 430
Salem, OR 97301-3882

Phone: 503-378-3272
Toll-free: 800-922-2689
Fax: 503-947-7461
en Español: 800-843-8086
Web site: www.orosha.org

Bend
Red Oaks Square
1230 NE Third St., Ste. A-115
Bend, OR 97701-4374
541-388-6066
Consultation: 541-388-6068

Eugene
1140 Willagillespie, Ste. 42
Eugene, OR 97401-2101
541-686-7562
Consultation: 541-686-7913

Medford
1840 Barnett Road, Ste. D
Medford, OR 97504-8250
541-776-6030
Consultation: 541-776-6016

Pendleton
200 SE Hailey Ave.
Pendleton, OR 97801-3056
541-276-9175
Consultation: 541-276-2353

Portland
1750 NW Naito Parkway, Ste. 112
Portland, OR 97209-2533
503-229-5910
Consultation: 503-229-6193

Salem
1340 Tandem Ave. NE, Ste. 160
Salem, OR 97301
503-378-3274
Consultation: 503-373-7819