RESPIRATORY PROTECTION

When ventilation or other engineering controls are not adequate to keep the air safe, a respirator will protect you.

WHERE ARE THE REGULATIONS?

The Occupational Safety and Health Administration (OSHA) regulates the use of respirators in general industry, construction, and other industries. The regulation is at 29 CFR 1910.134 if needed as a reference

RESPIRATORY PROTECTION PROGRAM

When respirators are required, the department will have a worksite-specific respiratory protection program. The program includes:

- Procedures for selecting respirators.
- Medical evaluations.
- Fit testing for tight-fitting respirators.
- Procedures for proper use of respirators.
- Schedules and procedures for cleaning, disinfecting, storing, inspecting, repairing, discarding, and otherwise maintaining respirators.
- Procedures on safe air quality for atmosphere-supplying respirators.
- Training in respiratory hazards.
- Training in respirator use, maintenance, and the limitations of respirators.
- A procedure to make sure the program is effective.

If your employer allows you to wear a respirator on a volunteer basis (when the contaminants are at safe levels), the program only includes provisions for medical evaluations, cleaning, storage, and maintenance. (No program is needed if only disposable dust masks are used on a volunteer basis.)

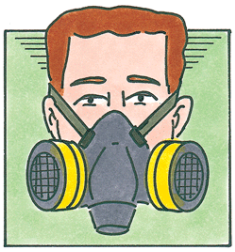
WHO NEEDS TO WEAR A RESPIRATOR?

You can't always see, smell, or taste the dust, smoke, mist, fumes, sprays, vapors, or gases that can be hazardous to your health. Your supervisor will assist in determining when respirators are needed in the workplace.

WHAT TYPES OF RESPIRATORS ARE AVAILABLE?

There are two respirator types: air-purifying and atmosphere-supplying.

Air-purifying



These respirators remove the contaminants from the air as you breathe. There must be enough oxygen in the air when using an air-purifying respirator. Typically, the respirator has a tight-fitting face piece. As you inhale, a "negative pressure" suction inside of the face piece forces the outside air through the respirator's cleaning elements before you breathe it. You must use a filter, cartridge, or canister that is approved for the dust, mist, fume, aerosol, chemical vapor, or gas that you are exposed to.

Air-purifying respirators have limits on how long they will protect you. Filter media and sorbents get clogged or saturated as they are used. Follow your facility's cartridge or filter change schedule. The filters or cartridges can be used up before you notice a smell or taste inside of the respirator.

Warning: Not all types of hazardous substances can be safely removed by air-purifying respirators. In these cases, you'll need an atmosphere-supplying respirator.

Atmosphere-supplying

Atmosphere-supplying respirators provide you with breathing air from a clean source. Supplied-Air Respirators (SARs) use an airline to feed clean air to the respirator's face piece, helmet, or hood. A Self-Contained Breathing Apparatus (SCBA) supplies air from tanks that are carried by the user. Fire fighters typically wear SCBAs.

Atmosphere-supplying respirators blow air into a face piece, helmet, or hood to create a "positive pressure" that prevents the hazardous air from leaking in. Frequently, these respirators are operated in the "pressure-demand" mode - this means that the air is regulated so more air is supplied as the wearer inhales.

People wearing SARs are limited in how much they can move around because of the airline. SCBAs are portable, but the tanks have limited operating times. Careful attention must be paid to the quality of the breathing air being supplied to the wearer of any atmosphere-supplying respirator.

ARE YOU PHYSICALLY ABLE TO WEAR A RESPIRATOR?

Wearing a respirator adds a physical burden to the job. Before you can be fit tested or required to wear a respirator, you must be evaluated by a physician or other licensed health care professional (PLHCP). You will need to fill out a medical questionnaire. You might need an exam and medical tests.

The PLHCP will give you and your employer a written statement on your fitness to use the respirator. The PLHCP can limit how you use a respirator and can require periodic follow-up medical evaluations.

SELECTING A RESPIRATOR

Your department will match the capabilities and limitations of the respirator to the hazards of the job. All respirators must be certified by the National Institute for Occupational Safety and Health (NIOSH) and must be used as they were intended to be used.

IDLH atmospheres

If the respirator is to be used in an Immediately Dangerous to Life or Health (IDLH) atmosphere, it must be either:

- A full face piece pressure demand SCBA certified by NIOSH for a minimum service life of thirty minutes, or
- A combination full face piece pressure demand supplied-air respirator (SAR) with auxiliary self-contained air supply.

Non-IDLH atmospheres

If the respirator is to be used in non-IDLH atmospheres (where there is enough oxygen and where contaminant levels are known) the respirator must be capable of protecting you from the contaminant levels that are expected during the job and in reasonably foreseeable emergency situations. Atmosphere-supplying respirators are appropriate for non-IDLH atmospheres.

For protection against gases and vapors, the employer can provide an air-purifying respirator in some non-IDLH situations. The canisters and cartridges must be approved for the hazards.

Air-purifying respirators can also be used to protect against particulates. NIOSH approval codes are based upon the filtering efficiency level and the filter's effectiveness on oil-based particulates.

HOW TO FIT A RESPIRATOR

Before you can be required to use a respirator with a tight-fitting face piece, you must pass a fit test. You cannot be fit tested if you have any facial hair growth (stubble beard growth, beard, mustache, or sideburns) between the face piece sealing surface and your skin. You must have the fit re-tested at least annually. OSHA's procedures for conducting the fit test must be followed. The type of test depends on the type of respirator you are using. During the fit test, you will perform exercises while wearing the respirator and a chemical test agent will be used to determine if the respirator is effective.

USING YOUR RESPIRATOR

Whenever you are wearing a respirator, make sure that you always leave the respirator use area:

- If you detect vapor or gas breakthrough, changes in breathing resistance or face piece leakage.
- If you need to change filter, cartridge, or canister elements.
- If you need to wash your face or the face piece to prevent eye or skin irritation.
- If your respirator needs repairs.

Seal checks: A good fit is important each time you wear a respirator with a tight-fitting face piece. To make sure that your respirator has a good seal, you must perform two seal checks each time that you put on your respirator. General instructions for these checks are:

Positive pressure check: Close off the exhalation valve and exhale gently into the face piece. The seal is good if you feel a slight positive pressure built up inside the face piece without air leaking out around the seal.

Negative pressure check: Close off the inlet opening of the canister or cartridges by covering with your palm(s) or by replacing the filter seals. Inhale gently so that the face piece collapses slightly, and hold your breath for ten seconds. The seal is good if the face piece remains slightly collapsed and there is no air leaking in around the seal.

Prepare for emergencies

If employees will be entering areas with IDLH atmospheres, at least one employee who is trained and equipped to provide rescue must remain outside and maintain communication with the employee(s) in the IDLH area. In addition, during interior structural firefighting, at least two employees equipped with SCBAs must enter the IDLH atmosphere together, and they must stay in contact with each other. Also, at least two people trained and equipped for rescue must remain outside during firefighting.

Know what to do in an emergency situation. If your respirator malfunctions while you are in a hazardous atmosphere, leave immediately. If your respirator is equipped with an auxiliary self-contained air supply, use it as you exit to safety.

CARE AND MAINTENANCE OF RESPIRATORS

Put a priority on keeping your respirator clean and in good repair. Don't risk irritations, disease, or contamination from using a dirty or damaged respirator.

If you have been issued your own respirator, clean and disinfect it as often as necessary to keep it clean. If a respirator is shared, clean it before the next person uses it.

If a respirator is kept for emergency use only, clean it after each use. When you're done with fit testing or training exercises, be sure to clean those respirators.

Store your respirator so it is protected from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals. Face pieces and other parts can be permanently deformed if they are smashed out of shape during storage.

Inspect your respirator before each use, and inspect it again when you clean it. SCBAs must be inspected monthly. Air cylinders must be kept fully charged. Respirators kept for emergency use must be inspected each month and are to be stored in clearly marked compartments or covers.

Check how the respirator is functioning. Look at the condition of the face piece, head straps, valves, connecting tube, cartridges, canisters, filters, etc. Make sure rubber parts are pliable and are not cracking. Have repairs made by a qualified person using manufacturer-approved parts. Get repairs done before you need to wear the respirator again.

RESPIRATOR USERS NEED TRAINING

You must have training before any required respirator use. Retraining is required at least annually. Changes in the workplace can also trigger retraining. If you are using a respirator on a voluntary basis where contaminants are at a safe level, your employer has to provide you with basic information on respirator use.

WORK AT WORKING SAFELY

1. Only use respirators that have been selected to protect against the hazards.
2. When you put on a respirator, check its fit and operation.
3. Look for respirator damage or deterioration before and after use.
4. Respirators need to be cleaned, disinfected, and stored properly. Follow filter, cartridge, and canister change schedules.